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Impact of Industry 4.0 on Occupations and Employment in Turkey

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Abstract

New technologies of this age is widely referred as Industry 4.0. The rapid increase in digitalization, robotization, and intelligent automation has great impact on markets, including the labour market. Technological changes destroy some jobs while generating new jobs and occupations. Replacement of jobs by robots, smart vehicles, digitalized and connected processes will have great impact on labour market resulting in mass unemployment. This paper aims to highlight prospective changes in occupations and job losses due to new technologies in Turkey. Following the introduction part, the paper proceeds to literature review about the effect of new technologies on jobs, skills, tasks, occupations, and employment. In the next part, a time analysis of occupations in Turkey takes place in order to bring out the occupations which might be substituted by Industry 4.0, and thus might result in mass unemployment. A framework for substitutable and completable occupations in Turkey has been constituted in this part, too. In the concluding remarks, it has been put forward that there will be considerable losses in some occupational categories with routine tasks, both in manual and cognitive jobs. In some other jobs, new technologies have a complementing effect which might lead to employment generation. It has been suggested that Turkey can get the better of negative impacts of Industry 4.0 by fully analysing the issue, improving training and skills upgrading, and promoting jobs in technology and creativity related new fields such as cultural and creative industries.

Keywords: Industry 4.0, technology, jobs, occupations, employment

Introduction

Technology has always changed and transformed the structure and composition of the economy, including the labour market, and has substituted many jobs leaving numerous working people vulnerable. Sophisticated mechanization, robotization, automation and digitalization have served to the

reduction of labour costs. In addition, the socio-economic impact of new technologies has perpetuated inequalities further.

Advanced technologies aim to reduce the costs and the risks that arise during production of goods and services, and they demand more sophisticated skills. On one hand, new jobs are created; on the other hand, some jobs become extinct due to the provision of new technologies. All this leads to a significant change in the structure and composition of the whole economy.

The new technology and its various facets have been referred to as 'Industry 4.0' after Germany launched a project to digitalize manufacturing at the Hannover Messe in 2011. Since then the term "Industry 4.0" has started to be used widely. Some call it 'Economy 4.0' and some refer to it as '4th Wave Industrial Revolution' within the context that Industry 1.0 meant the technology brought about by the Industrial Revolution; Industry 2.0 implied the Fordist Mass Production in the first decades of the 1900's; Industry 3.0 was the period where computerisation plus robotic automation were used in the 1990's. And now Industry 4.0 is the fourth wave of technological advancement.

Industry 4.0 implies cyber-physical systems monitoring the physical processes and making decisions with the aim of increasing output and productivity, and of reducing costs and risks arising during production in the industrial sector. Besides manufacturing, it is being used in various fields of services sector such as transportation, health, creative industries, etc. Various applications of Industry 4.0 as of sophisticated, smart, and mobile robots, interrelation of robots and machines (machine learning), cyber- physical and inter-connectedness of systems (internet of things), machines and systems empowered by computer softwares and their autonomous functioning (artificial intelligence), connecting and adding the real to the virtual (augmented reality) have started to increase rapidly.

This paper aims to highlight prospective changes in job losses and employment in Turkey due to the new technologies, and tries to constitute a framework for further analysis to be made by researchers. The methodology of the paper is hypothetical supported by empirical data which is obtained from the Turkish Institute of Statistics (TUIK), Household Labour Force Surveys, from 2001 to 2017 January. This study's shortcomings fundamentally results from the broad scope of the topic itself. In fact, the issue needs an elaborative analysis of thousands of jobs and occupations with skills and tasks associated with them. Nonetheless, this paper might be helpful for other researchers by shedding light on the matter and constituting a framework for further analysis.

After the introduction part, the paper proceeds to literature review about the effect of new technologies on jobs, skills, tasks, occupations, and employment. In the following part, a time analysis of occupations in Turkey

takes place. In the concluding remarks, it has been stated that there will be considerable losses in occupations that have routine tasks, both in manual and cognitive jobs. It is suggested that Turkey can come over this phenomenal fact of Industry 4.0 by focusing on training and skills upgrading in line with technological changes, and promoting jobs in new fields such as cultural and creative industries.

Effect of New Technologies on Labour Market Outcomes

Extensive use of automation, robotization, computerization and digitalization have serious effects on jobs, skills, and occupations. The impacts of technology on labour market have been studied notably within the context of job losses/ job gains and employment destruction/ employment generation.

A considerable number of researchers have examined the effect of technology on jobs and skills and have concluded that technology complements skilled labor, and generates ‘skill bifurcation’, raising the level of skills in complex jobs whereas deskilling the low-skilled jobs, and eventually creating a bias towards skilled labor in developed countries (Acemoglu, 1998; Autor et al., 1998; Ben-Ner and Urtasun, 2013; Bresnahan and Greenstein, 1999). It has been underlined that skill-biased technological change leads to a qualitative change in the jobs by the increase in demand for skills. Hence, technological change increases demand for skilled and educated workers (Golden and Katz, 2007).

The growth of low-skilled jobs on one hand, and the demand for high-skilled jobs on the other hand have led to a job polarization in the labour market, particularly in the USA (Autor and Dorn, 2009, 2010, 2013; Acemoglu and Autor, 2012). Job polarization occurs between high-skilled and high-wage occupations and low-skilled and low-wage occupations (Acemoglu, 1999). This in turn leads to wage inequality and unemployment of the non-skilled employee. A group of researchers have examined the impact of technology on the educational wage differentials in the USA and they have found that skill upgrading has been greater in computer-intensive industries (Autor et al., 1998).

In connection with job polarization, a comprehensive analysis was made to see the changes in the occupational structure in the USA. A considerable amount of jobs, 318 occupations, was taken and ranked by their skill levels from the lowest to the highest. The study showed that a substantial increase occurred in the low-education and low-wage occupations starting in the 1990’s and escalated thereafter. They put forward that there was a significant decline in real wages of low-skilled workers; and an increase in employment in both high- and low-skilled occupations relative to middle-skilled occupations. They added that the rapid use of new technologies take

over and fulfill the tasks which are performed by middle-skilled workers. They claimed that job or employment polarization was not unique to the USA and seen in the EU countries also (Acemoglu and Autor, 2011).

There are noteworthy analyses about the impact of technology in other developed economies. The use of new technologies have been found to increase the transition from employment to unemployment in France. The results show that the rate of job loss is significantly higher in industries which have the largest share of R&D and other new technologies' users (Givord and Maurin, 2004). Another research studied the technical change, skills, jobs, and wages in West Germany. It has been concluded that occupations require more complex skills today than in 1979, and that the changes in skill requirements have been more demanded in computerizing occupations (Spitz-Oener, 2006).

The skill-biased technological change hypothesis seems to disregard the existence of middle-skilled workers. A different approach is proposed by Autor et al.(2003) who focused on tasks rather than wages or employment. They studied the sources of job polarization and put forward the substituting and complementing effects of 'computer capital'. They stated that 'computer capital' substitutes workers who perform a limited and well-defined tasks which are called routine tasks. In other words, computers can easily perform those routine tasks. They added that 'computer capital' complements workers who carry out activities that require creativity, problem solving, and communication skills which are not limited and not well-defined. They are called non-routine tasks, and they cannot be substituted by digital technologies.

Those routine tasks exist in many middle-skilled office, clerical, and assembly jobs. Indeed, swingeing declines in clerical occupations seem to be a consequence of the new technologies substituting these tasks. The 'routinization' hypothesis suggests that new technologies will replace routine labor that has middle level skills and income.

Having said that, the process of routinization may occur both in low- and high-skilled jobs. The new technologies may complement or substitute both low or high-skilled workers (Acemoglu and Autor, 2011; Behaghel et al., 2011). Therefore it would be elucidatory to mention various particularities of routine and non-routine tasks.

Routine and non-routine tasks are divided into two categories, abstract/cognitive and manual tasks. Both routine and non-routine tasks can be abstract or manual. Abstract tasks which are also referred as cognitive or analytical tasks require problem solving, judgement, creativity, analytical and abstraction skills. The analytical tasks do not need in-person interactions. Some examples for such occupations are engineers, mathematicians, designers. However some cognitive jobs might require complex interpersonal

interactions, such as attorneys, scientists, and managers, doctors. Some abstract tasks include routine tasks, as in bookkeeping. Interpersonal jobs which require in-person interaction can be manual or cognitive. These jobs, be manual or cognitive, cannot be automated due to this particularity. Manual tasks require situational and/or environmental adaptability, visual and/or language recognition, and in-person interactions. Some jobs that include such tasks are beauty and health workers, home aides, construction laborers, salespersons, security personnel, and motor vehicle operators (Acemoglu and Autor, 2011; Autor and Dorn, 2009).

The occupations and tasks which cannot be automated, at least for now, are non-routine cognitive/analytical and non-routine manual and interpersonal ones (Fonseca et al., 2013). These jobs are less susceptible to substitution by new technologies due to the demand for problem solving, judgement, creativity, in-person interactivity, flexibility, and environmental adaptability (Autor and Dorn, 2009).

Chart 1: Characteristics of Occupational Tasks

Tasks	Routine	Non-routine
Cognitive/ abstract	- librarians -keyboard clerks	-managers -artistic professionals -scientists
Manual	-plant assemblers -medical technicians	-beauticians -plumbers -health aides

Source: Autor and Dorn (2009); Acemoglu and Autor (2011).

What impact digital and smart technologies would have on labour market outcomes is a hot topic on the agenda of many researchers and policy makers. Frey and Osborne (2013), who have been referred by numerous researchers, examined the impact of future computerisation on the US labour market, with the aim of predicting the number of jobs at risk. They estimated the probability of computerisation for 702 detailed occupations. According to their findings, about 47 percent of total US employment is claimed to be at risk.

The researchers provided evidence that wages and educational levels show a strong negative relationship with an occupation’s probability of computerisation; and they added that computerisation enters into more cognitive domains, too. They referred to the estimates by McKinsey Global Institute who suggests that ‘sophisticated algorithms’ can substitute for about 140 million full-time knowledge workers worldwide.

For the EU countries, a particular research which includes sixteen European countries, covering the period of 1993-2010 has been conducted to exhibit the phenomena of polarization and routinization (Goos et al., 2009). The researchers found a distinct pattern of polarization with an increase in high-paying and low-paying occupations, and a decrease in medium-paying

occupations in Europe. The increase in high-paying jobs was seen mostly in professionals and managers; and the increase in low-paying jobs was seen in personal services, transport, and sales workers. The decrease was seen in medium-paying jobs such as craft workers, machine operators, and office clerks. The average decline in medium-paying, middle- skilled jobs across the countries was 8 percent. In 13 of total 16 countries, high wage occupations increased their share of employment with 6 percent. In the all 16 countries, low wage occupations increased in size relative to middle wage occupations with 10 percentage points.

Other results focusing on job generation can also be seen in the literature. In a recent report (Boston Consulting Group, 2015), it has been studied how the introduction of digital industrial technologies will affect the evolution of 40 job families in 23 industries in Germany. It is forecasted that 610,000 jobs will be lost in assembly and production, but 960,000 jobs will be created particularly in information technologies. Hence, the report concludes that there will be an increase of 350,000 jobs in Germany through 2025.

In Germany, a prominent project named ‘The QuBe’ is being run under the joint leadership of the Federal Institute for Vocational Education and Training (BIBB) and the Institute for Labour Market and Career Research (IAB)¹. The project provides the probable development of labour demand and supply in terms of qualifications and occupations. According to IAB’s employment research (2016), Economy 4.0 will increase the size of jobs in services. This research examined 15 occupational fields out of 50 occupational fields which were mainly from the manufacturing industry. The exception was the ‘occupational field 33’, namely ‘finance, accounting, bookkeeping’ which was affected the most along with the occupations in the manufacturing industry.

At an industry level, 320,000 jobs will be lost in 2025 compared to the QuBe baseline projection, while about 290,000 additional jobs will be created by 2025. With respect to the occupational fields, about 1.22 million jobs total will be lost and on the other hand 1.19 million jobs will be created in different fields by 2025.

The last but not the least, an issue needs to be mentioned here. In a study about the off-shored jobs, it is argued that any job which does not need in-person interactions can ultimately be outsourced regardless of whether its primary tasks are abstract, routine, or manual. The researchers (Blinder and Krueger, 2009; 2013) found that about 25% of the US jobs were off-shorable.

Susceptibility of Occupations to New Technologies in Turkey

¹ It is carried out in collaboration with the Institute of Economic Structures Research (GWS) and the Fraunhofer Institute for Applied Information Technology (FIT), Germany.

In this section, I tried to analyze the prospective trend in occupations in the Turkish labour market in order to highlight the susceptibilities of some occupations and jobs to new technologies on one hand, and to bring forward the advantages in some occupations which might be enhanced and augmented by the use of new technologies on other hand.

ILO has classified jobs and occupations according to the tasks and duties undertaken in the jobs; and those tasks and duties are correlated with the skills and education levels of the working people (1). This classification is called the International Standard Classification of Occupations, ISCO 88 which is composed of nine major categories: (1) legislators, senior officials, and managers; (2) professionals; (3) technicians, and associate professionals; (4) clerks; (5) service workers, and shop and market workers; (6) skilled agricultural and fishery workers; (7) craft and related trades workers; (8) plant and machine operators and assemblers; (9) elementary occupations.

In the paper, I used both the main categories (with 1-digit) and the sub-categories (with 3-digits). For example, the main category '4' denotes the group of 'clerks', '43' stands for 'numerical and material recording clerks', and '431' is 'numerical clerks'.

In this analysis, I didn't include the 9th category, the "elementary occupations" because this category has always been the most vulnerable one in every sense, whether by the new technologies or other means. The subcategories of this group are cleaners and helpers (91), agricultural, forestry and fishery labourers (92), labourers in mining, construction, manufacturing and transport (93), food preparation assistants (94), street and related sales and services workers (95), refuse workers and other elementary workers (96). This occupational category has the lowest educational attainments, skills, and income levels. Some of these elementary jobs can be affected negatively by new technologies such vehicle, window, laundry and other hand cleaning workers (912), manufacturing labourers (932), transport and storage labourers (933). On the other hand, some of the jobs will not be substituted by robots or digital technologies because the tasks that these occupations perform are quite trivial to be replaced by robots or machines. The jobs in this category should be evaluated according to the technological capital used in this group. In other words, if technological capital is not directed to that specific occupation/job, then there won't be any grounds for substitution effect by new technologies. In Turkey, the number of workers in this category increased greatly during the reference period 2001-2017. It was 1.84 million in 2001; reached to its highest level of 4.16 million in 2016; then it fell to 3.66 million in 2017.

As specified before, all occupations can be broadly grouped as routine or non-routine, and cognitive or manual. Routine tasks encompass standardized, limited, well-defined set of both cognitive and manual tasks;

non-routine tasks don't include standardized tasks. Cognitive (or abstract) tasks demand problem solving, judgement, creativity, and/or complex in-person interactions; manual tasks require situational adaptability, visual and/or language recognition, and in-person interactions (Acemoglu and Autor, 2011; Autor and Dorn, 2009; Autor et al, 2003).

According to these characteristics, 'non-routine and manual', and 'non-routine and cognitive (or abstract)' occupations will not be susceptible to digitalization, robotization, and automation, at least not in the near future. New technologies will complement these non-routine tasks.

However, 'routine and cognitive (or abstract)', and 'routine and manual' jobs will be rapidly substituted by new technologies. It can be deduced that all routine jobs, whether cognitive or manual are substitutable by new technologies. This susceptibility will eventually lead to a rapid increase in unemployment rates.

In light of the above characterization of the tasks, I analysed the main categories and subcategories of occupations by using the least squares method. For the analysis, I used the number of people working in five main categories in a time series from 2001 up to 2017 January. The data used in the paper are obtained from the Turkish Statistics Department, Household Labour Surveys.

The total number of people working at all occupations was 21.5 million in 2001 and reached to 26.7 million in 2007 January. Any increase in the number of the occupations which are substitutable by new technologies will lead to high rates of unemployment in that category. If the increase in the occupation category is slight, then unemployment in that category might be slight. Any decrease in the number of occupations which are substitutable by new technologies will not lead to technological unemployment. The assumptions and the findings about occupations in Turkey are as below:

(A) Technicians and Associate Professionals (3rd category) include subcategories of science and engineering associate professionals (31), health associate professionals (32), business and administration associate professionals (33), legal, social, cultural and related associate professionals (34), and information and communications technicians (35).

In the 3rd category, some of the occupations can be substituted (replaced) and some of them can be complemented by new technologies. For example, financial and mathematical associate professionals (331), process control technicians (313), medical and pharmaceutical technicians (321) can be replaced by new technologies due to the routine tasks they perform. On the other hand, ship and aircraft controllers and technicians (315), nursing and midwifery associate professionals (322), traditional and complementary medicine associate professionals (323), sales and purchasing agents and brokers (332), artistic, cultural and culinary associate professionals (343) will

probably be complemented by digital technologies because of the situational adaptability and in-person interactions that the tasks of these occupations require.

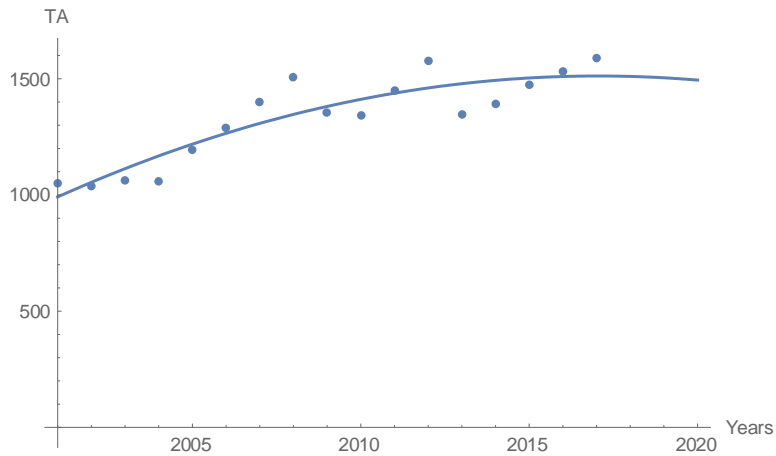


Figure 1: The number of technicians, and associate professionals (TA) in Turkey, in thousands, polynomial, $R=0.811$

Source: Author’s calculation, data from Turkish Institute of Statistics (TUIK), Household Labour Surveys, 2001-2017 January.

In Turkey, a moderate increase occurred in 2008 (1.51 million). After 2008, it increased slightly and reached to 1.59 million in 2017. This category is regarded as highly susceptible to digitalization. However, there will not be mass unemployment in this category because of the slight increase in the number of occupations. Nevertheless, necessary measures have to be taken for this category also.

(B) Clerical Support Workers (4th category) include subcategories of general and keyboard clerks (41), customer services clerks (42), numerical and material recording clerks (43), and other clerical support workers (44). Most of the clerical occupations are susceptible to digitalization. Secretaries (412), keyboard operators (413), tellers and money collectors (421), numerical clerks (431), material recording and transport clerks (432) will be substituted via automation and digitalization. Some of the client information workers (422) which require situational adaptability and in-person interactions might not be substituted by new technologies.

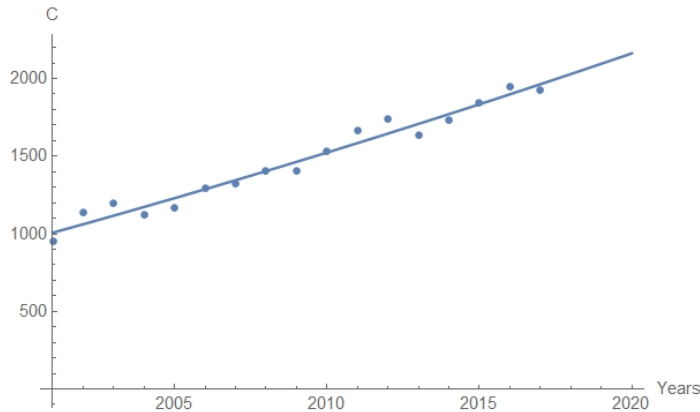


Figure 2: The number of clerks (C) in Turkey, in thousands, polynomial, $R=0.966$
 Source: Author’s calculation, data from Turkish Institute of Statistics (TUIK), Household Labour Surveys, 2001-2017 January.

In Turkey, a substantial increase occurred in this category in ten years. It was 1.32 million in 2007 and went up to 1.93 million in 2017. Any increase in this category, which is highly substitutable by new technologies, may end up with mass unemployment. This group is one of the most vulnerable groups which needs new job trainings and/or upgradings in order to cope with the challenges brought about by new technologies.

(C) Services and Sales Workers (5th category) encompass mostly non-routine jobs and occupations with high in-person interactions and situational adaptability. This category includes personal services workers (51), sales workers (52), personal care workers (53), protective services workers (54).

The non-routine tasks demanded by these occupations imply that they cannot be substituted by robots or digital technologies (such as cooks (512), hairdressers, beauticians and related workers (514)). However, some of the services and sales jobs, such as conductors (511) -but not guides (511), shop salespersons (522), and cashiers and ticket clerks (523), can and will easily be substituted by robots and digital means.

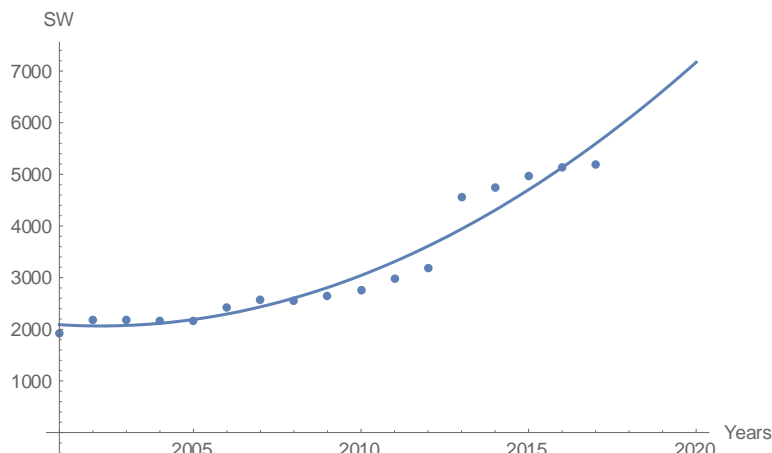


Figure 3: The number of service, and shop and market sales workers (SW) in Turkey, in thousands, polynomial, $R=0.943$

Source: Author’s calculation, data from Turkish Institute of Statistics (TUIK), Household Labour Surveys, 2001-2017 January.

A very rapid increase is witnessed in this category in Turkey. The number of workers in this category was 2.57 million in 2007 and went up to 5.19 million in 2017. The low-paid and substitutable subcategories of this group will face difficulties by the intense use of digital technologies. The increase in the number of occupations in this category implies that there is the danger of mass unemployment for the substitutable jobs in this category.

(D) Plant and Machine Operators and Assemblers (8th category) include subcategories of stationary plant and machine operators (81), assemblers (82), drivers and mobile plant operators (83). Most of the sub-categories of this group are highly susceptible to robotization, automation, and digitalization.

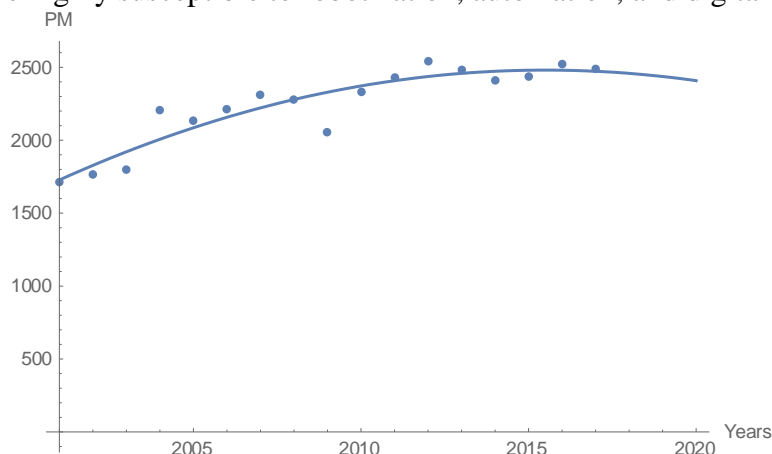


Figure 4: The number of plant and machine operators and assemblers (PM) in Turkey, in thousands, polynomial, $R=0.856$

Source: Author’s calculation, data from Turkish Institute of Statistics (TUIK), Household Labour Surveys, 2001-2017 January.

The number of people in this category did not change much in Turkey. It was 2.31 million in 2007 and became 2.49 million in 2017. This slight increase implies that mass unemployment might not happen in this category. However, this group is the most vulnerable one due to its high substitutability by automated machines, robots, digital means, and intelligent vehicles. Therefore, specific measures have to be taken for this category, too.

Chart 2: Occupations Substitutable by New Technologies in Turkey, by 3 digits
Source: categorized by the author.

Tasks	Routine
cognitive/ abstract	311- physical and engineering science technicians 331- financial and mathematical associate professionals 332- sales and purchasing agents and brokers 411- general office clerks 412- secretaries (general) 431- numerical clerks 432- material recording and transport clerks 441- other clerical support workers
manua/face-to-face	312- mining, manufacturing and construction supervisors 313- process control technicians 321- medical and pharmaceutical technicians 413- keyboard operators 511- travel attendants, conductors and guides* 522- shop salespersons 523- cashiers and ticket clerks 812- metal processing and finishing plant operators 813- chemical and photographic products plant and machine operators 814- rubber, plastic and paper products machine operators 815- textile, fur and leather products machine operators** 816- food and related products machine operators 817- wood processing and papermaking plant operators 818- other stationary plant and machine operators 821- assemblers 831- locomotive engine drivers and related workers*** 832- car, van and motorcycle drivers*** 833- heavy truck and bus drivers*** 834- mobile plant operators****

* guides excluded; ** some of the processes of this subcategory might not be substitutable but complementable by new technologies; *** driverless vehicles might be launched in the near future; **** some of them can be replaced by intelligent vehicles while some will not be replaced due to the complexity of the task.

Routine jobs that are susceptible to technological change do not imply that all routine jobs will be replaced by robots and digital devices right away. Some occupations under the following sub-categories may not be susceptible to technology. On the other hand, some of the non-routine jobs which are not substitutable by new technologies for the time being can be substituted by

new technologies in the foreseeable future. For that reason, the examples below should be assessed and taken into consideration cautiously.

Chart 3: Occupations Complementable by New Technologies in Turkey, by 3 digits

Tasks	Non-routine
cognitive/ abstract	314- life science technicians and related associate professionals 315- ship and aircraft controllers and technicians 351- information and communications technology operations and user support technicians* 352- telecommunications and broadcasting technicians*
manual/face-to-face	322- nursing and midwifery associate professionals 323- traditional and complementary medicine associate professionals 324- veterinary technicians and assistants 325- other health associate professionals 333- business services agents 334- administrative and specialized secretaries 335- government regulatory associate professionals 341- legal, social and religious associate professionals 342- sports and fitness workers 343- artistic, cultural and culinary associate professionals 421- tellers, money collectors and related clerks 422- client information workers** 512- cooks 513- waiters and bartenders 514- hairdressers, beauticians and related workers 515- building and housekeeping supervisors 516- other personal service workers 521- street and market salespersons 524- other sales workers 531- child care workers and teachers' aides 532- personal care workers in health services 541- protective services workers 811- mining and mineral processing plant operators 835- deck crews and related workers

Source: author's categorization.

* some of these occupational subcategories may decrease due to increasing use of new technologies; ** some of the subcategories of this group can easily be replaced by new technologies, such as telephone switchboard operators (4223).

Concluding Remarks

In this paper, I tried to highlight probable vulnerabilities and disadvantages that some occupations might face due to the ongoing skill-biased technological change in Turkey. By analysing the four categories of occupations in a time series (2000-2017), I deduced that any prospective increase in the number of occupations with routine tasks will be substituted by new technologies and eventually will result in mass unemployment.

The extent of the jobs and occupations that might be substituted depends on the routine and non-routine tasks they they require. In some occupational groups, a limited amount of jobs might be replaced; yet in other groups a vast amount of jobs might be substituted.

The first, second, sixth, and seventh categories are not taken into consideration in this paper because these occupations include non-routine and cognitive tasks. These occupations which will not be affected adversely by new technologies due to high education and/or skill levels that they possess are legislators, senior officials, and managers (1st category); professionals (2nd category), skilled agricultural and fishery workers (6th category); and craft and related trades workers (7th category).

However, a number of jobs and occupations from 3rd (technicians and associate professionals), 4th (clerks), 5th (service workers, and shop and market sales workers), and 8th (plant and machine operators and assemblers) categories might be affected adversely and thus easily substitutable by new technologies because the tasks that they perform are routine.

In the 3rd category, only a limited number of occupations, namely science and engineering associate professionals, and information and communications technicians might be replaced by new technologies due to the routine tasks that these occupations require. On the other hand, health associate professionals, business and administration associate professionals, legal, social, cultural and related associate professionals will not be substituted by new technologies because these occupations require non-routine and face-to-face tasks.

Most of the clerical occupations (4th category) are susceptible to digitalization. Secretaries, keyboard operators, numerical clerks, material recording and transport clerks will be substituted by automation and digitalization, except the jobs that demand in-person interactions and situational adaptability. Some clerks are hired by central and local governments. For this reason, public policies need to be tackled very carefully because on one hand the state supports job generating initiatives which increase the amount of public clerks, on other hand the state adopts new technological improvements. Indeed digitalization is rapidly increasing in all public services that the government provides in Turkey (e-state).

Some of the service workers, and shop and sales workers (5th category) will be substituted by digital technologies. Shopping via internet is gaining more access in Turkey. However, a considerable amount of occupations in this category requires high in-person interactions, such as personal services workers, sales workers, personal care workers, protective services workers. Therefore, some of these jobs will not be substituted but will be complemented by new technologies.

The category of plant and machine operators and assemblers (8th

category) is highly susceptible to robotization, automation, and digitalization. This does not mean that firms will fire all stationary plant and machine operators, assemblers, drivers and mobile plant operators, and substitute robots, automated machines, intelligent devices and vehicles with them. It is just a warning that the routine tasks can easily be substituted by new technologies and this might result in mass unemployment in that category.

Technological changes have always acted as employment destroyers and employment generators. In order to deal with the tsunami of new technologies, Turkey urgently needs a comprehensive project for analyzing, mapping, and policy designing of jobs and occupations that the Industry 4.0 might have positive and negative effects. Surveys, at least in the leading sectors, can be made about prospective technological capital investments in order to see the substituting and complementing effects of new technologies. Education and vocational training needs to be remodelled and upgraded by the efforts of governmental and non-governmental stakeholders. Some unique jobs which new technologies and creativity are extensively used (cultural and creative industries) can be promoted. Above all, flowing with change by care, caution, and wisdom will bring more wealth and peace to Turkey and to all.

Acknowledgement

Many thanks to Assoc. Prof. Dr. Başak Karpuz, DEU, Department of Mathematics, for his kind assistance.

Endnote

(1) After 2007, ILO replaced ISCO 88 by ISCO 08 which is a four-level hierarchically structured classification that allows all jobs in the world to be classified into 10 major groups, 43 sub-major groups, and 130 minor groups, based on their similarity in terms of the skill level and skill specialization required for the jobs. Turkey has rearranged the occupation categories according to ISCO 08 recently . However, due to the availability of data, the classification I used in this paper is based on ISCO 88, which is not very different from ISCO 08.

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Implicación De Las Empresas En La Formación Profesional Para El Empleo. Análisis Sobre La Idoneidad De La Selección De Sus Acciones Formativas

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Abstract

The purpose of this paper is to approach the development of Vocational Training for Employment in Spanish companies. The research carried out follows a descriptive methodology with which it evaluated the essential aspects for the selection of training actions by companies. Among the results we find that this selection of training can be improved and pedagogical and training factors must be prioritized over economic. In summary, the data lead us to an analysis and reflection on the reality that is presented in terms of Training for Employment in Spain.

Keywords: Continuing professional development, lifelong learning, employability, competence

Resumen

El trabajo tiene como objetivo la aproximación al desarrollo de la Formación Profesional para el Empleo en las empresas españolas. La investigación realizada sigue una metodología descriptiva con la que se evalúan los aspectos esenciales para la selección de las acciones formativas por parte de las empresas. Entre los resultados nos encontramos que dicha selección de la formación es mejorable y deben priorizarse factores pedagógicos y formativos sobre los económicos. En definitiva, los datos nos llevan a un análisis y reflexión sobre la realidad que se presenta en cuanto a Formación para el Empleo en España.

Palabras clave: Formación profesional continua, aprendizaje permanente, empleabilidad, competencia.

Introducción

Hoy en día, la sociedad está inmersa en una situación compleja a la vez que cambiante, lo que requiere la continua actualización formativa de los trabajadores. Según el diccionario de la Real Academia (2014), el término formación hace referencia a la “acción o efecto de formar o formarse”, siendo el término formar “adquirir una persona más o menos desarrollo, aptitud o habilidad en lo físico o en lo moral”. En base a éste y coincidiendo con Casares (1990), en el concepto de formación encontramos un proceso superior a la mera instrucción, en la que la persona ha interiorizado esquemas conceptuales propios, poniendo en práctica razonamientos y principios que los hacen aplicables a la acción concreta.

La formación tal cual se entiende hoy, es explicada desde diversos conceptos situados muy próximos entre sí, sin los cuales sería muy difícil de comprender en la actualidad, entre ellos: sociedad del conocimiento, formación a lo largo de la vida o competencias profesionales. En pleno siglo XXI no cabe duda de que la sociedad en la que vivimos se encuentra basada en el conocimiento. La expresión “sociedad del conocimiento” se ha convertido en uno de los ejes centrales que explican y rodean muchas de las políticas socioeconómicas que se producen. Además este concepto lleva implícita la idea sobre la integración de las tecnologías de la información y comunicación (TIC) en el desarrollo de políticas educativas (Ornellas, Sánchez, Fraga y Domingo, 2015).

Acudiendo a la Organización de los Estados Americanos (2006), el tipo de sociedad necesario para competir y tener éxito frente a los cambios económicos y políticos del mundo moderno, hace referencia a la sociedad que está bien educada y que se basa en el conocimiento de sus ciudadanos para impulsar la innovación, el espíritu empresarial y el dinamismo de su economía.

Por tanto, se trata de un cambio en el sistema productivo mundial que obliga a la sociedad y en concreto a la actividad profesional de los formadores a una continua actualización, acceso al conocimiento y, por consiguiente a un proceso conocido como “Lifelong learning” o formación a lo largo de la vida.

Todo ello conlleva una serie de repercusiones en el mercado laboral y la empleabilidad de las personas que quieren acceder a un puesto de trabajo. Es aquí donde entra en juego el término de competencia profesional, el cual, según el Ministerio de Educación Cultura y Deporte (1999), es el conjunto de conocimientos y capacidades que permiten el ejercicio de la actividad profesional conforme a las exigencias de la producción y el empleo. Es decir, en este entorno de una sociedad del conocimiento que exige una formación a

lo largo de la vida (Aznar, Cáceres e Hinojo, 2011), las competencias profesionales son un requisito sine qua non para entrar y permanecer en el mercado laboral actual. Así, es como llegamos hasta el eje central de nuestra investigación, la Formación Profesional para el Empleo, entendida como proceso de adquisición de competencias profesionales que nos habiliten y mantengan en un puesto laboral.

Cabe resaltar que este trabajo forma parte de una investigación más amplia que deriva de un Trabajo Final de Grado con el título “Análisis de la formación profesional para el empleo”, defendido en la Universidad de Granada en junio de 2015 para la obtención del Grado en Pedagogía (Rey, 2015).

Marco conceptual de la Formación Profesional para el Empleo

La Formación Profesional para el Empleo queda legislada en España en el R.D.395/2007, de 23 de marzo como:

Subsistema integrado por el conjunto de instrumentos y acciones que tienen por objeto impulsar y extender entre las empresas y los trabajadores ocupados y desempleados una formación que responda a sus necesidades y contribuya al desarrollo de una economía basada en el conocimiento (p. 15584).

Los fines que persigue con las acciones que engloba la Formación Profesional para el Empleo según el R.D. 395/2007 son:

a) Favorecer la formación a lo largo de la vida de los trabajadores desempleados y ocupados, mejorando su capacitación profesional y desarrollo personal.

b) Proporcionar a los trabajadores los conocimientos y las prácticas adecuados a las competencias profesionales requeridas en el mercado de trabajo y a las necesidades de las empresas.

c) Contribuir a la mejora de la productividad y competitividad de las empresas.

d) Mejorar la empleabilidad de los trabajadores, especialmente de los que tienen mayores dificultades de mantenimiento del empleo o de inserción laboral.

e) Promover que las competencias profesionales adquiridas por los trabajadores tanto a través de procesos formativos (formales y no formales), como de la experiencia laboral, sean objeto de acreditación.

A su vez, ésta se encuentra integrada por:

a) La formación de demanda, que abarca las acciones formativas de las empresas y los permisos individuales de formación.

b) La formación de oferta, que comprende los planes de formación dirigidos prioritariamente a trabajadores ocupados y las acciones formativas dirigidas prioritariamente a trabajadores.

c) La formación en alternancia con el empleo, permitiendo al trabajador compatibilizar la formación con la práctica profesional en el puesto de trabajo.

d) Las acciones de apoyo y acompañamiento a la formación, que son aquellas que permiten mejorar la eficacia del subsistema de formación profesional para el empleo.

Gestión de la Formación Profesional para el Empleo

En España, el sistema de Formación Profesional para el Empleo es gestionado por la Fundación Tripartita de la Formación para el Empleo (Fundación Tripartita, 2007). Ésta fundación es la encargada de velar y controlar todas aquellas políticas y acciones referentes a la formación profesional de los trabajadores del territorio nacional.

Ésta se encuentra englobada dentro del Ministerio de Empleo y Seguridad Social, concretamente a través del Servicio Público de Empleo Estatal (SEPE).

Como venimos detallando, es el R.D. 395/2007, en el que se sientan las bases de su desarrollo y por el que se rige. No obstante, con la llegada de la Ley 3/2012, de 6 de julio, se incluyeron aspectos esenciales como:

[...] el derecho del trabajador a 20 horas anuales de formación vinculadas al puesto de trabajo y el deber del empresario de formar a los trabajadores para adaptarlos a las modificaciones de dicho puesto, la cuenta de formación y el contrato para la formación que pretende mejorar la inserción laboral y la cualificación de los jóvenes combinando trabajo y formación (p. 49125).

Metodología

Los objetivos sobre los que se inciden en esta investigación son los siguientes:

- Conocer la idoneidad de las elecciones que las empresas hacen de los cursos de formación.
- Identificar los criterios y su valor a la hora de seleccionar un curso de formación frente a otro.
- Concretar las características comunes de los cursos que las empresas llevan a cabo.
- Saber la opinión de los destinatarios sobre cómo la Administración controla la idoneidad y calidad de las acciones formativas.
- Conocer la percepción que los receptores (trabajadores) tienen de las acciones formativas.

El método de investigación escogido para realizar dicha investigación y atendiendo a los objetivos planteados, se basa en una metodología de corte descriptivo.

Se han usado tanto técnicas cualitativas (entrevista semiestructurada) y cuantitativas (cuestionario), consultadas en Fernández (2006). Con ello estaremos dando mayor rigor y calidad a la investigación haciendo uso del complementarismo metodológico.

Esto es un aspecto esencial que nos va a permitir obtener una aproximación más cercana y acorde con la realidad. Tanto en éste como en cualquier proceso de investigación, se da la metáfora del iceberg, en la cual solo es visible la punta de dicho iceberg, no lo sumergido. Si solo nos quedamos con aquello que está a nuestra simple vista, la evaluación sería errónea.

Con la triangulación y confrontación de múltiples datos, técnicas y sujetos estaremos obteniendo variedad de evidencias que nos ayudarán a integrar mejor la información y, por consiguiente a aproximarnos más fielmente a la realidad.

Participantes

Para llevar a cabo esta investigación se ha seleccionado un total de 18 sujetos, muestra que es representativa para afirmar los cambios y necesidades de formación de la organización objeto de estudio. Estos han sido escogidos en base a 2 categorías de actores en cuanto a la Formación para el Empleo:

a) Destinatarios de las acciones formativas (empleados que han cursado formaciones dentro de su empresa): 14 sujetos.

b) Personal de empresas (organizadores, impartidores, gestores... de la formación profesional para el empleo, en las propias empresas): 4 sujetos.

Instrumentos de evaluación

Se usan diversos instrumentos de evaluación en función principalmente de las categorías de actores anteriormente seleccionados como muestra.

Así, en la categoría a) Destinatarios de las acciones formativas, se usa el cuestionario. En la categoría b) Personal de empresas, se utiliza la entrevista semiestructurada. En cuanto al diseño de los instrumentos:

Para la realización del cuestionario nos hemos basado en las claves que aporta Martínez (2002), el cual desarrolla los aspectos a tener en cuenta a la hora de elaborar dicho instrumento. En este caso, hemos recurrido a los objetivos específicos anteriormente redactados para elaborar los ítems, ya que de este modo podremos recoger de manera precisa y concreta todo cuanto en esta investigación consideramos relevante.

Por otro lado, se ha diseñado una entrevista semiestructurada siguiendo los criterios de Anaya (2002). En función del grado de estructuración que se use en el instrumento de la entrevista tendremos un tipo u otro, ya que se acudió a los entrevistados con un guion previo, que nos permitió concretar e

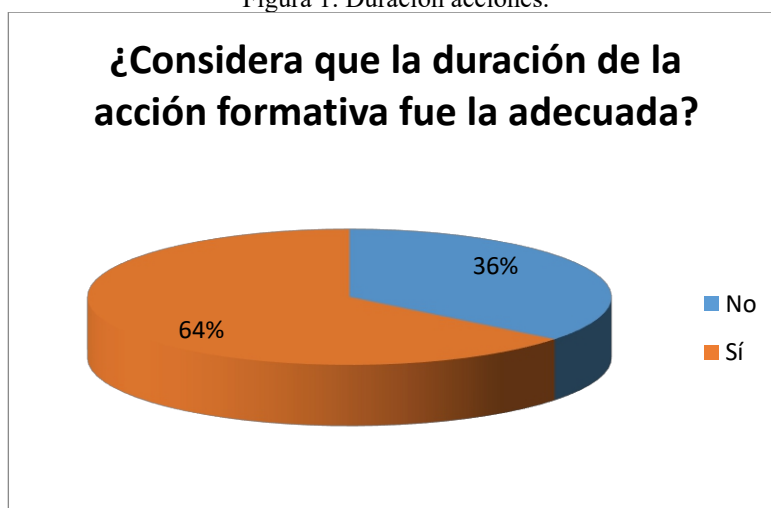
ir directamente a la información relevante, pero sin necesidad de tener un guion cerrado. El entrevistador por tanto debe ser el que guie de manera hábil y flexible al entrevistado, consiguiendo recoger la mayor información al respecto.

El motivo de esta elección de instrumento se debe a que las categorías de los sujetos que hemos seleccionado como muestra, son personas que poseen gran cantidad de información, experiencia y son grandes conocedores de la temática en cuestión, lo cual nos permite, conocer las particularidades y analizar al detalle nuestro problema de investigación.

Resultados

Los datos obtenidos a través de la aplicación del cuestionario a la muestra, nos proporciona los siguientes datos que analizamos y los más significativos pueden observarse en las figuras que se presentan. Se parte de que la totalidad de la muestra ha realizado alguna acción formativa (curso) organizada desde la empresa donde trabaja, considerando en el 67% de los casos que la duración de dichos cursos es la adecuada a los objetivos planteados en su programa (figura 1).

Figura 1. Duración acciones.



Respecto al objetivo específico que planteamos sobre los criterios de selección de un curso, buscando si existe la diversidad en la oferta formativa y si influye sobre todo la situación particular de cada empresa, la opinión de los destinatarios y no tanto la calidad de los mismos, en su elección, podemos observar como la opinión del empleado es tomada en cuenta mayoritariamente, con un 64% siendo preguntados directamente y con un 25% indirectamente (figura 2). En cambio, la realización de dicha formación es entendida por el 43% de los empleados como bastante necesaria, lo que indica que las acciones formativas son apreciadas por los empleados (figura 3).

Figura 2. Opinión elección cursos.

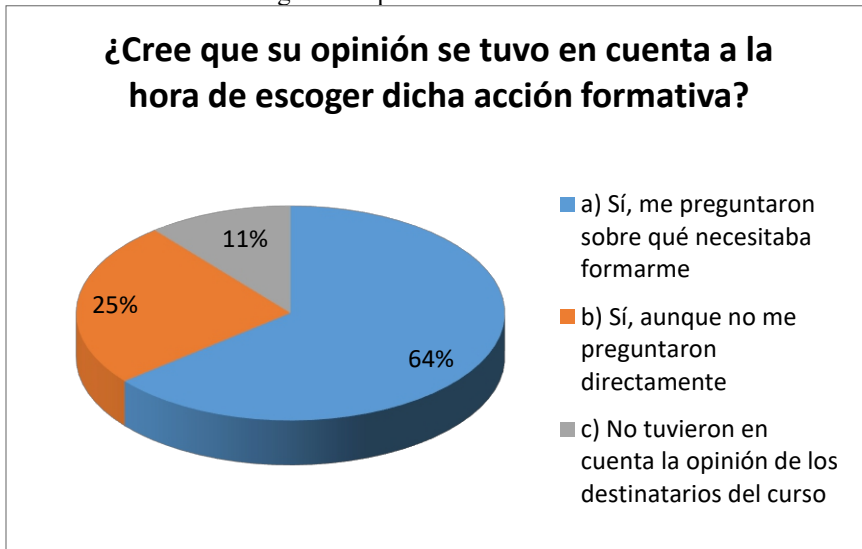
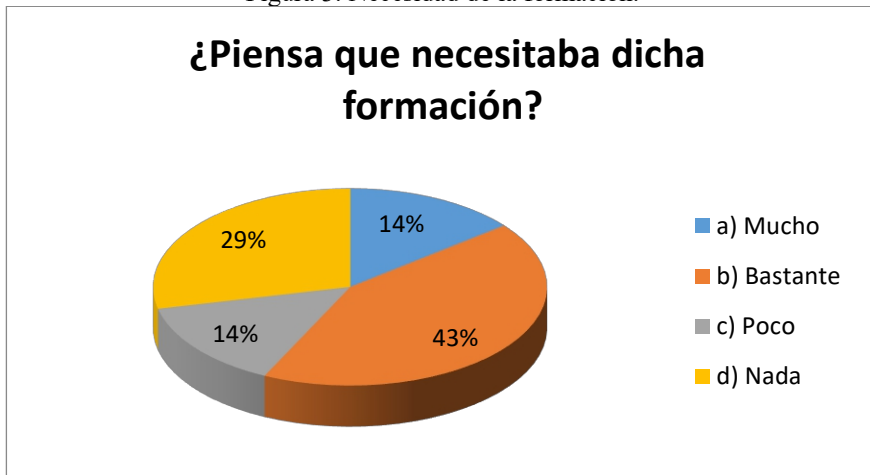
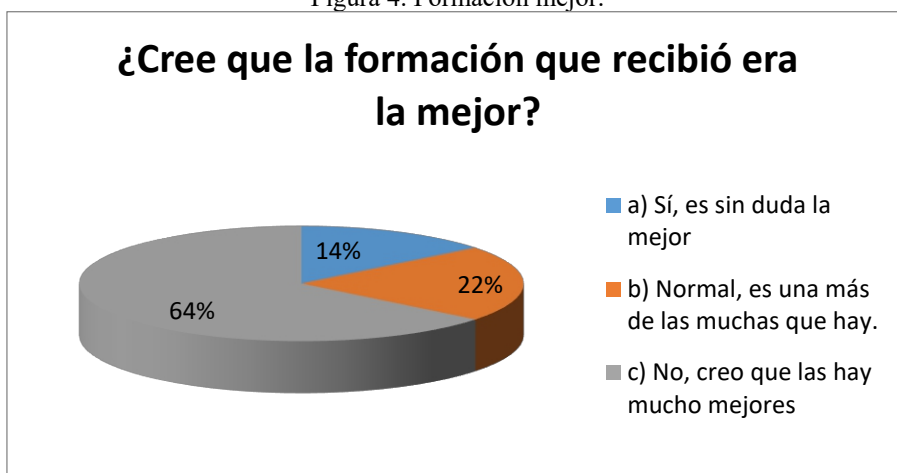


Figura 3. Necesidad de la formación.



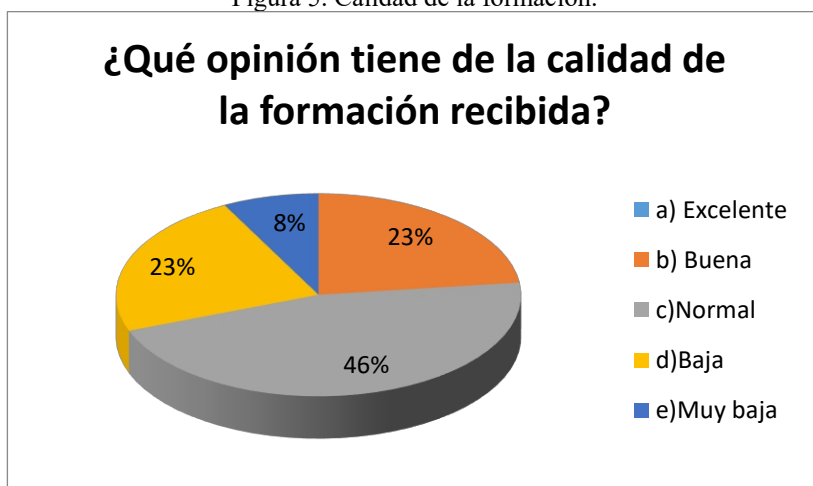
Sin embargo, el 43% de éstos perciben poco oportunos los criterios de selección, así como el 14% nada, lo cual evidencia que la selección no es percibida por los destinatarios como la más oportuna. Ejemplo de ello es que a la pregunta ¿cree que la formación que recibió era la mejor?, el 55% de los encuestados contestó que no, pensando que existen formaciones mejores para su situación que la que recibieron (figura 4).

Figura 4. Formación mejor.



Concretamente, la calidad no es percibida por los encuestados como un factor relevante que en su empresa se haya tenido en cuenta a la hora de seleccionar los cursos. Solo el 23% la valora como buena, siendo mayoritaria la opción c) Normal, con un 46% (figura 5).

Figura 5. Calidad de la formación.



Si contrastamos la opinión de los destinatarios con la del personal de empresas, encontramos que éstos últimos consideran la selección de los cursos como algo difícil, “no es fácil encontrar buenos cursos”, en lo que influye la situación propia de la empresa como “el factor económico”, “cumplir con el bono de formación, el tiempo...”, las necesidades que detectan en los empleados, “en las áreas de mejora”...

Se puede observar como los entrevistados hacen poca referencia a la calidad en base a criterios pedagógicos y didácticos, ya que se centran en los factores anteriormente citados para justificar las selecciones que realizan. Esto

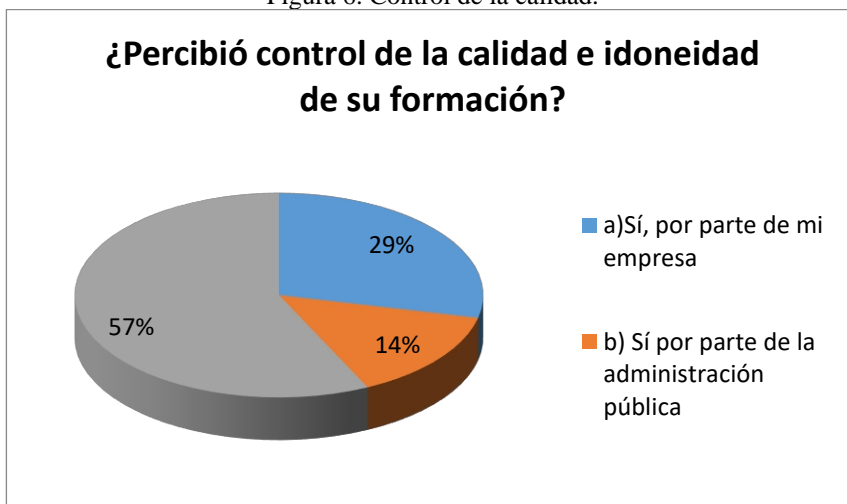
es algo que puede explicar que los destinatarios valoren como mejorable la selección de las formaciones.

Por otro lado, el objetivo específico respecto a las características comunes de los cursos de formación que se ofrecen, destacan los cursos online y los cursos presenciales puntuales con ponentes o tutores especializados en la materia. Todos los entrevistados coinciden en que la tendencia actual de la formación para el empleo gira en torno a las acciones de teleformación, aunque siguen teniendo presencia y alta relevancia las formaciones presenciales con tutores especializados en la temática de dicha acción formativa.

Los datos obtenidos también revelan, respecto a otro de los objetivos específicos que el control de la formación que se realiza en las acciones formativas es escaso, poco efectivo. En este sentido, el 57% de los destinatarios de la formación no percibió control, frente al 29% que lo percibió por la empresa y el 14% por parte de la administración pública (figura 6). Y todo el personal de empresas entrevistado coincidió en que los controles son “livianos”, “poco efectivos”, “escasos”...

Nos parece anecdótico el hecho de que todos los entrevistados hiciesen referencia a los fraudes de formación acontecidos, lo que afianza la idea de que su control no ha sido, ni está siendo adecuado. Aun así, y relacionándolo con la presencia cada vez más notoria de los cursos e-learning, añaden que están favoreciendo el mayor control y seguimiento de las mismas.

Figura 6. Control de la calidad.

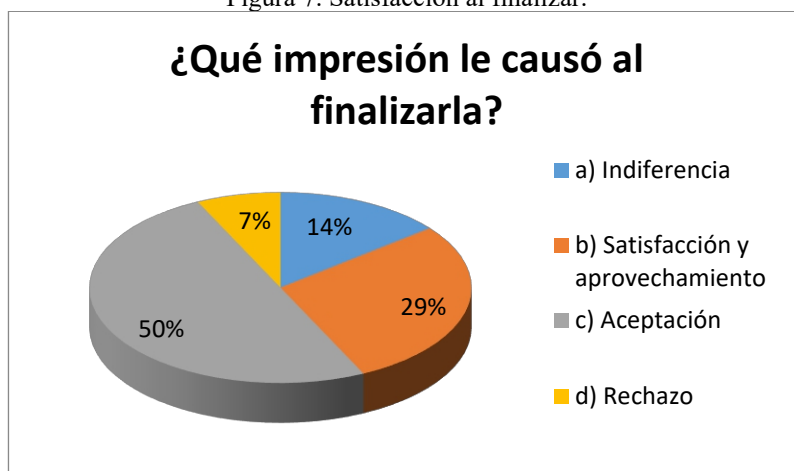


Finalmente destacar que la percepción que se tiene de las acciones formativas es de aceptación, aunque evidencian que pueden ser mejores en cuanto a calidad y selección.

El 50% de los encuestados las valoran al acabarlas con aceptación y el 29% con satisfacción y aprovechamiento (figura 7). Sin embargo, el 55% de los encuestados coincide en que existen formaciones mucho mejores (figura

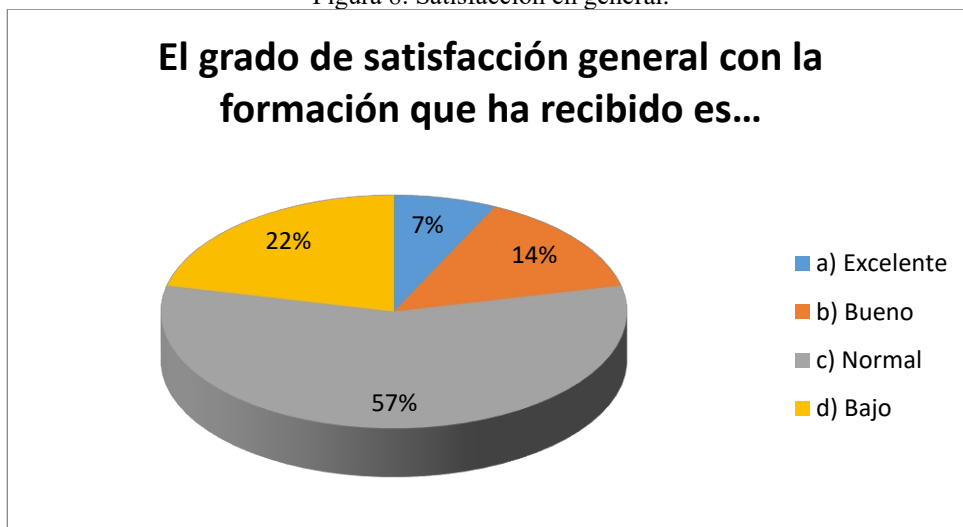
4). Ejemplo de ello es que el 46% consideran la calidad de los cursos como normal, frente al 23% de buena (figura 5).

Figura 7. Satisfacción al finalizar.



En la misma línea, los entrevistados evidencian que las formaciones son “normales, son formaciones un poco rutinarias”, “no demasiado fuertes”, “no es fácil encontrar buenos cursos”. No obstante la satisfacción general que se tiene de esas acciones es 7% excelente, 14% buena, 57% normal (figura 8), lo que denota que están satisfechos pero no en alto grado.

Figura 8. Satisfacción en general.



En cuanto a los resultados de la entrevista semiestructurada, a continuación se recogen las respuestas más relevantes de los entrevistados para cada una de las 5 categorías, divididas en distintos indicadores.

Categoría. Opinión formación empresa:

Indicador 1. Realización de la formación.

- Hacerse se hace... tú ya me entiendes...
- Pesa más el hacerla porque hay que hacerla que porque se necesite

Indicador 2. Dificultad de la formación.

- Normales, son formaciones un poco rutinarias.
- Muy especializada y práctica.
- Son muy light.
- No son demasiado fuertes.

Indicador 3. Satisfacción con la formación.

- Muchas de esas acciones no son ni las más idóneas, ni verdaderamente aportan mejoras.
- No nos salimos en exceso de 2 o 3 temáticas.
- Positiva. Aquí se prioriza mucho como base del éxito de la empresa.
- Muchas de ellas no son ni productivas ni muy bien valoradas por los trabajadores.

Categoría. Adecuación criterios pedagógicos:

Indicador 1. Criterios en los que se basa la empresa.

- Priman criterios como el prestigio de los ponentes, la empresa organizadora, si tienen parte práctica o no...
- De calidad pienso que sí... lo de los criterios pedagógicos o didácticos... tengo mis dudas, es evidente que algún que otro criterio de esos sí que habrá pero...
- Se basan en materiales, contenidos, docentes, plataformas y espacios de calidad alta.
- No es fácil encontrar buenos cursos específicos.

Categoría. Selección de los cursos:

Indicador 1. Opinión sobre los docentes.

- Aún podrían haber sido un poco mejores e innovadores.
- Un poco más creativos y trabajar los contenidos de un modo menos tradicional.
- Son muy rutinarios y clásicos.

Indicador 2. Opinión de los docentes.

- Siempre vamos con una idea muy fija de lo que queremos.
- Intentamos seguir nuestro plan de formación trazado en nuestra memoria anual, el cual parte de un análisis de necesidades, teniendo en cuenta las áreas de mejora.
- Pesa mucho el factor económico.

- Intentamos escoger cursos que sabemos que necesitamos.

Categoría. Características comunes:

Indicador 1. Modalidad de formación.

- Hay mucha oferta online. Aunque muchas de esas plataformas son tan insufribles, tan ambiguas y... y... con tan poca claridad que pocas veces ayudan al aprendizaje.
- No hay mucho más salvo los cursos presenciales, los cuales siempre intentan ser impartidos con personas relevantes en la materia.
- Las resumiría en teleformaciones, con tutores relativamente especializados mezclado con formaciones presenciales muy concretas de formadores o ponentes de mayor prestigio que desarrollan una temática.
- La modalidad presencial, o lo que viene siendo las charlas formativas, son muy valoradas.

Categoría. Control de la formación:

Indicador 1. Tipo de controles.

- Los controles no son demasiado efectivos, el limitarte a pasar una lista de asistencia y a entregar o no un determinado ejercicio no creo que asegure nada.
- No somos fraudulentos, pero sí que es cierto que los controles son muy livianos y se pueden falsear fácilmente.

Indicador 2. Percepción sobre el control formativo.

- Todo el mundo es consciente de la falta de controles que había sobre los cursos.
- El objetivo era gastar por gastar el bono y no el formarse.
- Yo percibo que es todo muy... muy escaso.

Discusión y conclusion

Como cierre de esta investigación se concluye que la Formación Profesional para el Empleo es una temática que requiere una continua reflexión y análisis, dentro del marco de una sociedad del conocimiento. Esto es lo que nos llevó a la realización de esta investigación, buscando dar a la Pedagogía el valor de requisito sine qua non en cuanto a la formación.

A partir de la revisión bibliográfica y a la investigación realizada, se ha profundizado y valorado la problemática planteada inicialmente acerca de si es correcta la elección de los cursos de formación profesional para el empleo que realizan las empresas desde el punto de vista pedagógico, hecha operativa en el objetivo del proyecto “conocer la idoneidad de las elecciones que las empresas hacen de los cursos de formación”.

En consonancia, la selección de los cursos es mejorable, ya que existen otros factores ajenos a los puramente formativos y pedagógicos que tienen gran relevancia a la hora de la selección. Esto no quiere decir que no sean tenidos en cuenta, sino que su importancia no se corresponde con el valor que verdaderamente tienen. Esto ocasiona como hemos podido observar, que las formaciones sean mediocres, comunes y rutinarias, no consiguen obtener el máximo provecho a algo tan fundamental y necesario en la situación que nos encontramos como es la formación continua. Por tanto, coincidiendo con los planteamientos de Tomás-Folch y Duran-Bellonch (2017) es necesario contextualizar los contenidos a la realidad de los participantes, así como fomentar una cultura de trabajo en equipo para asegurar una adecuada transferencia del campo teórico al práctico.

Los resultados nos arrojan que es necesaria una reformulación general del concepto e idea de formación, ya no solo por parte de los destinatarios entendidos como los trabajadores de una empresa, sino por las propias empresas que los organizan y diseñan, las administraciones públicas y, en definitiva, todos los agentes involucrados. Del mismo modo que como indican Jiménez, Sánchez y Sánchez (2010) se debe facilitar la asistencia de los trabajadores a las acciones formativas o implementar más acciones semipresenciales o e-learning.

La nueva reforma de la ley que se ha acontecido en el transcurso de la investigación es signo de esta necesidad, la cual esperamos que cambie y redefina en todos los implicados la concepción de la formación.

La formación es el motor de propulsión de la sociedad, personas capacitadas, competitivas y actualizadas son necesarias para superar los desafíos que nos aguardan en un futuro no muy lejano. No podemos considerarla como una obligación o un imperativo legislativo sino como una oportunidad de adentrarse y mantenerse en una sociedad en continuo cambio.

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Science Process Skills Characteristics of Junior High School Students in Lampung

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Abstract

The quality of international education is measured through PISA and TIMSS results and the member countries are very concerned about their students' ability to work on PISA and TIMSS. Countries with low PISA and TIMSS ratings indicate that students' science process skills in this country are low, including in Indonesia. Therefore, this research needs to be done to see the characteristics of science process skill (SPS) of junior high school students, especially in Indonesia. This study involved 9th-grade students of the academic year 2016/2017 in three randomly selected districts. The number of subjects involved in the study was 120 randomly selected respondents. The research was conducted by survey method, by giving SPSs questions to respondents. The results showed that the SPS of junior high school students in Lampung Province-Indonesia is low. Students from schools in the capital and school areas close to the provincial capitals have the characteristics of SPSs on "observing" and "classifying" indicators in the "moderate" category. Students from distant areas of the provincial capitals, the characteristics of their SPSs are "low", for all indicators (observing, classifying, predicting, interpreting, and communicating).

Keywords: Science Process Skills, student characteristics, junior high school

Introduction

The rapid development of science and technology today requires people to provide human resources (HR) of quality and capable of competing globally. One effort to improve the quality of human resources is through quality science education because science is one discipline that examines three aspects, namely science as a scientific product, process, and attitude. Science as a product is a body of knowledge that includes concepts, principles, laws, and theories (Duschl, 2007). Science as a process plays a role in acquiring and developing knowledge through the SPSs. Learners should have the ability to

do things using scientifically mastered processes and principles, learning to know and learning to do must be achieved in teaching and learning activities (UNESCO, 2012).

In fact, the quality of science education in some countries, especially in Indonesia is still categorized as low. Based on the assessment of the Education Development Index (EDI) indicates that Indonesia is ranked 64th out of 120 countries (UNESCO, 2012). The results of The United Nations Development Program (UNDP) in 2013 states that the Human Development Index (HDI) covering aspects of manpower, health, and education is ranked 121 out of 185 countries. Based on The Learning Curve Institute's report on the analysis of education performance, Indonesia is ranked 40th out of 40 countries of education mapping (Pearson, 2014).

Some research results have shown that the ability of teachers in the utilization of technology has not met the needs, the learning process is still conventional (teacher centered) that tend to be boring and less interactive and communicative in transferring knowledge, decreased motivation learners to study in the learning process, and the still minimal ability and skill of the educator understanding the contents of learning (Kirkup et al., 2007; Nentwig et al., 2007; Wahono, 2011). These studies focused more on the inability to understand the scientific concepts from the teacher, due to the learning of science that has not been able to facilitate the students' need for intellectual, social, and physical skills derived from the fundamental abilities that students actually already possessed within themselves. Such basic capabilities or skills among others include the ability or skill to observe or watch, which also includes calculating, measuring, classifying, and finding space or time relationships, making hypotheses, planning research, controlling variables, interpreting data, drawing inferences, predicting, applying and communicating (Hotaman, 2008). These skills are further identified as SPSs.

SPSs are a learning approach that focuses on developing the skills of students in processing knowledge, finding, and developing facts, concepts, and values that are scientifically needed (Semiawan, 1992). Through the SPSs, it is expected that the learning process can involve the students in finding and developing the knowledge they get independently in accordance with the current curriculum demands, namely one that is student-centered learning where the teacher is the facilitator (Suryani et al., 2015). Some research results indicate that students' inability to develop the ability to find and develop knowledge is due to the students' inability to understand the scientific concepts from teachers and failure to achieve learning in building the conceptual knowledge of students (Coll, 2008; Holbrook & Rannikmae, 2009; Nentwig et al., 2007). This is a result of learning that is not yet capable of facilitating students to develop the SPSs that already exist in students.

The learning process in schools in some countries with low PISA and TIMSS outcomes (including Indonesia) is still a major problem, as reflected in the results of PISA (Programme for International Student Assessment) study of Indonesian students from year to year shows that the trend of Indonesian students' science literacy has not shown any significant change. In 2015, the proportion correct grade of Indonesian students was still low, the average score earned for science was 493, therefore Indonesian students are ranked eighth lowest in the rank of 69 out of 76 PISA participating countries (OECD, 2016). These results do not vary much with PISA results in previous years. Similarly, the results of TIMSS (The Trends in International Mathematics and Science Study) in 2007 and 2011 in mathematics and science for 8th-grade junior high school student participants could only reach intermediate level (Kemdikbud, 2014). Similarly, for the TIMSS of 2015, shows Indonesian students are ranked 36 out of 49 countries in terms of performing scientific procedures in science subjects (OECD, 2016). The study thus indicates that the PISA and TIMSS results of Indonesian students always go hand in hand and doesn't move forward. The low science ability of Indonesian students is influenced by many factors such as the education system and curriculum, methods and learning models of teachers, learning facilities, learning resources, and teaching materials.

In accordance with the nature of science, the process of science learning should ideally rest on the scientific process. The scientific process involves a variety of SPSs (Towle, 1989: 16-31). When viewed from the level of SPSs, then observing skills is an initial skill in the process of science. This is followed by higher process skills such as the skills of measuring, classifying, and ending with the highest skill, namely, experimenting (Rezba et al., 1995: 1). SPSs can be used as alternative solutions to improve the effectiveness of science learning process, because learning that is oriented to SPSs will always involve cognitive or intellectual, manual, and social skills which, if integrated into a single learning unit, will form three dimensions of skills namely, basic skills, followed by the skills of data collection / developing / processing, and the highest is the skill to investigate or experiment (Bryce et al, 1990: 2). The development of SPSs enables students to acquire the skills necessary to solve everyday problems (Aydoğdu et al., 2014). Students who use the SPSs will have a positive attitude towards science. Therefore, learning that emphasizes the SPSs is essential to creating Science literacy in students (Espinosa, et al., 2013).

Learning with SPSs in junior high school requires a deep understanding of concepts because junior high school students are still in the development period of intelligence, creativity, language skills, learning motivation, and mental and physical conditions. In line with that, Karamustafaoglu (2011) argues that SPSs will not develop in students when

the learning process does not accommodate the occurrence of scientific activities that can trigger the growth of scientific attitudes, sharpen the process skills in students, so as to become capable to actively participate in an investigation. Therefore, it is the responsibility of teachers to develop students' SPSs as supporters in developing the mastery of the concept of science, so as to provide better learning outcomes (Rizal, 2014).

Some studies have found that the low level of students' SPSs is due to the generally insufficient or low SPSs that science teachers and junior high school teachers have (Aydoğdu, 2006; Harty & Enochs, 1985; Karşlı, et al. 2009; Lotter, et al., 2007, Sahin-Pekmez, 2001, Turkmen & Kandemir, 2011) and teachers rarely use these skills in their classes (Oloruntegbe & Omoifo, 2000), so that students' SPSs are difficult to develop. Similarly, most Indonesian Junior High School students have low SPSs. The Low SPSs of Indonesian students is reinforced by the results of Anam's (2014) research which conducted a study of thirty (30) representative students from 30 MI (Madrasah Ibtidaiyah) in Sumedang Regency on Madrasah Science Competence (MSC) activities. The results showed that four (4) types of students' average process skills, namely observing, planning experiments, classifying, and making tables were in the less adept category, and were not adept in concluding skills. The same is also the research result of Sukarno et al. (2013) which states that the SPSs of junior high school students in Jambi on the skill to reach a conclusion, observation, predict, measure and classify is still low. Therefore, it is necessary to conduct research to obtain information about "Characteristics of SPSs of Junior High School Students in Lampung-Indonesia". The goal is to provide knowledge about the characteristics of students' SPSs to science learning on the study of the excretory system, so it can be used as a reference to improve the effectiveness of science learning in schools.

Methodology Of Research

Research design

This research was conducted in Lampung Province-Indonesia with research design using the survey method. Research subjects were students from four (4) junior high schools in Lampung Province selected by using the random sampling technique. One class is taken from each school, namely 9th-grade students who have obtained learning materials on the human excretion system so that students who become the subject of this study amounted to 120 respondents.

Research procedure / Data collection

The research procedure was by collecting information gained from students' SPSs result to all students spread in four schools, including an junior

high schools that is far from the provincial capital (SMPN 1 Sukoharjo and SMPN 1 Natar), junior high school close to the provincial capital (SMPN 1 Gedongtataan), and junior high school in the provincial capital area (SMPN 16 Bandar Lampung). Furthermore, each of the junior high schools was coded: SMPN 1 Sukoharjo (SMP 1), SMPN 1 Natar (SMP 2), SMPN 1 Gedongtataan (SMP 3), and SMPN 16 Bandar Lampung (SMP 4). Data collection from the research subjects was conducted through tests and surveys.

Instruments and Data analysis

This study used a multiple-choice instrument test of 25 questions with 4 choices of answers. The test is used to measure the level of SPSs that includes observation (5 test points), classifying (5 test items), predicting (5 test points), interpreting (5 test points), and communicating (5 test points) skills. The SPSs (SPS) questions developed, before being used, was tested first through the validation of the expert (judgment expert). Based on the results it is found that the SPSs test questions that were developed could be used for data retrieval. Furthermore, the data has been collected by descriptive analysis, namely by calculating the percentage of students who get high, medium, and low-grade test results.

Results Of Research

Measurement of Mastery of students' SPSs in this research is related to a concept of SPSs. How deep the knowledge of the concept of SPSs of students' is indicated by the ability/skill of observing, classifying, predicting, interpreting, and communicating. The data obtained show that the average SPSs of students are at a relatively low level ($44.17\% \pm 6.34$). The SPSs for observing and classifying skills were grouped as moderate ($51.33\% \pm 22.41$ and $50.67\% \pm 22.59$), the skill of predicting, interpreting and communicating is grouped as low, $41.33\% \pm 23.87$; $39.33\% \pm 21.99$; and $38.17\% \pm 21.06$. Furthermore, in terms of the acquisition of SPSs for each school shows that most of the junior high school students in Lampung Province still have low SPSs on the concept of human excretion system. In sequence, junior high schools with students of high SPSs are SMP 2 (SMPN 1 Natar) 6.67%; SMP 3 (SMPN 1 Gedongtataan) 6.67%, and SMP 4 (SMPN 16 Bandar Lampung) 33.33%. While students from SMP 1 (SMPN 1 Sukoharjo) do not have students with high SPSs achievement. In detail, the data of students' SPSs in some junior high schools in Lampung Province is illustrated in Figure 1 below.

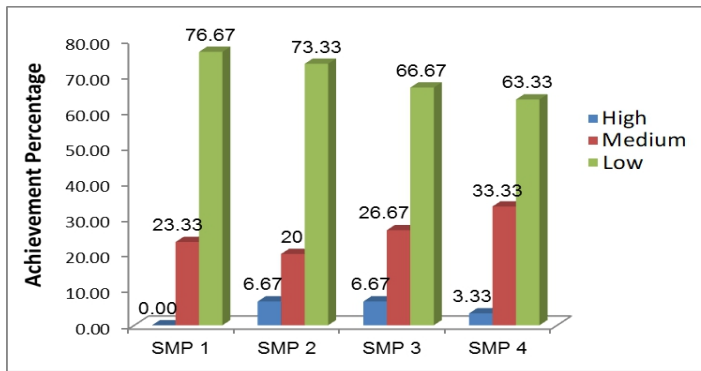


Figure 1. Percentage of students per school with the achievement of SPSs score on the high, medium, and low category.

From the perspective of SPSs for each indicator obtained, it also shows data that 50% of students have a SPS profile that is categorized as low for all indicators. Data about the SPSs profile for each indicator is illustrated in Figure 2 below.

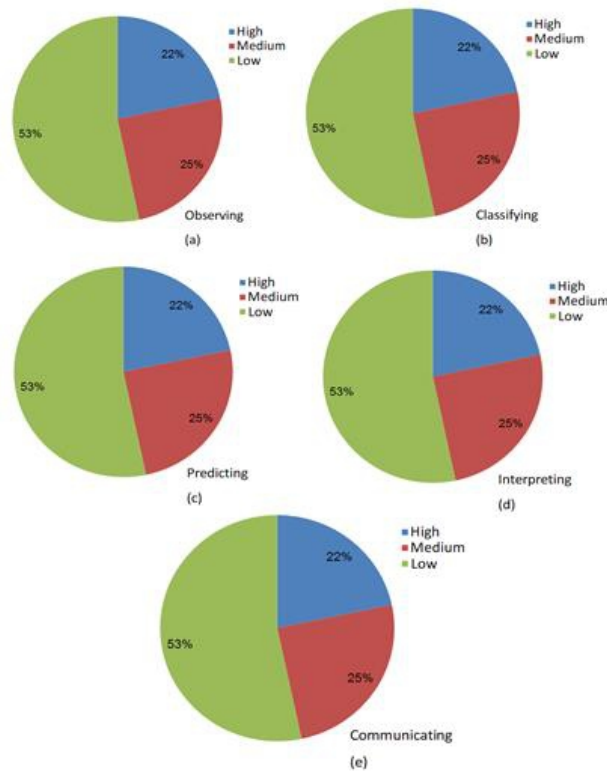


Figure 2. SPSs Achievement Percentage for each indicator with high, medium, and low category. (a). Observing indicator, (b) Classifying indicator, (c) Predicting indicator, (d) Interpreting indicator, and (e) Communicating indicator.

From the perspective of the average achievement of each indicator of the students' SPSs which includes observing, classifying, predicting, interpreting, and communicating, one finds that only in the observing and classifying indicator does students' achievement reach the "medium" category (> 50%). The analysis results of each indicator as a whole are presented in detail in Figure 3 below.

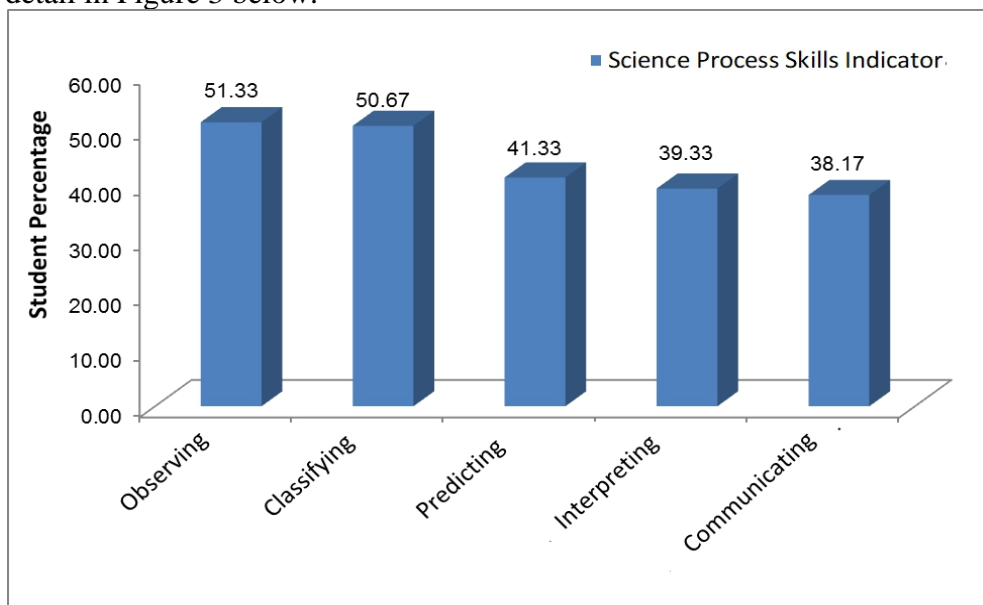


Figure 3. Percentage of students with the SPSs achievement for each indicator.

Discussion

The results showed that the SPSs of learners in Lampung Province are categorized as low. The low SPSs are influenced by many factors, among others the education system and curriculum, methods and learning models from the teachers, learning resources, and teaching materials. Thus, the low SPSs of junior high school students in Lampung Province indicates that science learning process in schools has not been able to facilitate the students to develop the SPSs that students actually possess.

The low SPSs of students were due to not being trained with problems of high-level thinking skills during learning, such as problem-solving, analysis, and interpretation. Students were not trained in reading observational data in the tabular form or describing observational data obtained from test results. This is in line with the research of Temiz, et al (2006) which states that when testing SPSs five basic capabilities will emerge, which are naming, generalizing data, interpreting data, identifying variables, and formulating hypotheses.

In reference to the results of the study, it indicates that the average level of student SPS mastery is of the "low" criterion with the best SPS achievement

on the observing and classifying indicator with the "medium" criterion and the indicators of interpretation, prediction, and communication received the lowest achievement level with the "low" criterion..

The analysis results on the observing and classifying indicators are categorized as high. Students have been able to use various senses to collect or use relevant facts in explaining phenomena and students can also classify facts to find differences, similarities; contrasting characteristics; compare; looking for basic grouping or classification. This means that students have been able to understand the study materials of the human excretion system through SPSs exercise problems. According to Dirks, et al (2006) SPSs can be taught to students in the form of exercises in making graphs, analyzing data, creating research designs, writing scientific papers, and scientific discussions. According to Buntod, et al (2010) learning with SPS should be routinely practiced with the goal of bringing out individuals who can conduct research, ask questions, achieve scientific knowledge by using scientific thought, and even use knowledge to solve problems encountered in everyday life.

The ability to classify data, based on the results of written tests are categorized in the medium criterion. This indicates that students' understanding of the structure and function of bones is good so that students are able to properly classify bones. This is also supported by the materials taught to students, which is about the human motion system so that students can directly explore parts of their motion system in finding answers to the questions posed. As stated by Warianto (2011: 14), it is important to develop classification skills to make it easier to identify a problem.

Interpretation ability assessment by making conclusions from observational data shows better results. This shows that students prefer to interpret data presented in the form of description and supported by a theory underlying the data. This is in line with the views of Pie (Johnstone and Robinson, 2012: 2) which state that communication is based on symbolic values and with different expressing processes such as word, voice, body language, writing, and pictures. All accumulated into the experience and transmitted between individuals, generations, times, races, and cultures in several forms such as speaking, writing, body language or symbols.

The ability to predict by estimating something that has not occurred based on an existing tendency or pattern to answer a question is still very low, students are still unable to relate the what usually occurs and possibilities that may occur with reference to the student's previous knowledge.

Student ability to communicate data in graphs also shows poor results as indicated by written tests results on questions related to communication with the low criterion. It also shows students' understanding of data about the human excretion system that is still categorized as low, so that students have

not been able to change the form of data being presented into a written statement as a conclusion whilst not changing its meaning.

When viewed from the analysis of the achievement of the SPSs for each school (Figure 1) shows that students coming from schools residing in the provincial capitals (SMP 4) have a profile of SPSs for the concept of excretory systems that are similar to those of the school which is close to the provincial capital (SMP 3). Furthermore, students from schools far from the provincial capital have lower SPSs characteristics, especially for indicators of predicting, interpreting, and communicating. These varied results indicate that selecting locations in 4 different schools turned out to provide the fact of differences in students' ability to understand the concepts of human excretory systems, thus their SPSs achievement becomes lower. Differences in location, background, knowledge, and school/home environment have a role in influencing their competence in the form of SPSs. Hariadi (2009) also states that the competence of science is influenced by several factors such as the environment and the student's knowledge. Another thing that can be expressed from the results of this study is the average ability to provide reasons, predictions, or communication, where the average score of SPSs in each question is 0-4, but the ability of students is only within the range 0-2.

The characteristics of the SPS of Junior High School students in Lampung Province is only on the skills of observing and classifying with a "medium" category. For indicators of predicting, interpreting and communicating skills, the characteristics of the students' SPSs are still categorized as low. The low characteristic of the SPSs in the predictive, interpreting, and communicating indicators is indicated to be due to the student inability to understand the human excretion system, especially in explaining the related internal process in the body in relation to excretion organs, excretion system abnormalities, and excretion process of metabolic waste remaining substances that are no longer needed by the body. In addition, students also have not been able to predict the presence of residual substances that will be excreted through urine, sweat, or breathing. Most students only memorize the parts of the organs and processes in the excretory system, so students are prone to forget and are not sensitive to problems related to the human excretion system. This finding is consistent with the findings of Luky (2014: 3) which states that in science learning, most students only memorize the parts of the organs and processes in the human excretion system but are unable to apply them in real situations, thus students are prone to forget and insensitive to the problems in human life associated with the excretory system. These findings suggest that students have not been able to relate concepts that have been studied with real-world phenomena and concepts being studied. This indicates that the application of the conceptual change process of students to science learning has not been done by science teachers. The reason is that

most science teachers still do not have a sufficient level of understanding of the conceptual change process, so that science learning is still limited to the delivery of material according to the curriculum (Gamze & Mustafa, 2014).

It is very important for the teacher to know about the findings on the SPSs characteristics, so they can apply an appropriate learning strategy. Given that learning by prioritizing SPSs will make students active in learning and teachers can easily persuade students to process new information through concrete experience and can facilitate students to achieve the goals of science learning, so that the learning objectives that have been formulated from each basic competency can be achieved and students are able to do the study thoroughly. Learning by being oriented to SPSs can also encourage students to discover their own facts, concepts of knowledge and foster the attitudes and values of student personality. Therefore, the SPSs is an important component in the implementation of learning because it can affect the development of students' knowledge (Ango, 2002). This SPS has a function as an effective competency to study science and technology, problem-solving, individual and social development (Akinbobola, 2010: 234). This SPS is very important because it can assist students in translating abstract concepts into concrete experiences (Ango, 2002: 11).

Conclusion

Based on data analysis results, it can be concluded that the SPSs of Junior High School students in Lampung Province-Indonesia are categorized as low. Each student coming from a different school possessed different SPSs characteristics. Students from schools in the capital and schools near provincial capitals have the same SPSs characteristics, namely "observing" and "classifying" but still in the "medium" category. Students in regions farther from provincial capitals have SPSs characteristics that are still categorized as "low", either on the indicators of observing and classifying, as well as on higher indicators, namely predicting, interpreting and communicating. Overall, students' SPSs only reached the indicators of observing and classifying and not achieving a higher indicator yet.

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Título Superior De Música. Relación Entre La Motivación De Logro Musical Y Las Conductas Desadaptativas De Abandono En Estudiantes

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Abstract

The motivation of musical achievement is one of the main requirements to achieve academic success during the formative period of the students (Zarza, 2014). In this sense, behaviors such as the consumption of substances or cognitions such as thoughts of dropping out of musical studies are usually very present in music students and generate long-term maladaptive behavior sustained over time that can prevent a correct musical training or even the actual abandonment of them. We present a first approach to the relationship between motivation and substance use, as well as the presence of thoughts of abandonment. In this sense, an improvement is proposed in the training plans that tend to a greater individualization and surveillance of the presence of this type of behavior linked with low motivational levels.

Keywords: Music education, music students, sensitivity to reward, sensitivity to punishment, achieve motivation

Resumen

La motivación de logro musical es uno de los principales requerimientos para conseguir, durante el periodo formativo de los estudiantes, éxito académico (Zarza, 2014). En este sentido, conductas como el consumo de sustancias o cogniciones como los pensamientos de abandono de los estudios musicales suelen estar muy presentes en los estudiantes de música; asimismo, generan a largo plazo comportamientos desadaptativos sostenidos en el tiempo que pueden llegar a impedir una correcta formación musical o incluso el abandono real de los mismos. Se presenta una primera aproximación al estudio de la relación entre la motivación con el consumo de sustancias, así como con la presencia de pensamientos de abandono en estudiantes de música. En consecuencia, se propone una mejora en los planes formativos que tiendan a una mayor individualización y vigilancia de la presencia de este tipo de conductas ligadas con bajos niveles motivacionales.

Palabras clave: educación musical, estudiantes de música, motivación de logro musical, consumo de sustancias, pensamientos de abandono.

Introducción

Desde algunas décadas, se tiene asumido por la comunidad científica que la motivación de logro es un constructo en el que confluyen distintas teorías interpretativas del mismo, y han sido numerosas las investigaciones que han relacionado diversos constructos antaño separados (Zarza, 2014).

La conducta que se exhibe para la consecución de un determinado logro, está caracterizada por presentar una direccionalidad en tanto en cuanto conlleva una elección personal de las acciones a realizar y una persistencia en el mantenimiento en el tiempo de dicha conducta. Por su parte, son importantes en la génesis de conductas encaminadas hacia la consecución del logro, diferencias individuales como la ansiedad ante el éxito o el fracaso, en el logro de la tarea (Manassero y Vázquez, 1998).

El modelo de Weiner (1986) facilita la comprensión del estilo atributivo, el cual presupone que ante la ocurrencia de un evento, se le busca explicaciones que en ocasiones no coinciden con la realidad; pero, que sin embargo, inciden en los sentimientos que se generan y en las conductas posteriores, de ahí que se entienda que presentan un valor motivacional en una conducta determinada.

Este modelo, desde una perspectiva integradora y atribucional, asume que si el resultado es inesperado, negativo o importante, el sujeto buscará la causa del resultado teniendo en cuenta los antecedentes de información con los que se contaba, historia personal pasada, historia de otros respecto de dicha tarea, las reglas causales, la perspectiva del actor y del observador, los sesgos atribucionales etc. Así, desencadenarán en la atribución del resultado a una serie de causas particulares, tales como la capacidad, el esfuerzo realizado para la obtención de la meta, las demandas específicas de la tarea, la suerte, las características físicas y personales del individuo, etc. (Zarza, 2014).

A partir del modelo de Weiner se puede asumir que el proceso de motivación puede ser descrito en términos de cuatro grandes dimensiones: cogniciones adaptativas, comportamiento adaptativo, cogniciones impeditivas o maladaptativas y comportamiento maladaptativo (Martin, 2001, 2003, 2007); y se debe tener en cuenta que la conciencia de estar envueltos en determinadas acciones puede ser motivo constituyente del sentido de eficacia de los comportamientos que se estén llevando a cabo, así como de la habilidad de la propia persona para atribuir el origen y las consecuencias de las acciones que se realizan (David, Newen y Vogeley, 2008; Gallagher, 2000, 2008).

Las cogniciones adaptativas vienen representadas por constructos como la autoeficacia, la valoración del logro y la adquisición de dominio en la

tarea. Las cogniciones impeditivas o maladaptativas vienen determinadas por constructos como la evitación del fallo, sensación de falta de control sobre la situación y ansiedad. El comportamiento adaptativo viene descrito por la planificación correcta, el dominio de la tarea y la persistencia, mientras que el comportamiento maladaptativo está caracterizado por el auto-hándicap y la falta de compromiso con la resolución de la tarea (Martin, 2008) y puede acarrear consecuencias como el abandono en este caso de los estudios musicales o el consumo de sustancias para el afrontamiento de esas situaciones percibidas con poco control.

El compromiso con los mismos merece especial atención y enlaza con el estudio de la motivación para la consecución de logros, entendido éste como la obligación contraída para con la resolución de la tarea, bien haya sido ésta encomendada por otros o asumida por uno mismo. Así pues, encontramos que en diferentes ámbitos como el académico, el deportivo o el musical, está claro que hay características principales y atributos relevantes que pueden predecir las actuaciones futuras; en este sentido, por ejemplo, tanto la motivación como el compromiso con la tarea son causas determinantes en el logro de objetivos y metas (Martin, 2008). En términos de las teorías del locus de control, se ha encontrado que cuando los músicos perciben más control y autonomía en la situación existe una mayor perseverancia en el afrontamiento de las situaciones difíciles (Renwick y McPherson, 2002).

En el sentido de todo lo expuesto hasta aquí, el objetivo de esta investigación no es otro que el de comprobar si los distintos niveles motivacionales de los estudiantes están ligados a la presencia de conductas desadaptativas como los pensamientos de abandono de los estudios musicales o el consumo de sustancias ante las actuaciones públicas.

Método

Participantes

La muestra está compuesta por 154 estudiantes (83 hombres y 71 mujeres y un caso perdido) del Título Superior de Música pertenecientes a 5 centros de formación superior españoles. La edad media de los estudiantes es de 21.80 (D.T. = 3.80) años con un rango desde los 16 hasta los 44 años.

En cuanto a las familias instrumentales de pertenencia encontramos 44 instrumentistas de viento madera, 24 de viento metal, 48 de cuerda frotada, 18 instrumentistas de tecla, 10 de cuerda pulsada, 5 percusionistas y 5 estudiantes de canto.

Procedimiento

Tras una primera toma de contacto con la dirección de los centros superiores de música que solicitaron participar en el estudio, un miembro del equipo de investigación se desplazó hasta ellos para hacer un mejor acopio del

cuestionario diseñado *ad hoc* y que debía ser respondido por los estudiantes de los centros.

Instrumentos y análisis de datos

Para el estudio de la motivación de logro se empleó la escala de motivación de logro en contextos musicales elaborada por Zarza (2014). Este cuestionario consta de 26 preguntas que son evaluadas en una escala Likert de 9 puntos; en el cómputo general de la misma, arroja un estadístico de fiabilidad α de Cronbach de 0.775. Muestra en su versión confirmatoria de 18 ítems (α de Cronbach de 0.774) 5 subescalas diferenciadas en: interés con 4 ítems ($\square=20$), esfuerzo con 2 ítems ($\square=10$), perfeccionismo con otros 2 ($\square=10$) ítems, tarea con 8 ítems ($\square=40$), y examen con 2 ($\square=10$) ítems nuevamente.

En lo concerniente a las conductas de afrontamiento se plantearon dos preguntas, una relacionada el consumo de sustancias, medicamentos, tisanas y/o drogas de diverso tipo, y otra cuestión en la que se preguntaba si alguna vez se había querido abandonar los estudios musicales debido a problemas con la ansiedad escénica o la falta de motivación para llevarlos a cabo.

Relativo al análisis de datos, con el programa informático SPSS en su versión 19.0, se han llevado a cabo análisis descriptivos y correlacionales.

Resultados

Los factores de interés, esfuerzo, tarea y exámenes arrojan valores medios superiores a la media teórica del instrumento de evaluación de la motivación (Tabla 1). Estas medias, además, son significativamente diferentes a las medias teóricas en todos ellos. Se puede observar que en el factor interés $t = 38.622$; $p = .000$; en el factor esfuerzo $t = 20.103$; $p = .000$; para el factor exámenes $t = 10.301$; $p = .000$; y para el factor tarea $t = 6.120$; $p = .000$. Por su parte, el factor de perfeccionismo presenta una media significativamente inferior a la media teórica del instrumento ($t = -5.632$; $p = .001$).

Tabla 1. Estadísticos descriptivos.

	N	Mínimo	Máximo	Media	Media Teórica	Desv. típ.
Interés	154	20.00	36.00	31.9282	20	3.83265
Esfuerzo	154	4.00	18.00	14.5273	10	2.79479
Perfeccionismo	154	2.00	18.00	7.9935	10	4.42142
Tarea	154	21.00	64.00	45.0448	40	10.22994
Exámenes	154	5.00	18.00	12.2819	10	2.74911
N válido (según lista)	140					

Analizada en términos porcentuales la población en función de su alejamiento de la media obtenida en desviaciones típicas, se aprecia que aproximadamente el 18.2% de los estudiantes muestran puntuaciones alejadas por la cola inferior en más de una desviación típica en el factor interés; este

porcentaje se sitúa en torno al 13% para el factor esfuerzo, en un 19.5% para el factor perfeccionismo, llega hasta aproximadamente un 18.8% para el factor tarea y se sitúa en un 17% para el factor exámenes.

De manera correlacional (Tabla 2), por una parte se observa que el interés se asocia significativa y directamente proporcional con los factores de esfuerzo ($r = .588$; $p = .000$) y exámenes ($r = .184$; $p = .022$) mientras que lo hace de manera inversa con el factor de perfeccionismo ($r = -.204$; $p = .011$). De otra parte, se ve cómo el factor tarea correlaciona a su vez de manera directamente proporcional y significativa con el factor de exámenes ($r = .467$; $p = .000$).

Tabla 2. Correlaciones.

	Interés	Esfuerzo	Perfeccionismo	Tarea	Exámenes
Interés	1	.588**	-.204*		.184**
Esfuerzo	.588**	1			
Perfeccionismo	-.204*		1		
Tarea				1	.467**

En lo concerniente al estudio de las conductas de afrontamiento, consumo de sustancias o pensamientos de abandono, se aprecia cómo en el caso del consumo de sustancias, el 33.8% de la población reconoce haber consumido algún tipo de sustancia para afrontar los requerimientos específicos de los conciertos públicos durante su periodo formativo. En este sentido, se ve cómo el 41.7% de las personas que han tomado algún tipo de sustancia han recurrido al empleo de fármacos, el 29.2% a productos de herbolario como tisanas o infusiones, un 16.7% combinaba bien productos de herbolario con medicamentos, y un 12.5% recurría al empleo de drogas o al consumo de alcohol.

En el caso de las conductas de abandono de los estudios musicales, de los 117 casos válidos, el 12% reconoce haber tenido pensamientos de abandono de los estudios mientras que un 88% indica que no ha querido abandonar los estudios musicales. En este sentido, se encuentra una asociación significativa entre las personas que han consumido sustancias y que han querido abandonar los estudios musicales ($\chi^2 = 4.184$; $p = .041$).

Analizadas las posibles diferencias de medias que se pudieran producir en los factores motivacionales en función de las estrategias de afrontamiento, se observa que se producen diferencias de medias significativas en el factor tarea ($F = 4.402$; $p = .038$); siendo los estudiantes que no han consumido sustancias los que presentan una media superior (46.2657; D.T. = 9.03) a la de los estudiantes que sí que han consumido algún tipo de sustancia (43.4533; D.T. = 11.16).

En el caso de considerar los pensamientos de abandono como factor fijo, se comprueba que también se producen diferencias significativas en las puntuaciones en función de una u otra respuesta. Así en el factor tarea ($F =$

15.827; $p = .000$) las personas que no han tenido pensamientos de abandono presentan una media mayor (46.6764; D.T. = 9.38) que las personas que sí que han pensado en abandonar (36.1429; D.T. = 8.55). De manera análoga ocurre con el factor exámenes ($F = 9.463$; $p = .003$) en donde las personas que no han presentado pensamientos de abandono tienen una media mayor (12.5020; D.T. = 2.55) que las personas que sí que han presentado pensamientos de abandono (10.2143; D.T. = 3.01).

Conclusión

El constructo de la motivación, entendido éste de manera multifactorial es uno de los constructos más importantes de cara al sostenimiento de una formación musical exitosa. En este sentido, se ha podido comprobar, al igual que en Zarza (2014) cómo los bajos niveles motivacionales están relacionados con la toma de sustancias. Del mismo modo, se ha podido constatar cómo la toma de sustancias junto con los bajos niveles motivacionales están relacionados con los pensamientos de abandono. Este tipo de conductas de consumo de sustancias, especialmente las que implican la toma de medicamentos o drogas, conllevan a largo plazo la habituación a las mismas sin que se reporten mejorías ni en los pensamientos de abandono ni en los niveles motivacionales, ocasionando en el largo plazo conductas disfuncionales (Rojo et al., 2009). De esta forma, se considera, tal y como se pone de manifiesto también en Zarza, Casanova y Orejudo (2016a, 2016b), que una de las vías para mejorar este tipo de conductas claramente desadaptativas debe partir desde el punto de vista pedagógico. Es decir, podría mejorar con la creación y asentamiento de nuevas directrices pedagógicas, tanto a nivel institucional como individual; unas directrices en las que se preste una especial atención de carácter individualizado al alumnado y en las que se pretenda también la mejora en las habilidades formativas de carácter técnico-musical del mismo de manera progresiva, fomentando un mayor control sobre la tarea específica de la ejecución musical.

Con todo ello seguro que se podrán reducir y modificar este tipo de conductas desadaptativas en conductas y cogniciones adaptativas en el conjunto del alumnado y, por consiguiente, mejoraría notablemente la formación musical de los estudiantes.

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Competition and Food Intake: A Laboratory Study

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Abstract

The aim of this paper is to analyze the intake of two types of sweet snacks by women using competitive environments as stressors. We study the effect of competition on food intake from two perspectives: overall consumption and the substitution between two snacks (a “healthy” and a “non-healthy” snack).

For this purpose we did a laboratory experiment in which the participants were women. They were offered chocolate candies and raisins as they solved several problems. Half of the participants completed the tasks at a non-competitive piece rate and the other half under a competitive tournament incentive scheme. The results show that at the median the participants’ intake was higher under tournament than piece rate payment. Moreover, the increase in food intake was led by a rise in chocolate consumption. We conclude that competition increases the consumption of fat, calories and carbohydrates and thus affects eating behavior and promotes unhealthy patterns. This research contributes to the strand of the literature that focuses on factors that affect the eating behavior which influences health.

Keywords: Food intake, competition, laboratory experiment, women

Introduction

The relationship between stress and food has been extensively studied. Stress is the response to the imbalance between psychosocial demands and resources, i.e., a transactional process between the person and the environment with social and cognitive mediation mechanisms (Steptoe, 1991). Control of food intake is one of them, to the extent that eating disinhibition generates an escape. According to Wallis and Hetherington (2009), by affecting self-control, eating moves the attention from the negative stimulus to an immediate one, food. The higher reported stress, greater feelings of disinhibition occur, promoting hunger and binge eating.

Furthermore, it is possible that stress increases subjective discount rates, which implies a lower preference for the future, or impatience (Delaney et al., 2014), causing people to re-weigh options (Wright, 1974). Besides, as stress levels increase, individuals are less able to make rational choices (Meichenbaum, 2007), acting as “satisfiers” instead of “optimizers” (Savage and Torgler, 2009).

Several empirical studies support the idea that overeating is a response to stress, since in a high-stress scenario, people tend to consume larger amounts of food (Greeno and Wing, 1994; Habhab et al., 2001; Dallman et al., 2003; Dallman et al., 2005).

Regarding type of food chosen, most empirical work finds that stress creates a preference for sweet (Habhab et al., 1992; Rutledge and Linden, 1998), high-fat (Kandiah et al., 2006; Liu et al., 2007; Ng and Jeffery, 2003; Wardle et al., 2000) and high energy-density foods (Oliver et al., 2000). Overall, it is palatable meals – those that provoke an hedonic reward when eaten- what stressed individuals tend to consume, typically snacks and chocolate, as energy demand is high and time available for eating is short (Wurtman, 1988).

However, some research argues that under certain conditions people do not change their intake under stress, neither in quantity nor in type (Oliver et al., 2000; Oliver and Wardle, 1999).

The results in terms of quantity and type of food are highly variable depending on the type of study. Outside the scope of the laboratory, it can be difficult to obtain reliable information about food intake. Appealing to the individual's memory is not enough when it is necessary to know the exact amount and variation in the composition of food consumed, making it difficult to detect the effect of stress on food intake (Brownell, 1994). Given the above, we make a laboratory experiment. Meanwhile, most of the cases used questionnaires (Oliver and Wardle, 1999; Wallis and Hetherington, 2009; Kandiah et al., 2006; Liu et al., 2007; Ng and Jeffery, 2003; Wardle et al., 2000).

Men and women tend to behave differently in relation to food. Under stress, females tend to eat more junk food, while males do not (Zellner et al., 2006; Zellner et al., 2007). Females who overeat during stressful situations may do so as a result of an eating style characterized by the inability to maintain control over self-imposed rules, which is typical in the case of restrained and emotional eaters. Stress triggers disinhibition, threatening self-image. Problems in eating behavior in males and females should be approached in different ways since associations between intake during stress and other eating variables differ substantially (Weinstein et al., 1997).

Gender differences also arise when studying different kind of stressors. Competition is well known as an important stressor by imposing

uncontrollability and social-evaluative threat (Dickerson and Kemeny, 2004). Depending on others' performance provides uncertainty while it is also a threat for self-esteem (Buckert et al., 2014). Gneezy et al. (2003) find that women perform worse than men in competitive environments.

Although competition has been a central issue in economics, its effects on people's health had not been studied. So, the aim of laboratory study reported here is to analyze the intake of two types of sweet snacks by women using competitive environments as stressors.

Methods

A total of 87 female students participated in the experiment over 13 sessions in which they had to solve several tasks. To create non-competitive and competitive sessions we manipulated the payment scheme (piece-rate under non-competition and tournament payment scheme under competition). Because the effect of competition might be different under a single-sex or mixed-sex environment, we organized women's sessions and sessions where both men and women were present. Participants were randomly assigned to the sessions.

Two bowls with food (raisins and chocolate candies) and a bottle of water were available to each subject. We pre-set the time of the sessions to guarantee that exposure time to food was identical for all subjects. Eating (as a response to stress) may be observed during the stressful situation or after its end. Thus, we designed a session divided into three parts seeking to produce the highest stress level in the first one and the lowest level in the third one. The exposure time was around 30 minutes, with a minimum value of 27 and a maximum value of 35.

Participants

The subjects were recruited through posters and verbal information in regular class time at the Universidad de la República (Uruguay). Those interested in participating were asked to fill an on-line questionnaire that covered several topics (see Annex 1). Among them, we asked some questions about health status in order to recruit individuals that declared not to have diabetes or high cholesterol, that is, who did not have health-related eating restrictions.

Previous experiments indicate that under a competitive environment, the performance of women is higher when they compete with women than men (Gneezy et al., 2003). Besides, women are less prone than men to enter in competition (Gneezy et al., 2009; Niederle and Vesterlund, 2007). These findings led us to think that the stress level provoked by competition would be deeper if women competed with men than only women. Thus, though we were

interested only in the women's behavior, we recruited men with the purpose of creating a mixed-sex environment in some sessions.

The participants numbered 87 women and 40 men. Most of them were undergraduate students of economics, political science, sociology and social work. Women were randomly assigned to different environments: 23 participated in a single-sex non-competitive session, 24 in a mixed-sex non-competitive session, 21 in a single-sex competitive session and 19 in a mixed-sex competitive session.

Tasks

As already mentioned, Part I was dedicated to time scheduled tasks. The subjects were asked to do 5 types of tasks that appeal to different abilities. All subjects did the same tasks in the same order.

In the first task (W), each subject had a blank sheet of paper in which at the top the letters A C O P I R were printed. She had one minute to write words made from (only) at least three of those letters.

In the second task (S), the subject had a sheet of paper with 37 rows. A series of numbers and/or letters that followed a logical order was displayed in each row. She had to write the number or letter that followed the printed series. It was not required to follow the order of the rows (series could be skipped). This task lasted two minutes

In the third task (M) the subject had one minute to solve mazes that were presented in printed sheets (12 mazes).

The fourth task (T) was presented in a table of four rows and six columns. The header rows were the letters A E F I. The header columns were: cities, rivers, mammals, flowers/plants, countries and fruits. The subject had a minute to write in the cells a word that started with the header row letter and belonged to the set of elements indicated in the header column.

The last task (O) consisted on solving basic mathematical operations in two minutes. The sheet displayed 37 rows of operations. It was not required to follow a particular order.

We informed the subjects that, according to the pilot test prior to the experiment, it was not feasible that they complete the tasks in the pre-set time.

In Part II we asked the participant to guess her relative position in each task within a group of 4 subjects. Under the non-competitive environment we created the groups just before the beginning of the second part. Under the competitive environment the groups were created at the beginning of the session. In the mixed-sex sessions, the groups were formed by two men and two women.

In Part III we asked the subject to choose ten times between two lotteries.

Treatments and payments

We created a non-competitive and a competitive environment by manipulating the payment schemes of Part I.

Under the non-competitive environment, we used a piece rate payment, that is, the participant was paid according to the number of hits. The piece rate was fixed on the base of the performance obtained in a previous pilot test. As the number of hits in each task was different, the rate of each task was different too.²

Under the competitive environment, we implemented a tournament. We created groups of four subjects and only the winner (the subject with most hits) received a payment. The rate of each hit was calculated on the basis that the expected spending on the group was similar under both environments.³

The rates were informed at the beginning of the session. We also informed them that only one task, randomly chosen, was paid. Participants were also paid for a randomly chosen guess of Part II and a randomly chosen lottery of Part III. The participants under tournament were paid in addition a showing-up sum of 200 Uruguayan pesos to avoid that some subjects received no payment. They were informed about this payment only at the end of the session in order to not discourage effort.

On average, the total payment was 423 Uruguayan pesos (21 American dollars).

Food

On the table in front of each subject, there was a bottle of water and two bowls containing chocolate candies (50 g) and raisins (50 g). The food selection was based on the findings by Zellner et al. (2006, 2007) who performed a test that indicated that, being both popular snacks, raisins were considered healthier than chocolate candies.

In Table 1 we present the nutritional values that are reported in the packages of the chocolate candies and raisins offered to the participants. As shown in the column “calories”, chocolate candies are more energy-dense than raisins. They also have more fat but both have similar amount of carbohydrates.

² The rates (in Uruguayan pesos) for each task were the following: W, 30; S, 15; M, 35; T, 35; O, 15.

³ As in the pilot test the performance was better under tournament than piece rate system, the tournament rates were less than four times the piece rates. In Uruguayan pesos, for each task the rates were the following: W, 65; S, 45; M, 100; T, 90; O, 40.

Table 1. Nutritional information of the food offered to the participants

	Calories (kcal)	Fat (g)	Carbohydrates (g)
Chocolate candies (50 g)	234.0	8.4	38.0
Raisin (50 g)	156.7	0.0	38.3

The bowls were weighed before and after the session. We used non-dischargeable bowls for our control and to avoid subjects taking food intended for other persons. All the bowls were available after the sessions.

Implementation

The room where the experiment took place had tables at the sides of a corridor where the subjects were randomly seated upon their arrival. In the mixed-sex sessions, we arranged alternating rows of women and men. The two first rows were close to each other and a little further away from the third, which was close to the fourth, etc. This disposition facilitated the formation of groups of four subjects. In the mixed-sex sessions, it also facilitated the formation of groups of two men and two women.

At the beginning of the session we distributed sheets with the instructions of the first part of the experiment (5 tasks with exercises) that were read aloud. In the second paragraph, the subjects were thanked for their participation and were offered to snack and drink. At this moment, two bowls and one bottle of water were put on each table.

The time measuring of food exposure began at this moment. On the base of a pilot test we expected the experiment to last 30 minutes from that point. The description that follows shows that we took actions to ensure that all subjects had the same time exposure to food and that each part (which provoked different level of stress) lasted the same amount of time in all sessions. However, subjects may (and some did) put all the desired food in their mouths or palms of the hands just before leaving the room.

The instructions of Part I contained an explanation of the five tasks and the scheme of payment and rates. In the competitive environment sessions, the groups were formed and the subjects were asked to look at their competitors in order to make competition salient. As the tasks to solve were well-known board-games, doubts were few in all sessions. Thus, as we expected, the time spent on reading the instruction was similar in the pilot test and in all the sessions.

Once this set of instructions was read, Part I began. A pre-recorded tape of bell sounds was used to indicate the start and end of each task. No questions were allowed once the tape was played. To do each task, the subject had a booklet (a sheet of paper folded in two). The front page reminded the general rules of the task and the rate. The task itself (the letters to form words, the mathematical operations to solve, etc.) was visible once the booklet was opened. Table 2 reports the recorded time taken in these tasks.

Table 2. Timed intervals of the sessions

Beginning of the interval	Actions during the interval	Elapsed time until the next interval
Provision of food and water	Instructions were read	6 minutes
Bell 1	Booklet W was distributed	½ minute
Bell 2	Participants did task W	1 minute
Bell 3	Booklet S was distributed	½ minute
Bell 4	Participants did task S	2 minutes
Bell 5	Booklet M was distributed	½ minute
Bell 6	Participants did task M	1 minute
Bell 7	Booklet T was distributed	½ minute
Bell 8	Participants did task T	1 minute
Bell 9	Booklet O was distributed	½ minute
Bell 11	Participants did task O	2 minutes
Bell 12	The tape is turned off	½ minute
Part 2	Instructions were read and participants did the tasks	4 minutes
Part 3	Instructions were read and participants did the tasks	10 minutes
End	Participants went to another room	-.-

After Part 1, the subjects received the instructions of Part 2 and did the required task. In the case of non-competitive environment, the groups were formed when reading the instructions of Part 2 following the same rules as in the competitive environment. Finally, subjects did Part 3. In both parts, instructions were read aloud and questions were allowed. The expected time of each part is reported in Table 2.

At the end of the experiment, the subjects were told to go to another room to draw the tasks to be paid. We did a draw for each subject. The payments were done some days after the experiment because we needed time to count the hits of each subject.

Data analysis

We aim to analyze the difference of intake due to competition. The strategy consists of comparing consumption (measured in grams, calories, fat and carbohydrates) between the group of participants paid by piece rate and by tournament.

We compare mean values using mean tests of independent samples and we perform an estimation in which the dependent variable is alternatively the consumption of raisin, chocolate and total food. The explanatory variables are: a) “tournament” that takes a value of 0 under piece rate payment and 1 under tournament; b) “mixed-sex” that takes a value of 1 under mixed-sex environment and 0 under single-sex environment; c) an interactive value of “tournament” and “mixed-sex”. We estimate this effect using OLS. Thus, the estimated coefficient associated with the variable “tournament” is interpreted

as the average change of consumption due to being submitted to a competitive environment.

We also compare the overall distribution and perform the Kolmogorov-Smirnov test. To assess the effect at different positions of the distribution of consumption (percentiles 25, 40, 50, 60 and 75) we estimate quantile regressions. The estimated coefficient obtained with a quantile regression on percentile q is the effect of competition in of the intake distribution at percentile q .

Results

Average results

In Table 3 we present the average consumption under the two scenarios. In all sessions, participants on average ate more grams of chocolate than raisins. The same pattern was found under the piece rate payment and under tournament. The independent-samples mean-tests indicate that these differences are significant ($p=0$ in all tests).

Table 3. Average consumption (standard errors in italics)

	Grams	Calories	Fat	Carbohydrates
All sessions				
Chocolate	13.8	64.7	2.3	10.5
	<i>1.6</i>	<i>7.6</i>	<i>0.3</i>	<i>1.2</i>
Raisins	4.0	12.7	0.0	3.1
	<i>1.0</i>	<i>3.1</i>	<i>0.0</i>	<i>0.8</i>
Total	17.9	77.3	2.3	13.6
	<i>2.0</i>	<i>8.7</i>	<i>0.3</i>	<i>1.6</i>
Piece rate				
Chocolate	11.8	55.2	2.0	9.0
	<i>2.1</i>	<i>9.9</i>	<i>0.4</i>	<i>1.6</i>
Raisins	3.1	9.7	0.0	2.4
	<i>1.1</i>	<i>3.3</i>	<i>0.0</i>	<i>0.8</i>
Total	14.9	64.8	2.0	11.3
	<i>2.7</i>	<i>11.5</i>	<i>0.4</i>	<i>2.1</i>
Tournament				
Chocolate	16.2	75.8	2.7	12.3
	<i>2.5</i>	<i>11.5</i>	<i>0.4</i>	<i>1.9</i>
Raisins	5.2	16.2	0.0	4.0
	<i>1.8</i>	<i>5.5</i>	<i>0.0</i>	<i>1.3</i>
Total	21.4	92.0	2.7	16.3
	<i>3.1</i>	<i>12.9</i>	<i>0.4</i>	<i>2.3</i>

Overall intake was lower under piece rate payment than in the tournament. This result is the same for all the consumption measures

considered. Besides, when considering the two different types of food separately, the same pattern is found. We conducted independent-samples mean-tests and we find out that, regardless of the measure, these differences were not significant. Thus, based on the average values, we cannot conclude that competition increases the intake.

Distribution functions

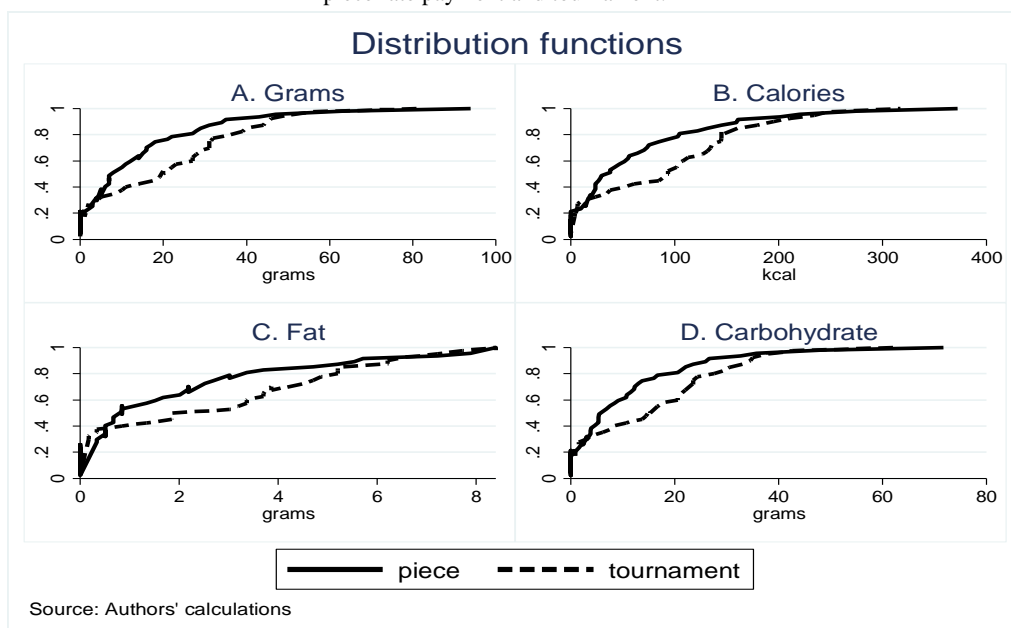
To illustrate the overall distribution of consumption under the piece rate payment and the tournament, we compute the cumulative distribution function (CDF) of grams, calories, fat and carbohydrates (see Figure 1).

The CDF for piece rate and tournament overlap at the lowest percentiles (value 0). Indeed 16 subjects did not eat anything (10 under piece rate and 6 under tournament).

The shapes of the CDF for piece rate and tournament are different between percentiles 40 and 80. In terms of grams and carbohydrates, the comparison is unambiguous: the CDF for piece rate lies over the CDF for tournament, suggesting that competition is associated with an increase of consumption. In terms of calories and fat, the CDFs intersect between percentiles 20 to 40 which do not allow us to extract an unambiguous ranking.

We calculated the Kolmogorov-Smirnov test to find out the statistical significance of different shapes. We conclude that the piece rate payment group contains smaller values than the tournament group in terms of grams ($p=0.033$), calories ($p=0.033$), fat ($p=0.082$) and carbohydrates ($p=0.033$).

Figure 1. Cumulative distribution function of consumed grams, calories, fat and carbohydrates under piece rate payment and tournament.



In sum, the CDFs indicate that in the tournament scenario subjects tended to have a higher intake (measured in grams, calories, fat and carbohydrate) than in the piece rate scenario. According to the graphics this effect is stronger around the median of the distribution.

Estimated effects of the tournament

In Table 4 we present the results of the estimated effects of the tournament environment. We find a positive and significant average effect (of around 10 grams) on the overall consumed grams. It is also positive and significant situated between percentiles 40 and 60; at the median, the tournament provoked an increase of intake equivalent to 12 grams. We also report the effect of tournament on raisins and chocolate separately. We obtain a significant increase of chocolate consumption for subjects in the 50th and 60th percentiles whereas there is no effect on the consumption of raisins. These results suggest that the growth of consumed grams around the median observed in Figure 1 is led by the increase of chocolate intake.

We expect that calories, fat and carbohydrate are higher under tournament than piece rate payment because competition causes total intake to grow. The effect on calories and fat would be amplified by the fact that the growth of intake stems mostly by the rise of chocolate (and not raisin) consumption. As reported in Table 4, on average tournament increases calories (around 40 kcal) and carbohydrates (7 grams) but not fat. We find positive effects on percentiles 40 to 60 of calories and carbohydrate, and on percentiles 50 and 60 of fat.

Table 4. Estimated effect of tournament on consumed grams, calories, fat and carbohydrates (standard deviations in parenthesis)

Position	Grams			Calories	Fat	Carbohydrates
	Total	Raisins	Chocolate			
Mean	9.745* (5.460)	3.863 (2.944)	5.882 (4.231)	39.63* (22.91)	0.988 (0.609)	7.432* (4.765)
25	5 (6.267)	0 (0)	-1 (3.623)	20.39 (29.04)	-0.168 (0.973)	3.800 (5.423)
40	12* (7.101)	0 (0.799)	7 (5.795)	59.25* (33.12)	1.176 (1.188)	9.093* (5.054)
50	12* (6.618)	0 (1.882)	14* (7.070)	59.49** (29.91)	2.352* (1.048)	9.120* (4.743)
60	15** (6.239)	1 (2.299)	12* (6.239)	71.59*** (21.52)	2.016* (1.391)	11.51** (6.580)
75	14 (8.610)	4 (4.963)	10 (8.278)	59.85 (37.68)	1.680 (0.711)	10.71 (4.162)

Notes:

*** p<0.01, ** p<0.05, * p<0.1

We report the estimated coefficients of the “tournament” variable in the OLS and quantiles regressions and their standard deviation (in parenthesis). In the estimation we also include the following covariates: a dummy variable that takes a value of 1 under mixed-sex environment and 0 under single-sex environment; an interactive value of the dummies that capture mixed-sex and tournament environment

Conclusion

We did an experiment in which the subjects were paid according to their performance in different type of exercises. Half of them participated in non-competitive sessions and the other half in competitive sessions. We created the competitive environment by manipulating the payment system: a piece rate payment for hit and a tournament. All the participants were offered chocolate candies and raisins.

The obtained results are in line with the findings of most of the studies of the stress effect on food consumption and food choice. Indeed, the intake of participants subjected to competition was higher around the median as a result of an increase of chocolate consumption. Thus, competition had a positive effect on calories, fat and carbohydrates not only because of the increase of consumption but also because of the characteristics of the chosen food.

This result supports the view that people subjected to competition tend to overeat and to choose palatable food. We interpret that competition acts as a stressor. In stressing situations, as palatability is a marker of energetic food, people tend to choose this type of meal in order to recover energy.

Several mechanisms may link competition and stress. In a study of the gender difference in the entry to competition, Niederle and Versterlund (2007) review the main reasons that make people to avoid competition. These reasons are a source of the stress provoked by competition. Aspects like displeasure for competition and lack of self-confidence would affect the level of stress of an individual forced to compete. Besides, aversion to risk affects the preferences for the payment system so a tournament would provoke an increase of stress level of risk-averse individuals. Finally, aversion to feedback makes competition stressing. Being involved in a competitive environment implies that the individual would eventually be aware of his negative relative performance. Thus, competition might be threatening individual's ego. These reasons might be present in our experiment since previous research indicates that all these characteristics are more frequent among women than men.

This research contributes to the strand of the literature that focuses on factors that affect the eating behavior which influences health. In the modern world in which competition is a key factor in the organization of society, our experiment is especially relevant as we find that competition triggers overeating and consumption of high energy and fat food. Being aware of this result is particularly important in a context in which there is a wide variety of palatable and cheap food. These factors contribute to imposing conditions for the spread of eating- related health problems.

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Annex 1. Questionnaire

Welcome. This is the questionnaire for those enrolled in the experiment.
Thanks for filling it.

* Required

E-mail *

E-mail *

(repeat)

Gender *

- M
- F

Do you like animals? *

- Yes
- No

Do you suffer from any of these diseases? *

- Diabetes
- Cholesterol
- Hypertension
- Celiac disease
- Non

Income level *

Put yourself, according to your household income, in the next scale from 1 to 10, where 1 represents the poorest person and 10 the richer.

1 2 3 4 5 6 7 8 9 10

Extreme
poor

Extreme
rich

Do you have children?

Age *

To take care of your body you: *

- Do anything

- Do exercise
- Diet

Indicate your main faculty

Please mark all the options that are suitable for you to attend the session.

- Monday 14 to 15
- Monday 15 to 16
- Wednesday 14 to 15
- Wednesday 15 to 16
- Friday 14 to 15
- Friday 15 to 16

To end, please press "submit".

The Relationship Between Macroeconomic Factors and Mortgage Market Growth in Kenya

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Abstract

The mortgage market is the market for financing real estate assets. Mortgage financing is vital in financing the property market. This study seeks to determine the relationship between selected macro factors and mortgage market growth in Kenya. The study is based on the arbitrage pricing theory, capital assets pricing theory, title theory and lien theory of mortgages. The study utilizes descriptive research design and quarterly secondary data for a period of 10 years from 2007 to 2016. Analysis of data is carried out through descriptive and inferential statistical techniques. Inferential statistics such as linear correlations and multiple linear regressions are used to draw conclusions and make predictions on the relationship between the independent variables and the dependent variable. The research establishes that there is a positive and significant relationship between interest rates, inflation and the mortgage market growth. The research also finds that there is insignificant relationship between exchange rates, gross domestic product and the mortgage market growth. The research concludes that the mortgage market growth in Kenya is influenced by interest rates and inflation. The research recommends that the central bank of Kenya should ensure that interest rates are stable and inflation levels are low to ensure that they do not affect the mortgage market growth.

Keywords: Macro-economic Factors, Mortgage Market, Growth

Introduction

Mortgage is the security for the performance of an act. It involves a mortgager, the performer of the act, and the mortgagee - the holder of the

mortgage (Schmudde, 2004). However, the word mortgage is often used to mean mortgage loan. Mortgage loan refers to a loan used for the purposes of raising the required funds to purchase real estate or to alternatively use an existing property as security for a commercial loan for whatever purpose (Dorah, 2012).

The arbitrage pricing theory (APT) proposes that the economy experiences various forms of risks which cannot be removed through diversification of assets. The risks emanate from economic variables such as inflation, exchange rate fluctuations, interest rates fluctuations and changes in aggregate output (Iqbal and Haider, 2005). According to the APT, microeconomic factors affects all sectors in the economy hence they can also effect the mortgage market growth. The capital assets pricing model (CAPM) indicates that the assets returns are functions of the market beta hence any economic activity is affected by the market risk and not several macroeconomic factors (Isenmila & Erah, 2012).

In Kenya, there are various institutions which provide mortgage financing including commercial banks, pension funds, trusts and other real estate investments. Commercial banks, however, dominate mortgage lending in Kenya (Ariemba, Mboya & Kamau, 2015). However, despite having the advanced mortgage market in the East Africa region, the country cannot meet the excess demand for housing financing in the country due to the ever increasing rural to urban migration in the country (Kariuki, 2015). Indeed, Aghionet (2011) observes that economic factors are concerned with the economy as a whole and could affect an entire nation or the globe. These include the macroeconomic factors which ranges from national output, income, government budget balances, finance among other factors (Ariemba et al, 2015). This study will consider four macroeconomic factors; *interest rates, exchange rates, economic (GDP) growth and inflation*.

Interest rate is the amount charged by the financing institutions for the amount advanced (Boamah, 2010). High interest rates lead to high prices in the properties market and could scare away buyers' hence low demand for funding. High interest rates make renting relatively more attractive to buying. This is made even worse if there are other competitors providing the services in the region or the country (Kariuki, 2015). High interest rates have also been associated with high repayment terms of the loans to high level that was unattained to the majority of potential homeowners. The unstable interest and inflation rates have impacted significantly on the mortgage growth. High interest rates are known to cause huge number of Non-Performing Loans (NPLs) as the borrowers become unable to make payments (Boamah, 2010). **Exchange rate** can be defined rate of exchange as the prevailing unit price of another country currency against domestic currency. According to Reid and Joshua (2004), exchange rate is the value of the one unit of foreign currency

against local currency. Omagwa (2005) posit that exchange rates like any other commodity are explained by the law of demand and supply. Supply of currency is explained by changes in fiscal policies whereas currency demand is influenced by a wide range of aspects like the interest rates. Murthy and Sree (2003) argued that exchange rate enables comparison of prices of commodities quoted in diverse currencies. Exchange is determined by pegging a countries currency to another currency. **Economic growth** creates a legitimate expectation among consumers and investors of continued economic development (Addae-Korankye, 2014). This encourages consumer spending and business investment which in turn increases the demand on the money supply moving through the economy. Periods of economic growth have some important features that influence the mortgage market (Ariemba et al, 2015). GDP for Kenya is measured by the annual economic growth rate (Isenmila & Erah, 2012). **Inflation** is the continued rise in the prices of goods and services. This is caused by availability of so much money in the economy chasing limited resources. Due to high money supply in the economy, it drives the prices of goods and services upwards hence forcing citizens to spend more on commodities hence reducing their earnings especially to those citizens earning less who have high marginal propensity to consume. Inflation was measured by average annual rate of inflation. Average inflation is the arithmetic mean for of the month by month inflation normally reported by KNBS for each of the twelve months forming one year (Addae-Korankye, 2014). High inflation leads to high interest rates as lenders seek to compensate loss of purchasing power of their money (Ariemba et al, 2015).

The number of mortgage facilities service providers is key in the determination of the mortgage market growth. Amongst the critical service providers of the mortgage services are the building societies. The building societies are key to the issuance of mortgage loans and facilities in the country. They often hold the largest market share in the mortgage market in diverse countries around the world (Scanlon & Whitehead, 2011). In the building society method, the building societies mobilize funds from their members for the purposes of mortgage lending. This is line with the loanable theory. The theory brings together three players in an economy that is the providers of funds labeled as savers, the utilizers of these funds (loanable funds) labeled as borrowers and the institutions or systems that pool funds from savers and lends it to borrowers (Mutisya, 2016). The savers supply funds for lending through diverse actions such buying of bonds, opening of fixed accounts in commercial banks and depositing of funds in a financial institution for later use. The borrowers then consume these funds that have been deposited in terms of loans.

There are diverse ways in which macro factors influence mortgage growth. The ability to raise long term funds is a critical component in

determining the amounts of funds available for lending (Messai, 2013). In cases where a majority of the corporate real estate only had access to short term loans which made the commercial sense of long term housing projects difficult to be financially sustainable (Nelson & Asamoah, 2014). The real estate developers often face challenges to sell their products in the required timelines to make profits. The process of real estate development takes a long period through different stages including land acquisition, development stage, construction, and leasing or sale of the property (Messai, 2013). This means that real estate developers have to wait for a longer period to get return on their investment.

The availability of the loanable funds impacts on the mortgage growth through diverse ways. According to the loanable funds theory, the amount of interest rate is determined through the supply and demand for loanable funds that is available in the credit market (Scanlon & Whitehead, 2011). Low supply of loanable funds leads to high interest rates and vice versa. The theory states that the level of interest rates determines the appetite for loanable funds amongst borrowers. High interest rates act to limit the capacity of borrowers to take up the mortgage facility hence restraining mortgage market growth.

The mortgage industry in Kenya started with the establishment of the Housing Finance on the 18th of November, 1965. The mortgage industry has over the years been dominated by the Housing Finance, which continues to control over 20% of the mortgage industry in Kenya. Changes in the Banking Act in 2002 enabled commercial banks to offer loans that were more than five years thus enabling them to get into the mortgage business. As per Central Bank of Kenya Statistics (2016), a total of 34 commercial banks are offering mortgage services, with the Kenya Commercial Bank being the largest lender. Central Bank of Kenya, (2016) noted that the mortgage loan assets stood at 203.3 billion as of December, of 2015. The mortgage loan book of the 2015 financial year had an improvement of 23% mortgage loan book sizes (Central Bank of Kenya, 2016). However, despite the incremental growth in mortgage industry the Central Bank of Kenya noted that the growth was not adequate to cater for the market and diverse measures needed to be taken to stimulate growth in the sector (Central Bank of Kenya, 2016). The mortgage industry is also affected by the Central Bank Rate which offers the benchmark for the mortgage rate and which are positively correlated with the interest rates offered by banks (Mohamed, 2012). The central bank of Kenya determines the liquidity in the economy through adjusting the Central Bank Rate. To reduce the liquidity in the economy, the central bank increases the CBK rate which results in an increase in the interest rates offered by the commercial banks in pricing of the loan products including mortgages. This in turn, increases the costs of borrowing for the borrowers resulting into slow mortgage uptake. In

this context, Ngigi (2015) noted that in 2011 the CBK was forced to sharply increase the Central Bank Rate in order to tame the high inflation.

The income levels and nature of employment contract are key determinant of mortgage uptake. The mortgages are long-term loans which often lock out persons who are employed for short term contracts as the installments for such loans cover long periods. Ngigi (2015) argues that the income levels of the customers determine the amount of loan that they can qualify for as well as the duration of such loans. The economy has an influence on the mortgage growth. According to Messai (2013), the availability of excess money in the economy leads to an increase in money supply and therefore a possibility of inflation. The inflation has a negative consequence on the mortgage terms such as interest rates that vary because of inflation levels.

Research Problem

There are diverse ways in which the macro factors influence mortgage growth. Availability of long term funds for lending is critical to the mortgage growth (Messai, 2013). The availability of loanable funds impacts on the mortgage growth through diverse ways. According to the loanable funds theory, the amount of interest rate is determined through the supply and demand for loanable funds that is available in the credit market. Low supply of loanable funds leads to high interest rates and vice versa. Nelson and Asamoah (2014) indicated that an increase in interest rates on mortgage facilities pushed the repayment terms of the loans to high levels that were unattainable to most potential homeowners. The mortgage loans requirements such as down payment play a significant role in the mortgage market growth. Mortgage industry is often restrained by high required down payment (at least 30 percent of the property value), and high interest rates. This high down payment led to the decline of the mortgage market growth (Green & Wachter 2015).

In Kenya, changes in the Banking Act in 2002 enabled commercial banks to offer loans that were more than five years thus enabling them to get into the mortgage business. As per Central Bank of Kenya Statistics (2016), a total of 34 commercial banks are offering mortgage services, with the Kenya Commercial Bank being the largest Lender. The Central Bank of Kenya noted that mortgage growth was not adequate to cater for the market and diverse measures needed to be taken to stimulate growth in the sector (Central Bank of Kenya, 2016). The central bank rate affects the interest rates offered by the commercial banks in the loan products including mortgages. The economy also has an influence on the mortgage growth. According to Messai (2013), the availability of excess money in the economy leads to an increase in money supply and therefore a possibility of inflation. The inflation has a negative

consequence on the mortgage terms such as interest rates that vary as a result of inflation levels.

Diverse studies have been undertaken in respect to the factors influencing mortgage uptake. Ellah (2013) undertook a study on the enhancement of economic growth through mortgage financing and capitalization. The study found that economic growth stabilized the inflation rates hence impacting positively on mortgage development. Ijaiya, Lawal, & Osemene (2012) undertook a study on microfinance and mortgage financing in Nigeria. The study found that access to long-term funds was key to development of mortgage industry. Green & Wachter (2015) examined the American Mortgage in historical and international context. The study indicated that the creation of government back bodies such as Federal National Mortgage Association and the Federal Home Loan Mortgage Corporation have gained an increasing role in the mortgage industry but the study focused on historical development of mortgages

In Kenya, Mogaka, Mboya, and Kamau (2015) examined the influence of capital market deepening on mortgage market growth in Kenya. The study found that the pension funds availability was positively correlated with the long-term funds availability and mortgage market growth but the study focused on financial sector deepening and its effect on the mortgage market. Kigomo (2016) examined mortgage rates in Kenya and its implications for homeownership. The study established that mortgage providers should undertake diverse risk management practices. These risk management practices include mortgage insurance, and use of the title as security amongst other aspects. His study however focused on mortgage rates and not the effect of macroeconomic factors on mortgage growth.

The mortgage growth is a critical factor in enabling home and property ownership in Kenya. Access to shelter is a basic human right as outlined in the universal declaration of human rights and Kenya's 2010 constitution. The knowledge on the factors influencing the mortgage growth is critical in enabling Kenyans and the policy decision makers understand on the measures that need be taken to ensure that there are adequate mortgage facilities in a sustainable manner and affordable to the Kenyans. However, majority of the empirical studies have not examined the mortgage growth in the country under the current banking sector operational conditions that involve loan interest capping by the government, preference of lending to the government as opposed to the retail market and reduced profitability of the mortgage service providers. This study therefore seeks to answer the question; what is the relationship between macroeconomic factors and mortgage market growth in Kenya?

Methodology

This study sought to examine the influence of the macro factors on the mortgage growth in Kenya. The study utilized the descriptive research design. The study entailed the use of secondary data. The secondary data was source from various sources. Data on the mortgage growth rate, lending rates and exchange rates was obtained from the central bank of Kenya. Data on inflation rates and gross domestic product growth was obtained from the Kenya national bureau of statistics. The study used quarterly data for a period of 10 years from 2007 to 2016. The multiple linear regression model used to capture the relationship between mortgage market growth rate and the various variables is as follows;

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Where,

Y = Mortgage market growth rate proxied using the Natural log of total mortgages on quarterly basis

X₁= Interest rates proxied using the weighted average quarterly lending rates

X₂ = Exchange rates proxied by the quarterly rate of Kenyan shilling to the US dollar

X₃= Natural log of the Real GDP proxied by the quarterly gross domestic product

X₄ = Inflation proxied by the quarterly consumer price index

β₀ = Constant

β₁, β₂, β₃& β₄= Regression coefficients

ε = regression error

Results and Discussion

The ANOVA results on table 1 shows that the model is significant and a good predictor of the relationship between macroeconomic variables and mortgage market growth. This is indicated by the F statistics value of 87.094 and the p value of 0.00<0.005.

Table 1: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	22.189	4	5.547	87.094	.000 ^b
Residual	2.229	35	.064		
Total	24.419	39			

a. Dependent Variable: Ln Mortgages

b. Predictors: (Constant), CPI, Interest Rates, Exchange rates, Ln GDP

From table 2 the following regression was generated

$$Y = -15.875 + 0.864X_1 + 1.717X_4 + \varepsilon$$

The regression coefficients table indicates that there is a positive and significant relationship between interest rates and the mortgage market

growth. The results also indicate that there is an insignificant positive relationship between exchange rates and mortgage market growth in Kenya. Further, the results show that the relationship between the gross domestic product and the mortgage market growth is positive and insignificant. Finally, the results indicate that the relationship between inflation (CPI) and the mortgage market growth is positive and significant. The variance inflation factors (VIF) are 1.763, 6.399, 7.988 and 1.468 which are all less than 10 thus an indication that there is no multicollinearity.

Regression Coefficients

Table 2: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-15.875	7.766		-2.044	.049		
Interest rates	.864	.423	.139	2.043	.049	.567	1.763
1 Exchange rates	1.009	.731	.178	1.380	.176	.156	6.399
Ln GDP	.896	.713	.181	1.256	.217	.125	7.988
CPI	1.717	.645	.521	2.663	.012	.681	1.468

a. Dependent Variable: Ln Mortgages

The findings of this research revealed a significant and positive relation between interest rate and the mortgage market growth. The means that there is a direct relationship between the rates of interest and the mortgage market growth in Kenya. Similarly, Avery, Brevoort and Canner (2006) found that there is a positive influence of low interest rates and credit growth of mortgage finance loans. Gerlach and Peng (2005) study on interest rates and mortgage credit facilities in Hong Kong found a positive and significant relation between interest rates and growth in long-term mortgage loans. Therefore, high interest rates push the loan repayment amount up. Thus, unstable interest and inflation rates have impacts significantly on the mortgage growth.

The findings of this research revealed a significant and positive relation between inflation and the mortgage market growth. The means that there is a direct relationship between the inflation levels and the mortgage market growth in Kenya. Similarly, Muguchia (2012) found that inflation had positive effect on mortgage financing. Ijaiya, Lawal, and Osemene (2012) revealed that unstable inflation rates make it commercially unattractive to real estate developers.

The findings of this research revealed an insignificant and positive relation between gross domestic product (GDP) and the mortgage market growth. The means that there is an insignificant relationship between the GDP

and the mortgage market growth in Kenya. Ariemba, Mboya, and Kamau, (2015) found that GDP per capita and exchange rates were significant in the model in explaining the variation in mortgage market value. Faida (2013) found that that growth in the economy and the period taken to disburse the mortgage loan impacted on the mortgage growth in Tanzania.

The findings of this research revealed an insignificant and positive relation between exchange rates and the mortgage market growth. The means that there is an insignificant relationship between exchange rates and the mortgage market growth in Kenya. However, Boamah (2011) study on the mortgage market in Ghana found that the major aspect influencing mortgage growth in the country is exchange rate. Boamah (2009) further notes that stability of the currency in a given country leads to a successful mortgage market.

Conclusion and Recommendations

The findings of the research indicate a significant positive relationship between interest rates and the mortgage market growth. The study therefore concludes that there is a direct and significant relationship between the rates of interest and the mortgage market growth in Kenya.

The findings of the research found a positive and significant relationship between inflation and the mortgage market growth. The study therefore concludes that there is a direct and significant relationship between the inflation levels and the mortgage market growth in Kenya.

The research findings also found that there was an insignificant positive relationship between gross domestic product and the mortgage market growth. The research based on this finding concludes that there is an insignificant relationship between the GDP and the mortgage market growth in Kenya.

The research finding also found that there was an insignificant positive relationship between gross domestic product and the mortgage market growth. The research based on this finding concludes that there is an insignificant relationship between exchange rates and the mortgage market growth in Kenya.

The study made the conclusion that there is a direct and significant relationship between the rates of interest and the mortgage market growth in Kenya. The researcher therefore recommends that the central bank of Kenya should ensure that interest rates are stables to ensure that they do not affect the mortgage market growth.

The research also made the conclusion that there is a direct and significant relationship between the inflation levels and the mortgage market growth in Kenya. The researcher thus recommends that the central bank of

Kenya should also come up with strategic policy, mechanisms to ensure that inflation is maintained at the right level.

The research made the conclusion that there is an insignificant relationship between the GDP and the mortgage market growth in Kenya. The researcher however, recommends that the government should ensure that there the economic performance in a country is good since good performance in economic terms influence other macroeconomic variables like inflation and interest rates.

Finally, the study made the conclusion that there is an insignificant relationship between exchange rates and the mortgage market growth in Kenya. The study however recommends that the government and the central bank of Kenya should ensure that currency rates are stable since currency rate fluctuation may have adverse effect on the other macroeconomic variables.

This study considered inflation, interest rates, exchange rates, gross domestic product, and their effect on mortgage market growth. The study recommends an additional research using other macroeconomic variables like money supply, foreign direct investments and the mortgage lending rates.

The study also used specific measures like the CPI for inflation, weighted lending rates to measure interest rate and the real GDP to measure economic growth. The topic can also be assessed using different measure like the GDP deflator as a measure for inflation, treasury bills rates as measure of short term interest rates and the GDP growth rate to measure economic growth. Finally, the study used the basic ordinary least squares method to predict the relationship among the variables of the research. Therefore, the research recommends an additional research using the panel data methodology using either the fixed of random effects method. An additional research can also be carried out using econometric models like the generalized autoregressive conditional heteroskedasticity models.

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Study of the Migratory Return: Analysis to the Condition of the Returned Migrant in the Educational and Labor Reintegration and the Entrepreneurship as an Area of Opportunity

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Abstract

Studies on the educational and labor reintegration of migrants returned to Latin American countries have gained importance due to the economic and social implications of rehabilitation. In this article, the return of the migrant was considered part of the migration process. An exploratory research of publications in different international journals was carried out; when consulting the referenced articles, it was identified that at the time of return the migrant presents and perceives a moral, social, educational and work imbalance. From the deficiencies found in the theoretical lines studied - Educational reinsertion, Labor reintegration - the third theoretical line was included the importance of relating the concept of entrepreneurship as an area of opportunity for returned migrants. The results of the analysis of the studies and theoretical frameworks of international migration, showed great similarities of the phenomenon in different geographical spaces, being an indispensable tool to understand their different forms, evolution and development both in the countries of origin and destination.

Keywords: Returned migrants, Educational insertion, Labor insertion, Entrepreneurship

Introduction

International migration, whether forced or voluntary, is a historical phenomenon that entails multiple reasons of an economic, political, social and cultural nature. Border population movements are common and, in times of peace and outside of climatic catastrophes, they have to do with the demand and supply of productive factors, border control strategies and the modalities of economic integration between the countries involved (Castles, cited in

Delgado and Mañan, 2005). The migratory phenomenon has been of great importance due to its magnitude and permanence (Contreras, 2016).

During the last 15 years, international population movements have undergone significant changes in volume, trends, modalities and socio-demographic characteristics. Return migration is not a new phenomenon, it has traits that distinguish it from the migratory flows of the past; the economic crisis and the implementation of restrictive migration policies are some of the factors that have encouraged return flows in recent years (Ramírez and Aguado, 2013).

This is a moment of great changes in migration policy, not only in the normative terrain (new unilateral rules), but also in the creation of a new bureaucratic-administrative apparatus that has modified the migratory dynamics (Gandini, Lozano and Gaspar, 2015).

From the above, it constitutes a return that incorporates a high dose of vulnerability: these are migrants who have remained for long periods abroad; this vulnerability expresses to a large extent the fear of being deported due to an accumulation of economic, social and political factors (Mestries, 2013).

In this sense, the concern that within the report on Human Development, sustains human progress, by reducing vulnerabilities and building resilience (UNDP, 2014); is that although most countries have made consistent progress in this area, there is still a precarious feeling to the extent that achievements in fundamental aspects of development can be broken very quickly in the face of certain events, such as economic crises and natural disasters (Idem). This situation of vulnerability is the one that faces, to a great extent, the population of the returned migrants in their processes of educational and labor reintegration.

The return must be thought of as a constituent element of the migrant condition, a complex element that contains in itself the process, the desire and the life project of those who undertake the return home: one more element of the migratory cycle (Fabre, 2016).

In this way, the study of the migratory return currently acquires a different aspect and can be recognized as the main manifestation and effect of this new migratory phase (Durand, 2013, Canales, 2012). Until now, specialists have ruled out analyzing with the required force, the causes of and effects on those who return. It is necessary to investigate about the historical, sociological, psychological, economic, and political dimension that this movement brings with it (Fabre, 2016).

The objective of the research is to analyze, from the perspective of the different theorists, the condition of the returned migrant in the educational and labor reintegration and the link that exists between them and entrepreneurship.

Educational reinsertion

Beyond the national and international regulations that guarantee the rights of migrants, it is possible to identify the existence of different types of educational barriers that impede the enjoyment of immigrants' right to education.

The education is one of the main pillars in the economic development of a country, and a relevant factor in the growth projects as migratory support; which can provide security and positive experiences of inclusion of migrants returned to society (Sánchez, 2014). Therefore, if these migrants decide to relocate, they must integrate into this new society where they will find educational and work conditions different from those acquired in their previous place of residence; that's why, it will be necessary to weave new networks and, possibly, face situations of rejection or discrimination (Cobo, 2008).

In the international context, there is overcrowding in institutions, which leads to the return of migrants to the degrees according to the availability of seats. Despite the classification exams, in cases where they do not have their academic record, these immigrants are sometimes assigned to lower levels that do not correspond to their age or knowledge, which influences their self-esteem and motivation. To continue studying since they do not find challenges to overcome (Sánchez, 2014).

International return migration is negatively linked to the educational trajectory of children who participate in this type of mobility. An investigation carried out showed that recent immigrant children in the United States have greater non-attendance and lag than their non-immigrant counterparts, even after taking into account the cultural and social human capital of their families and the context of the place of reception (Vargas, 2015).

Studies conducted regarding Latin American migrants-especially the Peruvian community- indicates that they are visualized based on stereotypes - associated with race, poverty, and delinquency, among others - that operate as a source of discrimination (Tijoux, 2013). In this way, being a migrant's child is considered different from the local, which leads to stigmas when being identified as an *other/ migrant different from us / national /* even in the case of children who have never migrated spatially or who are not foreigners in legal terms (Salas, Kong, Gazmuri, 2017).

About it, the Mexican environment, Pederzini, Riosmena, Masferrer and Molina (cited by Jensen, 2017) explain that return flows have provoked new questions and considerations about opportunities and integration for migrants; concerns about integration have been reversed; the new questions address how Mexican institutions should incorporate migrants.

When evaluating the differences in the risks of absenteeism and school lag, it was found that immigrants born in Mexico had greater disadvantages

than those born in the United States, compared to non-immigrants. This is consistent with previous research that found that birth in the United States is a protective factor for the schooling of adolescents (Giorguli and Gutiérrez, 2011).

Based on the educational welfare approach of the returnees Zúñiga, Hamann (et al., 2013) found results on the school trajectories of these children, integration processes or school exclusion and the formation of transnational identities. His team has carried out about 54,000 surveys in primary and secondary schools in the states of Nuevo León (2004), Zacatecas (2005), Puebla (2009) and Jalisco (2010). They conducted follow-up interviews with selected students and teachers. They found that between two and three percent of the students surveyed were transnational, that is, they had lived at some time in the US; most of them -about two thirds- were born in Mexico (Zúñiga and Hamann, 2009), although these returned migrants continued to identify with their American affiliation (Hamann and Zúñiga, 2011). Returned students said they felt out of place in Mexican schools (Zúñiga, Hamann and Sánchez, 2008), and had to struggle with the formation of their identity in a new environment (Zúñiga and Hamann, 2009). They reported difficulties in speaking Spanish and uncertainty about their future in relation to work and place of residence (Hamann, Zúñiga and Sánchez, 2010).

In Mexico, research highlights psychosocial factors that are experienced in migration and return as well as the school processes of the children of those who leave the country; they propose to problematize the lack of research and documentation on the return of Mexican migrants in a country that, historically, has had high numbers of population mobility (Ocampo, 2014).

The Mexican school system is designed for students who do not migrate to the United States, who have not been born in that country, who do not have their parents living and working there. These binational children and adolescents, these transnational students, these children separated from their parents by migration do not exist in the teacher training programs, nor in the plans to update the teaching profession, nor in the curricular designs, nor in the content, nor in the narratives, neither in the evaluations, nor in the policy discourse (Zuñiga, 2013).

About it, in the Chilean context during the last 10 years a group of studies has focused on the influences that occur between students, teachers and other members of the educational community regarding migration. For example, the studies by Tijoux (2013) have emphasized the need to have anti-racist education, given the situations of discrimination faced by migrants in school contexts in Chile (Joiko and Vázquez, 2016).

The studies carried out in Chile, regarding migration and school, present two approaches: 1) Public policies regarding the migrant phenomenon,

from the perspective of human rights; resulting in difficulties for the integration of returned students, mainly due to lack of resources, training in education and the absence of guidelines; consequence of a deficit migration law (Berrios and Palou, 2014). 2) The perspective of migrant schoolchildren, their teachers and their families from the concepts of identity and discrimination, especially in childhood. The results of these investigations show processes of change that schools make to create inclusive practices adapting their own integration projects (Salas, Kong, Gazmuri, 2017).

Despite the aforementioned studies, up to now there is not enough evidence on the characteristics, profiles and form in which migrant children and adolescents live their school processes; it turns out to be a complex issue to address, both in terms of reintegration and inclusion.

Labor Reintegration

There are several international studies (Table 1) that contribute to the knowledge of the labor reinsertion of returnees quantitative approaches, based on the use of censuses or household surveys. The development of efficient institutional mechanisms of labor reintegration begins with knowing the labor profile of these migrants (Peña, 2015).

Returnees face additional challenges; they face contexts other than those of their departure, with limited information on the jobs available, with difficulties in checking their work experience abroad and revalidating studies and certifications. At the same time, the social networks of the returnees can not necessarily facilitate their reintegration if the stay abroad was long and run the risk of being stigmatized by the conception of crime associated with deportation (Masferrer, Sánchez, Rodríguez, 2017).

Table 1 Contributions of authors who have studied related to the returned migrant and labor reintegration

Author	Variables and / or contributions
Koolhaas, 2016	The differences in the unemployment tendency of the returnees are located according to the residence time in Uruguay. Finding that, the shorter the time of residence in the country, the greater the propensity to be unemployed. The highest level of education attained is another attribute that affects the access to employment of Uruguayan returnees with respect to non-migrants. According to the results of the logistic models, the disadvantaged situation of the returnees compared to the people without migratory experience seems to be accentuated as the educational level of the individuals increases.
Montoya y González, 2015	It has analyzed the social, political, economic and labor character that will be plated to the returnees for their reinsertion and in which way they will take advantage of the labor skills that they acquired during their stay in the United States or the social benefits that the migratory experience can bring.

Rivera, 2015	He studied the effects on the probability of getting a job in the labor market; it was explored if the accumulated human capital has a relevant role in the process of labor reintegration and perception of the returnee and those who receive it. This research offered evidence that the experience of living in a place different from the place of origin, and contact with other people with different cultural contexts, are factors that contribute to the positioning of returnees in the labor market.
Rivera, 2013	In the Mexican environment, the accumulated human capital is tested by observing the role it plays in the process of labor reintegration.
Anguiano, Cruz y Garbey 2013	The successful labor reinsertion of returning migrants from the United States was emphasized in that it will depend on the human capital and the monetary resources acquired, as well as on the employment and investment opportunities existing in the communities of origin in Mexico and on the imagination and inventiveness of migrants.

Source: own elaboration, various sources; 2017

Entrepreneurship of Migrants

With the above, it is attributed that returned migrants find it difficult to find stable and remunerative jobs, because half of those who manage to get work on their return -70% of the total- do so in the informal sector and earn up to a minimum wage, and of these, 80% do not have social security (Mestries, 2013).

It is necessary to understand the concept of entrepreneurship (Table 2) in order to analyze it from an economic and social point of view, and then, later, to understand it as an area of opportunity in the educational and labor reintegration of returned migrants.

Table 2 Some definitions of entrepreneurship

Author	Definition
Pontón y Márquez, 2016, P.4	It is a social perception of success, is determined by perseverance and the use of opportunities presented by the society that surrounds the individual. It consists of relating the entrepreneur with the concepts of innovation, development, change, motivation, among others; It is a necessity for Millennials, they see it related from the base of the entrepreneur spirit, which is related to the attributes of the person.
Serrano, Pérez, Palma, López, 2016, P.13	From a qualitative point of view, it can be said that in entrepreneurship a highly diversified field is observed, with a wide variety of topics that are being analyzed, which indicates an advance in the process of consolidating entrepreneurship as a scientific discipline.
Druker y Steveson; citado en Bucardo,	It is the search for an opportunity, leaving aside the resources that are available; it is not a purely intuitive behavior, of character, it has a theoretical, conceptual basis; economic and social basis, to do something different. It is the ability of

Saavedra y Camarena, 2015, P.3	entrepreneurs not only to take advantage of opportunities, but also to face the challenges entailed by the lack of resources to carry them out.
García, 2015, P.9	Formal and legal process that is carried out by young subjects, oriented to satisfy a specific need in the market, contributing with this to strengthen the labor market, of goods, techniques and / or services, by taking advantage of the structural opportunities that exist.
García, Deniz, Cuellar, 2015, P.25	Entrepreneurship can be analyzed from the angle of the individual, and according to their attitude, intention and / or entrepreneurial behavior, inside or outside the company, but also referred to the performance of the whole company.
Messina y Hochsztain, 2015,P.2	Entrepreneurship is considered to be an increasingly important factor in contributing to economic development, the generation of jobs, social inclusion, poverty reduction and the development of innovation.
Nicolaou y Shane, 2014,P.1	Entrepreneurship represents a social phenomenon that has tried to be explained from the perspective of Biology or Neuroscience, since Neuroscience would complement other aspects of entrepreneurship. For example, neuroscience would complement genetic research in entrepreneurship, among others.
Newland y Tanaka, 2010; citado en Tovar y Victoria 2013, P.2	It contributes to the development of countries of origin, stimulates innovation, encourages the creation of small and medium-sized enterprises and generates employment, as well as creating social capital across borders.
Rodríguez, 2009,P.3-4	It is derived from the French term entrepreneur, which means entrepreneur, the term has evolved and characterizes the person in a state of permanent innovation, highly motivated and committed to a task, which reports planning and execution characteristics, prone to risk. It appears as a result of the ability to persist in the game of being an entrepreneur.
Shumpeter,1978; citado en Trujillo y Guzmán, 2008, P.9	Entrepreneurship is related to the Individual capable of breaking the economic equilibrium through innovation in a radical way and to focus it towards a world dominated by large corporations and where the entrepreneur is conditioned to industrial change driven by incremental innovation; Innovation is the raison of being entrepreneurship.

Source: own elaboration, various sources; 2017

There is evidence that shows that the practice of entrepreneurship is a strategy to face the difficulties of integration into the labor market of the country of return. The most optimistic views interpret that returnees are expected to be entrepreneurs and that independent work prevails, reflecting the success of a migratory experience in which human capital and savings were accumulated after years of residence abroad (Whaba and Zenou, 2012).

The entrepreneurial attitude, as a cornerstone of strategic flexibility, can be considered a key factor for the development of an entrepreneur: his

skills, knowledge, skills, experience and values are triggering agents of the business attitude that is forged at the beginning and during the development; likewise, this attitude is an initiative behavior to promote the constant development of creative ideas and generate improvements in their environment (Rodríguez, Pico, Méndez, 2013).

Entrepreneurship linked with educational and labor reintegration of returned migrants

With respect to the return-entrepreneurship relationship (Table 3), the factors that are frequently linked to the particularities of the migratory stay are the accumulated savings, the duration and the acquired work experience (Alarcón and Ordoñez, 2015).

Table 3 Return studies of migrants linked to: educational reinsertion, labor reintegration and entrepreneurship

Author	Variables and / or contributions
Alarcón et al. ,2012, citado en Correa y Tituaña, 2017	They explored the factors related to the decision to carry out projects in Loja (Ecuador) from a survey of returnees, finding that the variables that increase the probability of undertaking after the return are the entrepreneurial experience during the migration and the return for voluntary reasons, as well as having worked abroad in agriculture and hospitality activities.
Espinoza y González, 2016	They presented a qualitative study that aimed to establish the regularities of the return process experienced by migrants, mainly in social interaction in their place of origin, the effect of their migration experience on the accumulation of social capital, and how this change it affects their work activity and empowerment in their social environment. A study was carried out, based on the analysis of 189 interviews with returning migrants from the town of Atencingo, Puebla, Mexico, who migrated to the United States. In this study, 22 interviews considered the most significant were used.
Jáuregui y Recaño ,2014	Return migration can become a strategy to maximize income in the country of origin and take advantage of the accumulated human capital in the country of destination. Therefore, the accumulation of human capital can affect the probability of return. However, the acquired human capital - labor experience and schooling - in the country of destination can become an obstacle for the migrant to successfully insert himself into the labor market of his country of origin upon return.
Mendoza, 2013	Through a multivariate regression analysis, it shows that in Mexico, return migration tends to put pressure on the formal labor market by increasing regional differences in unemployment rates; In addition, it determines that return migration has a positive effect on the growth of GDP per capita, especially from the impact of education levels of return migrants.
Tovar y Paredes, 2013	The relationship between return migration and entrepreneurship can contribute to the development of the countries of origin, stimulate innovation, encourage the creation of small and medium enterprises and generate employment, as well as create

	social capital across borders. Some emitting and receiving countries of development, among them Colombia, Bolivia and Peru, have adopted measures to promote return and facilitate the incorporation of migrants in the local labor market, through programs of employment or support for entrepreneurship; since these countries face problems of capital restrictions.
Medina y Posso, 2011	They studied the relationship of education, qualification for employment and entrepreneurship as a basis for making the decision to return to the place of origin of these Colombian and South American immigrants in the United States. They suggest that, during the migration period, returnees acquire experience and general and specific skills that can contribute to the development of the countries of origin if they are empowered and take advantage of self-employment and entrepreneurship activities.
Montoya, Salas y Soberón, 2011	They emphasize the fact that the returnees: they have maintained the same job they did abroad, they have acquired new skills that allow them to integrate into different labor markets, and have dedicated themselves to their own businesses; that is, migration to the United States of America served as a means of capitalization and business creation.
Démurger y Xu, 2011	In their study Return Migrants in Anhui Province (China), returnees are more likely to be entrepreneurs than non-migrants, and both savings and job change in the country of destination increase this probability.

Source: own elaboration, various sources; 2017

In order to analyze the phenomenon of return migration it is important not to lose sight of the individual factors of each returnee, adding the conditions of each country -origin and recipient-, their support networks and, mainly, how the motive for migration can reach give an account of the situations that will affect the return (Pérez et al., 2013 cited in Cataño 2015).

Methodology

For the present article, an exploratory research was carried out on returned migration, educational reintegration, labor reintegration and entrepreneurship; where the social and economic implications of returning migrants at the time of their arrival were made known; the information collected derives from the analysis of publications in different international journals.

To enter and analyze the information, a categorical matrix was elaborated in which data were assigned such as: name of the journal, author, year and central theme of the publication -What was done, how was it done and what were its results-, in total, 52 articles were analyzed, which are the ones that allow us to give an account of the state of the findings in the period 2012-2017 against migration, especially return.

In relation to the search conditions, it was found that of the total of the articles consulted, 58% were related to North American countries and 34%

corresponding to South American countries (Table 4), this allows to affirm that migration of return and entrepreneurship is a key issue for study, especially for Latin American countries.

Table 4 Total items consulted and segmented by continent

Country	Continent	Contribution by continent
México(29)	North America	0.58
Pennsylvania (1)		
Colombia(8)	South America	0.34
Chile (3)		
Ecuador(2)		
Argentina (1)		
Uruguay (2)		
Perú (1)		
Spain (3)	Europe	0.06
Egypt (1)	África	0.02
China (1)	Asia	0.02
Total Magazines 52		0.1

The review process ends with analysis of the information to eliminate possible errors in the database, that is, documents that did not match the search conditions specified above.

Conclusion

From the review of the referenced literature, it was identified that the processes of readaptation of the migrant in his country of origin directly influence the human and monetary capital acquired during the migratory experience. One of the main conditions that occurred in the migrants returning to their country of origin was the *readjustment or clash of values*, beliefs and perceptions acquired abroad, generating that when returning, the returned migrant lived a process of readaptation of said values. The next condition found was that the process of readaptation is easier for returned migrants as their acquired experiences and the use of their knowledge obtained in the destination country were useful and applied in their daily life in the country of origin

The publications about return migration have focused on quantifying the phenomenon, describing it and achieving a conceptualization about the types and ways of returning; nevertheless, it is necessary to begin to deepen in topics such as the migratory experience seen from the experiences and insertion of the migrant to educational and work contexts; the return policies as guarantors for the insertion in the country of origin and entrepreneurship as

a means of insertion into the working life of those who have returned with a qualified experience.

Finally, the return of the migrant has implications in all areas of society. The realization of this article focused on the educational and labor context and how this, when taken advantage of and linked to entrepreneurship, can be considered, first, as an independence in the economic sustenance and secondly as engines of development in their areas of origin; However, this does not guarantee business success, for this it is necessary to have an adequate economic, social, political and institutional environment and that the returned migrant has constant support and training at all times, so that their enterprises can remain in business. Over time; The conditions for returning vary in each country in accordance with migratory policies and migrant quality; it is required then, more investigations are carried out that deepen in the subject.

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Financial Innovations Risk, Financial Distress and Firms Value: A Critical Review of Literature

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Abstract

Throughout history, society has always sought for ways and means of responding to life challenges and opportunities. Several scholars support the need for innovation for a firm to remain a good performer during its existence, though the level of risks associated with this kind of undertaking has not received the coveted attention. With the use of financial innovations companies can safely utilize current or go for more risky and up to date technologies that can have a drastic and positive impact on their ventures. Additionally, financial innovations have had a tremendous impact in enriching finance and enhancing the economic prosperity of many firms. However, this financial innovation may also be ruinous to the organization if it is overboard. This study thus sought to review the extant theoretical and empirical literature relating to risky financial innovations, financial distress and firm value. Specifically the study was guided by the following objectives: To review extant theoretical literature on the constructs of risky financial innovations, financial distress and firm value; to review past empirical literature on the constructs of risky financial innovations, financial distress and firm value; to identify the emerging theoretical and empirical gaps that form the basis of future research. Additionally, the study sought to propose a theoretical model to respond to the identified gaps. The study has concluded that financial innovation has positive impact on financial performance and firm value, there is direct relationship between financial innovation and financial deepening and financial innovation enhances growth of the firm.

Keywords: Innovation, financial innovations, financial distress, firm value

Introduction

The occurrence of the global financial crisis between 2007 and 2009 highlighted the risks of financial innovations while undermining its importance for an economy. One reason why complex financial innovation's such as collateralized debt obligations (CDOs), credit default

swaps (CDSs) and asset securitization were developed is to help minimize the information asymmetry that are associated with credit transactions and bring about appropriate evaluation of risk. With financial innovation, firms can engage in risk ventures and reap the benefits of risk technologies that can effectively and efficiently transform their business. Additionally financial innovations have had a positive role in modernization of financial transactions and the general improvement in economic welfare (Ashby, 2010). Literature (Lisboa, Skarmas & Lages, 2011; Chao, Lipson & Loutskina, 2012; Wanke, Barros & Faria, 2015) supports that financial innovation is of great importance to a firm's performance in the future but the risks associated with this kind of undertakings have not received the much needed attention.

Innovation according to Brownbridge (2016) is a factor inherent in human development. Since time in memorial humans have sought for ways and means of responding to life challenges and opportunities many of which have led to great scientific revolutions.in addition finance has been enriched and possibilities of economic prosperity enhanced. To expound further; financial innovations comprises of activities that seek to achieve the modernization of financial systems and finance in general. (Laeven, Levine & Michalopoulos, 2015). This idea consists of markets, institutions, practices, financial instruments and markets that new or transformed. Financial innovation may be dated back in the medieval period where organizations that were specialising in lending of money, deposits, and I Owe You (IOU, S) were established. Most of these functions were a reflection of all important functions of modern day banking. This has evolved to more recent financial innovations that include; services like ATMs, clearing houses, electronic payments, instruments of debit cards, credit cards and derivatives.

The various sources of innovations are categorized into two; technological and economic changes (Boadi, Antwi & Lartey, 2013; Tufano, 2003). The first set includes services and products that are pegged on new technologies that decrease cost of gathering and processing information and increase efficiency in financial transactions such as mobile banking, electronic foreign exchange platforms, and automated underwriting systems. Another category consists of changes in regulation and market conditions that are faced by economic agents Such as derivatives and adjustable rate mortgages. Hence, strengthening prudential regulations that will be geared towards discouraging excessive risk can greatly benefit financial institutions.

Although there is evidence that financial innovations may improve firm performance, financial institutions may engage in innovations that may be undoing to the firm's future performance and ultimately its value (Frame

& White, 2014). Chao, Lipson and Loutschina (2012) studied the relationship between financial distress and risky innovation, their findings' showed that highly levered firms and those that had low book to market ratio, less cash, or poor past performance undertook risky innovation. They also found as firms move towards distress they tend to increase the more risky innovations by shifting their research activities towards such risky endeavours. This means that financial institutions including banks and financial institutions when faced by potential financial distress and bankruptcy are likely to respond by becoming more liberal by engaging in research and development to develop new systems and products so as to survive. This pursuit may lead financial institutions to engaging in innovative activities that are risky.

The conventional banking structure as noted by Calomiris (2016) is inherently unstable and significantly leads to its failure. Subbarao (2013) observes that microfinance institutions being a deposit taking institutions are likely to have fixed liabilities, at any given point in time, as fixed interest is promised on all deposits. On the other hand the assets of these institutions are in the form of loans earning variable interest which is subject to credit risk. Turner (2014) observes that this also leads to interest rate risk. In addition, the demand deposits by their nature are of short maturity while its loans take longer. There will therefore be a risk and maturity mismatch. Thus, the nature of liabilities and assets make the banking sector to be prone to failure in times of any shock or decreased confidence by the depositors (Henderson, Lang & Jackson, 2015).

On their part, Chakravarty, Fonseca and Kaplan (2015) in their submission concluded that bank failures arise from disequilibrium's between the bank and its depositor's. Inefficiencies are brought about by the lack of coordination among the depositors hence bringing about a decline in confidence on the operations of the banking sector. However, an in-depth look into literature blames macroeconomic factors and approach and deals with the issue from an aggregate level of generalized failure. (Mare,2015). One part of this literature explains the failures in the macroeconomic imbalances. A second generation of macro models to explain financial failures suggests the central role of expectations and coordination failure among creditors, so the failure can occur independent of soundness of economic fundamentals (Kaufman, 2015). It is evident that failure of financial institutions may be caused by financial distress. The study also notes that financial innovation may lead to financial distress and in equal measure; financial distress may also necessitate financial innovation. Additionally, the study has noted that risky financial innovation and financial distress independently influence the value of the firm. However, researchers have shied away from the fact that both financial distress and risky financial

innovation may influence the value of the firm simultaneously. Therefore, this study will seek to find out whether there is any relationship that exists between risky financial innovation, financial distress and firm value.

Financial Innovations (FI) have had numerous gains in the financial market. However, its contribution to the financial distress deserves careful evaluation. Numerous researchers have analysed the causes of financial distress (Altman, 2000; Hotchkiss, Strömberg, & Smith, 2014;

Geng, Bose & Chen, 2015; Zhang, Xie, Lu & Zhang, 2015; Al-Hadi, Chatterjee, Yaftian, Taylor & Monzur, 2017). They found out a number of reasons including major investors' panics, shocks to money supply, debt financing, bank customers' panics as well as the interconnectedness and with complexity of financial institutions. The updated literature however argues that a financial system that is competitive and the non-patentability of financial innovation can cause a financial distress. Tufano (2003) defined financial innovations to comprise the creating of instruments, both product and process, by inventing or diffusing services, products, or ideas. Furthermore, he emphasized the importance of developing measures for financial innovations and gives the factors behind financial innovations, namely, managing risk, pooling of funds, regulation and incompleteness of markets. Dynamic modernization takes place as people seek to satisfy new needs, reduce cost of transaction, solve agency conflict, exploit profitable opportunities and administer risks.

From the above perspectives, it therefore follows with financial innovations the general material well-being is bound to increase. In particular, an innovation plays a great role in attainment of business objectives while increasing the chances of enjoying the economies of scale (Frame & White, 2014). Through increase of products on offer and the facilitation of financial intermediation, innovations promote a saving culture among depositors and divert these resources to beneficial projects. It also makes credit to be more accessible, make risk to be well allocated, and help match the supply risk against the demand for refinance obligations for investors willing to bear it (Geng, Bose & Chen, 2015). Additionally, innovations may encourage improvements especially when new projects that are able to attract funding are born out of the requirements for information technology as in the case of venture capital (Sánchez, 2010).

Although banking institutions have several benefits, the leaping of these benefits has been hampered due to fact that financial institutions have faced many challenges. A big number of banks have failed due to; Poor loan quality, non-performing loans, and information asymmetry and particularly problems of adverse selection and moral hazard (Chao, Lipson

& Loutskina, 2012). Other reasons fronted by scholars include, heavy borrowing by directors and financial distress. All the challenges facing these financial institutions point toward financial distress (Spokeviciute, 2016). As noted by Wanke, Barros and Faria (2015), financial distress is key challenge to firms big or small. According to Betz, Oprică, Peltonen and Sarlin (2014), firms are said to face financial distress when they are faced with insolvency. Insolvency means a situation where firm is not able to meet its short-term maturing obligations or the liabilities are more than the assets. A situation where operating cash flows are not enough to satisfy short term maturing obligations and the firm is under obligation to take remedial action. Jensen and Meckling (1976) in their earlier work found out that common shareholders are inclined to take more risky investments since they are the residual claimants and thereby appropriate value from debt holders. They thus conclude that financially distressed firms are more likely to engage in risky behaviour.

Distress in the financial sector has been explained as a situation where a large percentage of financial institutions have more liabilities than assets; this might lead to runs and portfolio shifts, and subsequent downfall of the financial system (Spokeviciute, 2016). Financial sector Distress is an indicator of an unnatural situation and enormous pain in the operational activities of banks occasioned by a mixture of highly volatile factors among which are lack of continuity and unpredictable policies, management incompetence, undercapitalization, unhealthy asset portfolios caused by poor administration, fraud and forgeries. Additionally, poor loans and advances to management, interference by board members and poor internal control are other precursors to financial distress (Aburime, 2009).

Business organizations exist in the market to make worth for their stockholders. Creation of value can be described as the upsurge in the monetary worth of stockholders, as measured by proportion of marketplace worth of stocks to the net asset value of stocks, produced by the presentation of a company (Oladele, 2013). Creation of value takes place if the company produces more affluence for their bondholders that it could have not been easy to produce for themselves. To create worth, as a result, the organization needs to distinguish how to recognize, choose, as well as divide the marketplaces in which to contest; describe the kind of worth to be suggested on the market; as well as create and circulate such value (Pandey & Saluja, 2014).

The valuation process aims at determining the current value of the projected cash flows to equity holders and converting this present value into one number that corresponds to the fundamental- intrinsic firm value (Chakravarty, Fonseca & Kaplan, 2015). Similarly, Damodoran (2009) describes the value of the firm as the discounted cash inflows both from the

assets in place and the likely growth in future, discounted at the cost of capital. He concludes that a firm's value can be increased by increasing the payoffs generated by the current investments, increasing the length of the high-growth period, increasing the expected growth rate in earnings or cash flows, or reducing the cost of capital.

A corporation ownership is vested in its shareholders and the shareholding' is the portion of total assets that belong to the them. The market value of each share is the price required to purchase a share in the company from the securities exchange; the share price multiplied by outstanding shares gives the market value of equity (Parkinson & Waweru, 2010).Market value of a share is the highest price that the share will sell in a competitive market, assuming that the market participants have access to all information and act independently. This value may be established through the capital markets (Jo & Harjoto, 2011). Since investors are assumed to be informed and can use valuation models to determine the true value of a share based on the available information, it is thus expected that market values may be derived from the company's expected long-term performance, growth opportunities, expected earnings growth and return on investment.

Widyastuti (2016) is of the view that a firm's value is the total values of all its monetary securities. The money streams received by the required claims should add up to the entire cash flow that assets produce. In a diverse situation where the company's profits vary, the problem of exploiting becomes rather complex (Ammann, Oesch & Schmid, 2011). Value can be predicated on the dividends streams that the stockholder will receive during the firm's life, discounted to their present value. In addition, firm's value can be measured through different means such as net sales, paid-up-capital, total assets, capital employed and so on (Sharma, 2011). Firm's value is expected to reflect the value of tangible and intangible assets. The common tool which is usually used in measuring the firm's value is Tobin's Q. Tobin Q is usually a percentage of a firms market value of to its assets replacement cost (Taslim, 2017). Under Q proposition, a firm is said to create more value if investment returns are greater than investment cost.

Research Problem

Financial institution failures are particularly harmful for the economy and detrimental for the health of financial sector. The real cost of a bank failure is the deadweight loss and the consequent diversion in macroeconomic policy forced by the failure (Chao, Lipson & Loutskina, 2012). Business organizations in an attempt to maximize the wealth of shareholders remain profitable and solvent always engage in research and development. In addition, the cutthroat competition in the banking sector forces financial institutions to develop unique products to remain afloat.

This competition is more intensified between mainstream banks and other financial institutions considering that major banks have immense resources (Puma, 2011). This is catalysed by the fact that major banks, which are majority multinational, use their financial capability to edge out upcoming financial institutions (FIs). In return, financial institutions become more liberal; they lend huge amounts of money at low interest rates (Taslim, 2017). To achieve this, the MFIs borrow heavily from other commercial banks and the central bank. This in turn exposes them to credit risk, liquidity risk and default risk. Faced with the risk of bankruptcy, the MFIs engage in research and development to exploit and refine existing technologies but in the process end up engaging in a more risky search for innovative technologies that can intensely and certainly change their business.

Value of the firm as a construct has received enormous treatment in the last few centuries. Early efforts in understanding value of the firm were on articulating the value construct through conceptual reasoning. Alfred Marshall's theory of value in the 1920s is probably the earliest attempt to conceptualise the value of an undertaking (Frisch, 1950). However, this concept had its definite shortcomings. For instance, the model ignored the fact that any optimization procedure through combination of factors essentially depends on pricing system. Building on these early works, numerous studies have additionally explored the associations between firm value and other broader characteristics such as financial innovation, firm efficiency and financial distress (Norden, Buston & Wagner, 2014). These later studies have used both theoretical thinking and empirical data to find the relationships between major constructs of the firm performance, financial distress and financial innovation. However, due to the intrinsic restrictions of the approaches used, including the adoption of largely deductive or positivist approaches to research, and the level of investigative generalization employed, most of these empirical studies have only been able to examine these relationships at an aggregate level (Widyastuti, 2016).

Although a unlimited deal of attention has been dedicated on how financial and governance features affect the general size and efficacy of innovation activity (Lisboa, Skarmas & Lages, 2011; Sivakumar, Roy, Zhu & Hanvanich, 2011; Frame & White, 2014; Norden, Buston & Wagner, 2014; Laeven, Levine & Michalopoulos, 2015), less consideration has been given to the causes of the balance between financial innovation and financial distress and how the two affect the value of the firm. Further, there is very limited works on the degree to which companies chase more unsafe innovation. By means of existing literature that captures the degree to which financial innovations influences other constructs in the firm, this paper seek to establish whether firms facing financial distress swing the balance of their innovation toward more certain or more severe substitutes and the influence

it has on the firm value.

Empirical review

Introduction

In order to respond to the study objectives, the paper presents a summary of the conceptual literature on the constructs of financial innovation, financial distress and firm value. This will enable the researcher to come-up with a theoretical model.

Risky Financial Innovations and Firm Value

Several empirical attempts have been made to establish the relationship between financial innovation and other constructs. For instance, Lerner (2002) studied financial patents dating from 1971 to 2000. He looked at the effects of street decisions made by the state on degree observable innovations in the market. The study applied classification of Delphion IP Network and the US Patent and Trademark Office to identify 445 financial patents. The study established that there was a surge in patenting by large companies implying that patenting could be used as a proxy for financial innovation. Similarly, Lerner and Tufano (2011) established certain variances between financial innovations and inventions in manufacturing, remarkably stressing differences in changing aspects and agency structures. They pointed the challenges of evaluating financial innovations in the rarity of research and development spending, rarity of financial copyrights and the lack of transparency among private firms in their innovations.

In addition, Lerner (2006) did an investigation on the origin of financial innovations and developed measures of financial innovations basing his arguments on the news in the wall street journal for the period between 1990 -2002, which he links to more statistics emanating from the Security exchange commission, journals in finance Compustat. In His regressions he showed that less profitable companies are more inventive with an added agglomeration outcome. Boz and Mendoza (2010) did an examination on the interaction of financial innovations, learning and security constraints in a stochastic equilibrium model of domestic debt and land fees. They used an experimental system with swapping between high- and low-gear regimes according to Bayesian learning .They established that innovations in financial markets lead to boom-bust cycles. There exist differences to innovations in product markets. In general, customers of financial facilities face opacity about the selection of financial representatives and their value delivered in financial facilities. In addition, study about financial innovation has not yet produced any structural model with which to estimate both supply and demand of financial innovations.

Lerner (2010) did a study on litigation of patents on financial

innovations. An analysis of financial patents awards for the period 1976 to 2003 was done. Negative binomial and Poisson regressions discovered that patents on Financial inventions are contested more often than ordinary patents, contested patents were customarily from small companies and had extra claims and citations than other financial patents. Henderson and Pearson (2011) revealed that shareholders can be subjugated by innovative financial merchandises. Their event study showed that innovators supplied their inventions with a risk premium to unacquainted investors since the nature of innovativeness increases the complexity and ambiguity. Consequently, issuers abuse investors' due to their lack of knowledge and information about the operations of financial market. The authors blame investor's excess demand on framing, risk aversion and overconfidence in the financial markets.

Kuehnhausen (2014) evaluated the impact of innovative activity of financial agents on their fragility in a competitive framework. Building on the existing and vast array of the interconnection of financial innovations, financial distress of firms and financial crises provided by theoretical arguments; the study empirically assessed the causal link between a financial agents' innovativeness and stability. Using a unique data set on financial innovations in the USA between 1990 to 2002, the scholarship revealed that a greater degree of innovation negatively and positively affects firm stability after controlling for the primary firm characteristics. The results are robust compared to different modifications of innovation measures and against different fragility constraints signifying productivity, activity risk and risk of liquidation.

Norden, Buston and Wagner (2014) studied financial invention and bank behaviour as demonstrated from credit markets. This paper explored whether, and through which network, the active use of credit derivatives changes bank behaviour in the credit market, and how this channel was affected by 2007–2009 crisis. The study findings indicated that banks with superior gross positions in credit derivatives charge considerably lower corporate loan spreads, while banks' net positions are not consistently related during the crisis period. Additionally, banks with larger gross positions in credit derivatives cut their lending by less than other banks during the crisis and have consistently lower loan charge-offs. Thus, the study proposed that there are important risk management benefits from financial inventions that continue under adversative environments.

Makur (2014) evaluated the effect of financial invention on commercial bank's financial performance as the key players in the banking segment in South Sudan over a period of 5 years. The study used a casual approach and studied 16 commercial Banks registered with the central bank of South Sudan for January 2009- December 2013. The findings indicated

that return on asset (ROA) recorded a mean of 3.2534 with standard deviation of 1.2548. The average number of daily transactions using ATM for the commercial banks during the study period was 156,547 with standard deviation of 20,51. It was clear that adoption of financial innovation resulted in robust financial outcomes of commercial banks in South Sudan.

Locally, Gitau (2011) tried to determine the association between financial innovations and financial performance of commercial banks in Kenya. He used a Quasi-experimental research design. The collected data was edited for accuracy, consistency, uniformity, and completeness and organized to permit coding and tabulation before final analysis. Qualitative and quantitative analysis techniques were used. Qualitative data was analysed by categorizing and grouping thematic contents through content analysis to address the research questions. Quantitative data was analysed through descriptive statistics such as frequency counts, mode, and median and mean where applicable. Multiple linear regressions were used to analyse the data. The study concluded that commercial banks had adopted process, product and institutional innovation. It was clear that adoption of financial innovation resulted in strong financial results of commercial banks.

Mugo (2012) wanted to investigate the impact of financial invention on the progress of Micro Finance Institutions in Kenya. A survey was carried out targeting all the thirty four registered MFIs in Kenya. After data collection, the research data was analysed in a correlation design. The research results revealed that most Micro Finance Institutions (MFIs) have innovated new services like m-banking, SME loans, emergency loans, business accounts, financial trainings and partnerships. Other institutions networked their offices, opened new branches and innovated new merchandises in a bid to grow their businesses. The research established that financial innovation is key to an cumulative development of a company in various dimensions like market share, profitability, loan sales and number of products.

Kenyoru (2013) evaluated the effect of financial innovations on financial deepening in Kenya. The study used secondary data on use of financial services. The data collected was analysed using regression method. The study concluded that financial innovation has an insignificant positive impact on financial deepening. Both mobile money innovations and mobile banking have insignificant effects on financial deepening in Kenya. This means that the rise in mobile money transactions as well as in m-banking in Kenya do not significantly influence financial deepening.

Njuguna (2015) conducted a study on the impact of provision of financial services by financial institutions in Kilifi, Kenya. A descriptive survey research design was adopted. The study outcomes showed that there was a positive correlation between the deposits mobilised and the

financial inclusion. It was also found out that there was a need by the financial institutions to ensure that clients' deposits were kept safely in order to enhance trust from the customers. Finally, the study concluded that financial inclusion was enhanced by microfinance institutions.

Muteke (2015) studied the relationship between financial innovation and financial performance among savings and credit co-operative societies in Mombasa county Kenya. The study aimed at establishing whether institutional innovation, process innovation and product innovation influence the financial performance of SACCOs. The study used a descriptive research design. This study aimed at collecting and analysing data on the influence of financial innovation variables on the financial performance of SACCOs. The population of the study was 165 SACCOs based in Mombasa County. The study used a random sample of 36 SACCOs. Data was collected from both primary and secondary sources. The primary data was collected using a semi-structured questionnaire while secondary data was collected from the SACCOs annual reports. The results indicated that there was a positive relationship between financial innovation and financial performance of the SACCOs in the County.

Based on the reviewed literature it is evident that financial innovation influences financial performance positively or negatively. Since financial performance and firm value are related, the study makes the following proposition;

Proposition 1- Risky financial innovations undertaken will be directly associated with firm value.

Proposition 2- Risky financial innovations undertaken by the company may lead the firm into financial distress.

Proposition 3- A firm faced by financial distress may undertake Risky financial innovations to save the situation.

Financial Distress and Firm Value

Financial distress, bankruptcies and indeed forecast of corporate insolvencies has been extensively studied in the overall field of finance. There is immense literature on causes of bankruptcies and its effect on other constructs. However, majority of the studies have been conducted among banks. Further few studies have attempted to link financial distress and financial innovation and firm value.

Chao, Lipson and Loutskina (2012) conducted a study on financial distress and risky innovation. Their study sought to inspect the riskiness of innovation using a huge data set of patent holdings and a measure of riskiness centred on the degree to which new patents differ from a company's existing patent base. The researchers used data on patents between 1980 - 2002, which included 22,136 firm observations covering a wide variety of public

companies and businesses in the United States (US). The study established that measures of financial distress, the amount of debt financing, the level of cash holdings, lower productivity, and lesser Tobin's Q, are positively connected with great distance amongst new patents and the existing patent base of a company.

Okay (2015) investigated corporate failures in non-financial Turkish firms from 2000 to 2015. The study compared the precisions of diverse prediction models such as multivariate linear discriminant, probit, decision tree, quadratic discriminant, , neural networks, logit and support vector machine models. This study confirms that accounting variables are powerful predictors of corporate failures one to two years before the bankruptcy. The outcomes indicate that three financial ratios: working capital to total assets, net income to total assets, net income to total liabilities are important in forecasting corporate failures in non-financial Turkish firms.

Ma'aji (2014) conducted a study on financial distress among SMES in Malaysia. The study developed distress prediction models combining financial, non-financial and governance, variables and analyse the influence of major corporate governance characteristics, including ownership and board structures, on the likelihood of financial distress. The two extensively documented approaches, MDA and logit methods were used. The study sample consisted of 172 companies with 50 percent non-failed cases and 50 percent failed cases for the period between 2000 to 2012. The results show evidence that the models serve as efficient early warning signals and can thus is beneficial for monitoring and evaluation. Controlling shareholder, number of directors and sex of managing director are found to be significant predictors of financially distressed SMEs.

Taran (2012) conducted a study on issues that can predict that a bank will get in trouble during a crisis in Ukraine. This study sought to identify early cautionary signs that could help to detect the weak banks, which would become insolvent if a crisis would come to Ukraine. The study used bank level data for the crisis periods 1997- 1998 and 2007-2008 in order to find the variables that could have been helpful for predicting banking troubles during both of these periods of financial crises. The study showed that capital adequacy and liquidity indicators are consistent predictors of banking failure across crises.

Brownbridge (1998) assessed the causes of financial distress in local banks in Africa and implications for prudential policy. The severity of bad debt problems was attributable to moral hazard on bank owners and the adverse selection of bank borrowers, with many banks pursuing imprudent lending strategies, in some cases involving insider lending. Low levels of capitalization, the political connections of bank owners, and access to public-sector deposits contributed to moral hazard.

Locally, Murithi (2010) carried out a review on corporate improvement response by financially distressed firms listed at the Nairobi securities exchange. The study sought to discover the turnaround tactics that are taken by firms confronted by financial distress. The investigation involved all the firms that were listed for the entire period 2002-2008. Performance of the firms was established by conducting the Z score analysis on each of the firms. The Z score analysis recognized 8 companies having been financially distressed at one year or another during the study period. The investigation established that employee redundancy was the most favoured course of action being carried out followed by asset restructuring, debt restructuring and top management change. The study also established that, in the year of distress the reorganization strategies are more strengthened and are carried out less intensively in the succeeding years after distress.

Ndirangu (2011) conducted a survey on the causes of financial distress in co-operative societies in Nairobi. This study adopted a survey research design. The study had a target of 528 top management of the co-operative societies in Nairobi. Using Primary data collected using questionnaires, and descriptive statistics the study concluded that the causes of financial distress could be traced from the internal factors that heavily rely on management of co-operatives and external factors that mainly surround the politics, governance and legislation.

Muthamia (2013) studied the effect of financial distress on stock returns of firms quoted at the Nairobi securities exchange. The overall objective of the study was to estimate financial distress in the firms quoted in the Nairobi Securities exchange. Applying descriptive correlation design, the study involved a total of 26 firms selected from the population of 61 quoted firms. The study used secondary data from audited financial reports for nine years to estimate financial distress using the Altman's "Z" -score model. The study found that financial distress was prevalent among the sampled firms but the estimates obtained from the sample were not significant enough to be generalized on the population. Computed stock return values were correlated with the financial distress scores. The resulting correlation coefficient indicated a weak positive correlation between financial distress and stock returns.

Meeme (2015) sought to determine the association between observance to BASEL III accord and financial distress position of commercial banks in Kenya. The study assumed a descriptive research design and the population for this study comprised of all the 43 commercial banks in Kenya. Secondary data obtained from the listed companies financial statements from 2013-2014 was used. In this study a multiple regression model was used to examine the nature of association between Basel III accord and

financial distress position of commercial banks in Kenya. The study findings established that that capital requirements, leverage requirements and liquidity requirements have a positive relationship with financial distress status of commercial banks in Kenya hence the Basel III accord requirements positively influence the financial distress of commercial banks in Kenya.

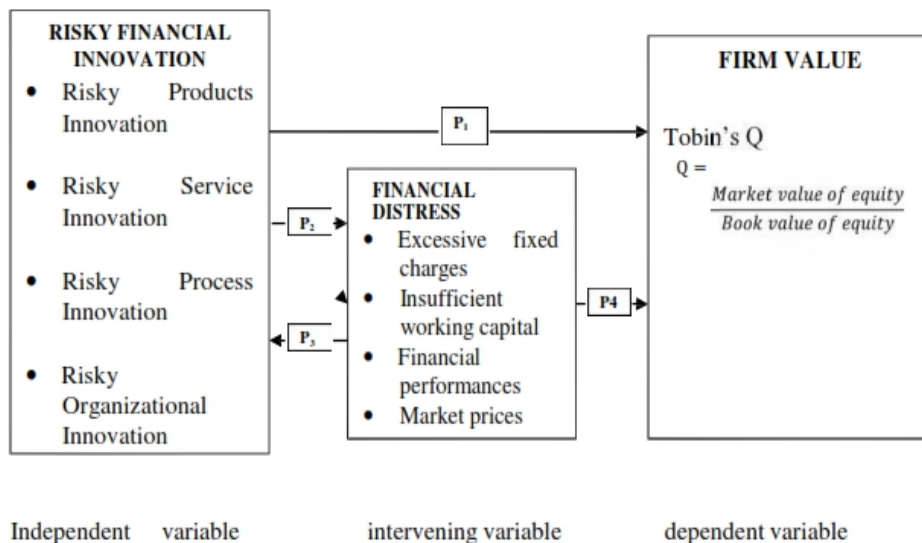
Njuguna (2016) studied the association between risk management practices and financial distress among commercial banks in Kenya. The study was an expressive review and used auxiliary information on budgetary execution from the 43 Kenyan Commercial banks in the year 2015. The information was investigated by utilizing enlightening measurements and also inferential insights. Connection and relapse examination was utilized as a part of request to discover the level of relationship and consequently help in satisfying the motivation behind the study. The study revealed that there is a compact association between budgetary trouble and hazard management practices. This implies that financial distress of commercial banks is highly influenced by risk management practices.

From the above review of constructs, the study makes the following proposition:

Proposition 4- Financial distress is directly associated with firm value.

Theoretical Model

The reviewed conceptual, theoretical and empirical literature in this study have brought out several constructs that will play different roles in a phenomenon involving risky financial innovation, financial distress and firm value. In view of the basic question that the paper sought to answer, scholarship needs to model the phenomenon that emerges from the interaction of these constructs. The concern that arises therefore is that of constructing a theoretical model to demonstrate the phenomenon linking risky financial innovation, financial distress and firm value. Based on the set of arguments preceding this section, the study proposes the following theoretical framework.



Conclusion

The resolve of this paper was the evaluation of both existing theoretical and empirical literature on the linkage between risky financial innovations, financial distress and firm value. Extant literature reviewed indicates that financial institutions sell their innovations with a risk premium due to the complexity and ambiguity involved in innovations.. This way, shareholders can be subjugated by innovative financial merchandises. Additionally, the paper has concluded that financial innovation has positive impact on financial deepening. This is achieved through mobile money innovations and mobile banking in form of money transactions as well as in M-banking. The paper also showed that financial innovation enhance growth of the firm as most Micro Finance Institutions have invented new services like m-banking, financial trainings, business accounts, SME loans, emergency loans, and partnerships. Other Micro Finance Institutions have networked their workplaces, unlocked new branches and modernized products in an attempt to nurture their firms. Moreover, the paper finds financial innovation; financial performance and value of financial institutions have a positive relationship.

However, the study noted that a larger degree of innovation beyond the optimum level exposes the firm to financial distress and negatively affects firm stability and value. It was noted that as firms engage in more and more innovative activities as indicated by the number of patented products and processes, the level of cash holdings, profitability, and the value of the firm as measured by Tobin’s Q reduces. Further, the study establishes that firms faced with financial distress, result to restructuring strategies that

are more intensified exposing the firm to innovative activities that are more risky thus engaging in risky financial innovations.

Finally, the study established that the sources of financial distress might be drawn from the internal factors that heavily depend on management of financial institutions and exterior factors that mainly border on politics, governance and legislation. The results show evidence that models such as capital adequacy and liquidity indicators consistent predictors of banking failure and therefore serve as efficient early warning signals, and can thus be beneficial for monitoring and evaluation. Additionally, little capitalization, political connections stockholders, and right to use to public-sector deposits contributed to moral hazard and subsequent financial distress.

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The Impact of the Main Determinants and Changes in Agricultural Labour Productivity in Macedonia

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Abstract

The aim of this paper is to analyze changes and impacts on the level of labour productivity in the agricultural sector in Macedonia in the period from 2006 to 2017. Labour productivity is an important determinant for establishing the competitiveness of a particular sector or overall economy and helps in creating the necessary conditions for economic development. Agricultural sector in many countries represents the basis for growth in gross domestic product. Agriculture plays a key role in development of the national economy in Macedonia as a third largest sector after services and industry. Therefore, in order to increase the agricultural labour productivity, it is necessary to increase agricultural production, i.e., the part of gross domestic product created by the agriculture sector. In this direction, the paper also analyzes the relationship between agricultural labour productivity and gross domestic product and employment in agriculture. Synthesis and analysis, induction and deduction, descriptive statistics, comparative analysis, correlation analysis and regression analysis are used for the purpose of the paper.

The results show that changes in gross domestic product in agricultural sector in Macedonia have a greater impact on agricultural labour productivity for the analyzed period compared to the impact of changes in the number of employees in the agriculture sector where the relationship is weak to moderate. Research results also showed that there is a positive and strong quantitative relationship between agricultural labour productivity growth rate and GDP growth rate in Macedonian economy. Agricultural GDP is the determinant which has to be influenced through intensification of agricultural production in order to increase the agricultural productivity.

Keywords: Agriculture, productivity, labour, GDP, Macedonia

Introduction

Agriculture plays a key role in the development of the national economy. Agriculture and industry are the two most important sectors of the economy, but also the service sector has gained importance in recent years. Agriculture is traditionally one of the most important sectors in the economy. The growth in agriculture and its productivity are considered essential for achieving sustainable growth and a significant reduction in poverty in developing countries. Productivity growth in agriculture has been a subject of intense research over the past five decades. Developing economists and agricultural economists have analyzed the sources of productivity growth and productivity differences between countries and regions (Rao and Coelli, 2004). In the past, the importance of agriculture was reduced to the role of providing labour surplus and capital for the industry, which was seen as a true engine for economic development (Kjosev, 2015). Today, agriculture plays an important role in Macedonia as a third largest sector after services and industry. It has always been one of the most important sectors in the economy. Without reducing or losing its role, the share of the agriculture sector in total gross domestic product is relatively stable. The stable share of agriculture in national gross domestic product, which average in the period from 2006 to 2017 is around 8.7%, is a result of a moderate development of this sector, as well as a large decrease in the industry activities.

Labour productivity is an indicator of the efficiency of production, which indicates efficient use of the workforce, as a vital resource or a factor of production (Krstic and Jankovic-Milic, 2003). In economic literature, total productivity refers to the amount of output derived from given levels of inputs, i.e. employees in an economy or sector. This is an important topic of research, since productivity is one of the two main sources of larger income streams, where the other source is saving. The significance and importance of strong growth in labour productivity have been strengthened by a number of key processes, as well as by a phenomenon of economic development. Current economic studies see labour productivity as a central problem for understanding the economic development. At the macroeconomic level, labour productivity, i.e. GDP per employee, depends on the dynamics of two aggregates (GDP and employment). Productivity will increase if GDP increases faster than employment. Separation of a labour market and a macroeconomic policy can lead to a higher employment rate without growth in GDP, hence leading to low productivity.

Although the reasons for differences in the level of economic development between countries are numerous, it can be assumed that the differences in economic development are due to the productivity differences and the factors that determine it such as physical capital, labour, natural resources and technological knowledge. In the long run, the only way to

increase economic growth and improve living standards of the population is to increase productivity. Major economists believe that labour productivity is a central problem in understanding the economic evolution. The rising growth rate of labour productivity in the 1990s is seen as a driving force for excellent economic performances (Blinder and Yellen, 2001).

The paper is organized in several parts. First part includes a current knowledge about agricultural labour productivity and agriculture as an economic sector, i.e. theoretical contributions through literature review. The second section covers the methodological approach applied to the research in this paper. The third part covers the theoretical background for the importance of the agricultural sector and agricultural labour productivity, as well as the role of human capital in increasing agricultural production and improving labour productivity. The analysis of changes in agricultural labour productivity in Macedonia within results of the impact of main determinants (gross domestic product and number of employees) on the agricultural labour productivity are presented and explained in the fourth part, and the last section covers the conclusion of the research, with some recommendations for improving the analyzed issue.

Literature review

Agriculture faces with challenges and demands for efficiency, reduction of unemployment, competitiveness, technological progress, environmental protection, demand for greater organic production, rural development. There are authors that analyze the business cycles and have found that the strength of the economic recovery and of the labour market depend importantly on labour productivity. Filipovski, et al., (2017) investigate the degree of synchronization of business cycles in a small open EU-candidate country such as the Republic of Macedonia with the cycle of the EU economy. They apply linear and nonlinear methods for delineating the production gap cycle in the Macedonian economy and autoregressive methods to assess the size and speed of cyclical adjustment of the Macedonian economy to output shocks to the Euro-zone economy. The results of their analysis suggest: first, a high degree of synchronization of the Macedonian business cycles with the cycles of the EU economy; second, the shocks in economic activity in the Euro-zone economy are transmitted almost instantaneously, and with a large magnitude, to the Macedonian economy and third, the impact of the Euro-zone output contraction is less pronounced than the impact of the Euro-zone output expansion, suggesting an impact of the country's autonomous countercyclical economic policies.

Examining the relationship between labour productivity and GDP growth, Trpeski and Cvetanoska (2016) indicated that the relation between

labour productivity and economic growth significantly differs and it is not a constant or stable relation over the periods of time.

Meijerink and Roza (2007) indicated that agricultural sector in many countries represents the basis for growth in gross domestic product, development and competitiveness of the national economy and that in recent years there have been major changes in economic development of developing countries, and especially in the agricultural sector. According to them, there is a general consensus that agriculture is less productive, compared to non-agricultural sectors in terms of value creation. In other words, most countries dominated by non-agricultural sectors are richer than economies where agriculture dominates.

By definition, labour productivity is the ratio between the real gross domestic product and the number of employees (or the number of working hours). Hence, Kitov and Kitov (2008) showed that productivity growth is also driven by the only macroeconomic variable - GDP per capita or change in a certain age of the population.

According to Johnston and Mellor (as cited in Dethier and Effenberger, 2012), productivity in agriculture can play a vital role in economic growth by linking the supply and demand. For example, the agricultural sector supplies raw to industrial or other non-agricultural sectors and demand inputs from modern sectors such as science and information technology. On the consumption side, higher agricultural productivity can increase the income of the rural population and thereby create greater demand for domestically produced industrial output.

Polyzos and Arabatzis (2015) showed that labour productivity plays an important role in shaping the competitiveness of a particular sector or the whole economy and helps in creating the necessary conditions for economic development. In order to increase the agricultural labour productivity it is necessary to increase agricultural production.

Omorogiuwa et al., (2014) used trend analysis in terms of a historical and current perspective and various descriptive methods to analyse the development of Nigeria through each decade since its independence in 1960 and examined the factors that have had an impact on its agricultural productivity and they demonstrated that it is plausible for Nigeria to diversity into the agriculture market in their effort to become more self-sustainable and a world economic power.

In their study, Stanojevic et al., (2015) have written that modern farming and the modern way of organizing agricultural production requires not only increasing the level of knowledge of the agricultural population, but also a development of entrepreneurial skills and abilities, a competent, highly educated workforce that will easily adapt and accept new methods of modern agricultural production.

The increase in agricultural labour productivity in poor agricultural economies simultaneously increases the productivity of poor countries and its critical resources (the workforce in the agricultural sector), increases their real incomes and stimulates the supply and demand of non-food goods and services. According to Dorward (2013), creating supply and demand is crucial, but often there are no changes triggered by developmental interventions.

Gutierrez (2002) showed that countries which have greater agricultural labour productivity have higher rates of investment in physical and human capital. Hence, in the long run, the performance of the agricultural sector is determined by government policies aimed at promoting the development of institutions that will encourage farmers to invest, increase work skills and introduce new production methods.

Analyzing businesses operating in the rural areas, Mece (2016) found difficulty in hiring local workers for agriculture that are capable of matching the skills required for their jobs while the labour market appears to not include adequate mechanisms for job information dissemination.

Grycova (2014) estimated the significance of the influence of labour productivity in agriculture, calculated as the ratio of gross value added and total employment in the agricultural sector, on wages in agriculture, as labour productivity in agriculture can be a possible solution to the problem of wage differentials.

Trpeski et al., (2016) analyzed the relationship between agricultural labour productivity and real net wages and found that in the post crisis period agricultural labour productivity has an impact on real wages in agriculture.

Hence, the aim of this paper is to calculate the level and changes in agricultural labour productivity regarded to its main determinants, as well as to examine the interdependence between agricultural labour productivity, gross domestic product and number of employees in agriculture in order to indicate the critical determinants of productivity that require improvement. The hypothesis which arise from the subject and problem of research assumes that level and changes in agriculture labour productivity in Macedonia are a result of the changes in the gross domestic product in agriculture and the number of employees and that the impact of gross domestic product on agriculture labour productivity is greater than the impact of the number of employees. Knowing the changes and determinants is essential for understanding the importance of agricultural labour productivity for the economic growth.

Methodological approach

Methods, such as synthesis, analysis, induction and deduction, descriptive statistics, comparative analysis, correlation analysis and regression analysis, are used in order to calculate the level and changes in agricultural

labour productivity regarded to its main determinants, as well as to examine the interdependence between agricultural labour productivity, gross domestic product and number of employees in agriculture. Correlation analysis and regression analysis have been used to show if there is a link between labour productivity in agriculture and gross domestic product in agriculture in Macedonia and how productivity in agriculture is important for economic growth.

Labour force, as an input in the production of goods and services, can be measured in two ways: as an average annual number of employees or as a total number of working hours per year. The second way of expressing labour as an input in the production process is more convenient for determining the labour productivity. But, in the calculation of productivity, it should be clearly defined how labour as an input is measured. Output growth rates per worker and number of working hours may vary when there is a change in working hours over time. Historically, a large drop in average working time would mean that hourly production increases significantly faster than the output per worker (Sharpe, 2002).

For the purposes of this paper, output, i.e. gross domestic product per employee, is taken as an input for calculating labour productivity because the procedure for calculating labour productivity in the long run is simpler and overtime or overtime working hours are very common and not fully registered in the past period in Macedonia. Therefore, in order to analyze labour productivity, as an indicator of efficiency, number of employees in agriculture is taken as a denominator for calculating the labour productivity ratios.

A level of productivity and a productivity growth rate are also used to analyze the agriculture labour productivity in Macedonia. The level of productivity shows how much the gross domestic product is generated per employee in the current year, while productivity growth rates show the change in two different periods.

Official data from State Statistical Office of the Republic of Macedonia and National Bank of the Republic of Macedonia are used for the qualitative and quantitative analysis. A chain index is used in order to calculate changes in gross domestic product, number of employees and agricultural labour productivity, while for calculating changes in labour productivity under the influence of gross domestic product (K_{pg}) and changes in labour productivity under the influence of number of employees (K_{pl}), following formulas are used (Krstic and Sekulic, cited in Stanojevic et al., 2015):

$$Kpg = \frac{Kg^4}{1 \pm KI^5} \times 100$$

$$Kpl = \frac{KI}{1 \pm KI} \times 100$$

The significance of agricultural sector and the effect of human capital on agriculture labour productivity

Agriculture in Macedonia has become an aim of research after gaining its independence. Since then, agricultural policy has been involved in overall changes in Macedonia's economy, from a centralized to a market-oriented model. The aim of this agricultural policy in Macedonia was directed towards creation of market-oriented production, liberalization of agricultural production from the state protection and stimulation of individual agricultural sectors for increasing productivity. Today, agriculture and its development are key pre-accession elements of Macedonia for joining the European Union.

In the period 2006 - 2017, the share of agriculture in total GDP in Macedonia is relatively stable and amounts at approximately 8.7%. The constant share of agriculture in total GDP is due to the modest recovery of the sector and the simultaneous decline of production sector share. In the period of economic restructuring, agriculture has contributed to the country's social and economic stability.

The following table gives a more detailed overview of the share of agricultural sector in total gross domestic product in Macedonia.

Table 1. Share of agricultural sector in Macedonia for the period 2006 – 2017

	Total GDP*	GDP of agriculture (% of total GDP)
2006	324292,0	9,2
2007	345285,0	8,8
2008	364179,0	10,3
2009	362873,0	10,6
2010	375061,0	8,9
2011	383837,0	8,8
2012	382086,7	7,4
2013	393262,1	7,9
2014	407535,0	7,8
2015	423249,4	7,7
2016	435564,3	9,1
2017**	320563,2	7,5

* GDP is expressed in million denars

** The amount refers to the first three quarters and it is estimated

Source: National Bank of the Republic of Macedonia: Quarterly

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⁴ coefficient of change in agricultural gross domestic product in the current period (t) compared to the previous period (t-1)

⁵ coefficient of change in a number of employees in agriculture in the current period compared to the previous period (t-1)

Agricultural productivity is important for many reasons. Beside the production of goods which are of primary concern to people, productivity is important for providing growth prospects and competitiveness on the agricultural market, income distribution, and labour migration. An increase in agricultural productivity implies greater efficiency in the distribution of rare resources. Furthermore, those more productive producers provide greater well-being for themselves than those who are less productive, who would leave this sector and seek greater opportunities in other activities. Agriculture is an important economic activity in any national economy, even for countries where the market economy has been developed. Kjosev (2015) has written that the reasons lay in the role that agriculture has in the wider economy. Namely, the country can start with the process of achieving economic development only at the moment when agriculture will be able to provide an abundance of food for the entire population in the country. Usually, a modern farming is an important component of the demand for industrial products and other services. Agricultural productivity growth leads to a growth in the agricultural sector and it can especially contribute for poverty alleviation in poor and developing countries, where agriculture provides jobs for the vast majority of the population.

Having in mind the importance of human capital for agricultural productivity growth and taking into account the general perception that agriculture is a labor-intensive sector, it is also important to make an analysis of some dimensions of agricultural population. The reasons for a development or a decline in agriculture, and hence in the labour productivity of an economic sector or a country, can be not only due to a favorable or an unfavorable position and natural resources, but also due to the institutionalization and management of human resources in the country. Economists have long been interested in evaluating the capacity of workers in the economy in terms of productivity. Human capital defined as a fund of knowledge, skills and abilities determines the level of productivity of individuals. In principle, this includes the abilities and skills acquired through education, training and experience.

Generally, farmers acquire necessary knowledge through an educational system. However, beside formal education system, farmers receive additional information, knowledge, recommendations and advice through advisory services of the appropriate responsible ministry.

Formal education for agriculture in Macedonia takes place in secondary agricultural schools, higher vocational schools and higher education institutions. Non-formal education is not institutionalized and is implemented irregularly, within national and international projects. The structure of Macedonian agriculture is characterized by a large number of individual and small agricultural economies whose human resources are

characterized by a relatively low educational level (Ministry of Agriculture, Forestry and Water Economy, 2014).

The number of students in Macedonia enrolled in the higher education system in the field of agricultural science is 2.5% in average in the period from 2010 to 2017, and it has been falling dramatically since 2015 (Table 2). This points to the fact that the interest in formal education in this field is very low.

Table 2. Students enrolled at faculties of agricultural sciences in Macedonia in the period 2010-2017

Year	Total number of students*	Students at faculty of agricultural science (%)
2010	50110	2,42
2011	43686	2,81
2012	50761	2,79
2013	49675	2,32
2014	49420	2,64
2015	51093	2,62
2016	51845	2,38
2017	51949	2,15

*The amounts refer to the number of students enrolled at state faculties / universities

Source: Statistical Yearbook of the Republic of Macedonia 2010,2011, 2012, 2013, 2014, 2015, 2016, 2017

As an example of analysis in terms of education, a number of employees in agricultural enterprises and cooperatives in Macedonia has been taken. Table 3 shows the same declining trend of higher education workers compared to the share of employed persons with secondary education who has seen a significant increase in recent years. Furthermore, the number of employees with secondary education is significantly higher than the number of employees with higher education in the period after 2012.

Table 3. Employees in agricultural enterprises and agricultural cooperatives in Macedonia according to the education profile, 2008 - 2016

Year	Total number of employees*	Employees with higher education (%) **	Employees with secondary education (%)
2008	2647	13	11
2009	2604	13	12
2010	2743	14	12
2011	2753	12	10
2012	2382	12	17
2013	3087	11	14
2014	2900	9	12
2015	2993	9	13
2016	2526	10	17

* Not taken into account workers in administration

** The calculations also include the employees of the Upper School

Source: Statistical Yearbook of the Republic of Macedonia, 2013 and 2017

The development of human capital in agriculture imposes the need for creating and implementing lifelong learning strategies by improving the quality and effectiveness of education in order to acquire the knowledge and skills needed for human capital. The knowledge, as well as the transfer of knowledge through advisory services, are very important elements for successful development of the agricultural sector. The processes of effective creation, transformation and transfer of knowledge are critical for creating a highly productive labour force in the agricultural sector. In Macedonia, one of the leading institutions for knowledge transfer in agriculture is the Agency for Promotion of Agricultural Development, as a state administration body that operates independently in its work.

Discussion and results of agricultural labour productivity analysis in Macedonia

In table 4, agricultural labour productivity is calculated as a ratio between gross domestic product in agriculture and labour force, i.e the number of employees as a factor or input in agricultural production for the observed year. The greatest changes in Macedonia, i.e. a decrease in labour productivity is noted in the period when consequences of the Great financial and economic crisis from 2008 are felt. Since 2013, GDP in agriculture sector has been stabilizing and recovering, which can be shown by positive growth rates.

Table 4. Agriculture labour productivity in Macedonia in the period
2006 – 2017 година

Year	GDP in agriculture*	Number of employees in agriculture	Labour productivity
2006	29869,0	114777,0	260235,1
2007	30557,0	107717,0	283678,5
2008	37428,0	119749,0	312553,8
2009	38446,0	116668,0	329533,4
2010	33264,0	121770,8	273169,0
2011	33874,0	120893,3	280197,6
2012	28439,3	112584,8	252603,2
2013	30877,7	127185,8	242776,2
2014	31841,0	127438,3	249854,3
2015	32433,3	126126,3	257149,5
2016	39586,1	120303,3	329052,7
2017**	24200,1	120472,0	200877,1

* GDP is expressed in million denars

** The data refers to the first three quarters

Source: National Bank of the Republic of Macedonia: Quarterly Report III / 2017

Table 5 illustrates labour productivity in Macedonia in the period from 2006 to 2017, with its rates of change and its determinants' rates of change for the current year compared to the previous year.

Table 5. Analysis of changes in labour productivity in agriculture (Kp) in Macedonia in the period 2006 - 2017

Year	Kg ⁶	Kl ⁷	Kp ⁸	Kpg ⁹	Kpl ¹⁰
2007/2006	2,3	-6,2	9,0	2,5	6,6
2008/2007	22,5	11,2	10,2	20,2	-10,0
2009/2008	2,7	-2,6	5,4	2,8	2,6
2010/2009	-13,5	4,4	-17,1	-12,9	-4,2
2011/2010	1,8	-0,7	2,6	1,8	0,7
2012/2011	-16,0	-6,9	-9,8	-17,2	7,4
2013/2012	8,6	13,0	-3,9	7,6	-11,5
2014/2013	3,1	0,2	2,9	3,1	-0,2
2015/2014	1,9	-1,0	2,9	1,9	1,0
2016/2015	22,1	-4,6	28,0	23,1	4,8
2017/2016*	4,2	0,1	4,0	4,2	-0,1

* The comparison was made for a period of 9 months (without last quarter)

Source: Authors' calculations

Agricultural labour productivity in 2007 increased by 9% compared to 2006. Gross domestic product increased by 2.3%, while the number of employees in the agricultural sector decreased by 6.2%, whereby this ratio has a positive impact on the change, i.e. an increase of labour productivity in agriculture in 2007 compared to 2006. Namely, the reduction in the number of employees is greater than the increase in agricultural gross domestic product, which means that the change in agricultural labour productivity is significantly affected by the change in agricultural employment.

In all of the years, labour productivity in agriculture is analyzed as a result of the changes in the gross domestic product and the number of employees in agricultural sector. In 2016, labour productivity is increased by 28% compared to 2015. Gross domestic product increased by 22.1%, while

⁶ coefficient of change in agricultural gross domestic product in the current period (t) compared to the previous period (t-1)

⁷ coefficient of change in a number of employees in agriculture in the current period compared to the previous period (t-1)

⁸ coefficient of change in agricultural labour productivity in the current period (t) compared to the previous period (t-1)

⁹ coefficient of change in agricultural labour productivity under the influence of agricultural gross domestic product in an observed year in comparison to the previous year

¹⁰ coefficient of change in agricultural labour productivity under the influence of number of employees in agriculture in an observed year in comparison to the previous year

the number of employees decreased by 4.6% compared to 2015. The growth of the gross domestic product of 22.1% in 2016 causes a rise in labour productivity by 23.1%, while the reduction in the number of employees in agriculture sector by 4.6% leads to an increase in labour productivity by 4.8%. Such effects, i.e. changes in the output and the number of employees in agriculture, lead to an increase in labour productivity by 28% in 2016 compared to 2015.

Before analyzing the relationship between gross domestic product in agriculture and agricultural labour productivity, we will examine their interdependence. The aim is to determine if there is a quantitative relationship between GDP variations and agricultural labour productivity and, if so, how strong it is.

Table 6. Correlation coefficients in the period 2006 -2017

	Agricultural labour productivity	GDP in agriculture	Number of employees in agriculture
Agricultural labour productivity	1	0.962	-0.332

Authors' calculations.

Based on data for GDP and labour productivity in agriculture, a coefficient of 0.96 was calculated on a quarterly and annual basis for the period 2006 - 2017. This coefficient shows that there is a positive and strong quantitative relationship between gross domestic product in agriculture and agricultural labour productivity, which means that changes in both variables occur in the same direction and it is very likely to predict the movement of labour productivity through this variable. On the other hand, the quantitative link between the number of employees in agriculture and agricultural labour productivity is negative and moderate, with a coefficient of correlation of 0.33.

In order to show the importance of agricultural labour productivity in overall economy, the following table shows a regression analysis of agricultural labour productivity growth rate and overall GDP growth rate. For this purpose, following regression model is set: $y = b_0 + b_1x$; where y is overall GDP growth rate, and x is an agricultural labour productivity growth rate. b_0 and b_1 are regression coefficients.

Table 7. Regression analysis of growth rates of agricultural labour productivity and total GDP in the period 2000 - 2017 (quarterly data)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.014797	0.742221	0.019936	0.9842
D(prod_growth)	0.135336	0.012703	10.65374	0.0000
R-squared	0.725243	Mean dependent var		0.015928
Adjusted R-squared	0.718854	S.D. dependent var		9.390171
S.E. of regression	4.978971	Akaike info criterion		6.091750
Sum squared resid	1065.977	Schwarz criterion		6.172046
Log likelihood	-135.0644	Hannan-Quinn criter.		6.121684
F-statistic	113.5022	Durbin-Watson stat		2.742375
Prob(F-statistic)	0.000000			

Dependent variable: total GDP growth rate

Note: $p < 0,05^*$; correl. 0.82

Source: Authors' calculations.

The coefficient b_1 shows the relationship between agricultural labour productivity growth rate and GDP growth rate in the overall economy. It also shows to what extent agricultural labour productivity growth rate affects the rate of GDP growth in the overall economy. Before conducting the regression model, a Unit Root test for stationarity in a time series is done. It is important for examination of a time series because a non-stationary regressor invalidates many empirical results. A time series have stationarity if a shift in time does not cause a change in the shape of the distribution. For this analyze, Unit Root test is tested by using Augmented Dickey-Fuller test. The test showed that agricultural growth rates and GDP growth rates are non-stationary and therefore it is made a first differentiation where time series become stationary. Then a regression model is set on the first level of differentiation of the series agricultural growth rates and GDP growth rates. A low p-value of 0.0000 (< 0.05) indicates that variables are significant and the null hypothesis is rejected (Bucevska, 2016). Or, growth in agricultural productivity has an influence and causes a growth in the overall GDP in Macedonia. Also, the statistical analysis shows that the model explains 71,9% of the variability of the response data.

Furthermore, the coefficient b_1 for agricultural labour productivity growth rate shows that an increase in agricultural labour productivity growth rate for one unit will lead to an increase in total GDP growth rate for 13,5%. The coefficient of correlation is 0.82, which means that there is a positive and strong quantitative relationship between agricultural labour productivity growth rate and GDP growth rate in the economy.

The analysis confirms that changes in gross domestic product in agricultural sector have a greater impact on the agricultural labour

productivity, compared to changes in the number of employees in agricultural sector and that agricultural labour productivity is particularly important for economic growth. In this direction, gross domestic product of agriculture is the determinant which has to be influenced through intensification of agricultural production in order to increase the agricultural productivity, and it should not be influenced only by changes in the number of employees.

Conclusion

As a sector which has a significant influence on the economic development in Macedonia, it can be concluded that agricultural labour productivity depends on its growth, i.e., the growth of its determinants. At macroeconomic level, labour productivity will increase if gross domestic product increases faster than employment. In the analyzed period, labour productivity in agriculture is a result of the changes in a gross domestic product and a number of employees in the agriculture sector.

There is a strong quantitative relationship between agricultural gross domestic product and agricultural labour productivity in Macedonia compared to the relationship between agricultural labour productivity and the number of employees whose relationship is almost weak. This means that in the example of Macedonia, a growth of a gross domestic product created by agricultural sector is particularly important for a growth of labour productivity. Furthermore, it can be concluded that Macedonia is characterized mainly by low agricultural labour productivity, which has seen a slight increase in recent years. Although the analysis showed a low level of education, the high potential for agricultural production, as well as the availability of educational facilities and functional education system in the field of agriculture can be cited as main advantages and opportunities for agricultural productivity growth.

The initial recommendation is that attention should be focused on increasing the production of those products which are integral elements of agricultural growth and also significant for this growth. This involves defining an appropriate group of macroeconomic policies that correspond to the specific economic conditions in the Macedonian economy, applying technology that is appropriate for existing conditions in agriculture, as well as a communication infrastructure, marketing and institutional arrangements. On the other hand, agricultural population constitutes the most upward mobility part of the population and workforce. With a reduction of agricultural population, real opportunities for intensifying agricultural production are created, and in the place of a reduced contingent of agricultural population, modern technology and innovations for agricultural production are introduced. All this leads to an increase in total agricultural production and productivity.

Agricultural production can be increased by improving technological equipment, increasing the level of technological efficiency, retraining and enabling employees to use modern technology in agriculture. Also, special attention should be paid in finding ways to increase the correlation between agricultural labour productivity and GDP realized in this sector in Macedonian economy, due to a positive correlation observed in the analyzed period. The general productivity and economy of agricultural sector remains to be significantly hampered by serious structural weaknesses. In that direction, specific measures and investments should be undertaken for improving agricultural labour productivity, i.e. increasing the average net value added per unit of labour engaged in agriculture. One of the key aspects that leads to increased agricultural labour productivity is mainly directed towards improving production efficiency and introducing new technology in production with emphasis placed on the human factor (changing the size and compactness of the production capacities, launching new agricultural businesses by young farmers, investing in a modernization of the available technical equipment, encouraging an entry of direct foreign investments in the agro-food sector, etc.). This would also mean a transfer of non-productive workers to other sectors. The other aspect relates to investments for appropriate education, as well as training workers for a proper use of the modern technology. The lack of adequate education staff is a clear signal of the need for improving the educational system in order to attract quality labour force in direction of increased agricultural production and increased agricultural labour productivity.

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Degree of Competency in Practicing Basic Education for Kindergarten Teachers from the Point of View of the Teachers Themselves

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Abstract

The study aimed to identify the degree of practicing the basic educational competencies of kindergarten teachers from the point of view of the teachers themselves. The study sample consisted of 125 randomly selected teachers. The researcher used the questionnaire as a tool of study consisting of 50 paragraphs divided into five areas (personal competencies, competencies for the management of the classroom and interaction with children, competencies of teaching skills, educational competencies for human relations, and the field of professional growth). After the statistical analysis was performed, the study reached the following results: There were statistically significant differences at $\alpha \leq 0.05$ between the bachelor degree on the one hand and the diploma and postgraduate studies on the other hand. The differences were in favor of Bachelor of personal competencies. Also, there is the existence of statistical significant difference ($\alpha \leq 0.05$) between 10 years and more and 5-10 years. This difference is based on the benefit of 10 years and more educational competencies for the field of human relations. The researcher recommended that training courses should be organized as this would contribute to increasing the efficiency and skills of kindergarten teachers.

Keywords: Educational competencies, Kindergarten teachers, teaching skills

Introduction

Childhood is one of the most important stages in human life, in which the characteristics of personality are determined and are more susceptible to the different factors and circumstances surrounding it. Therefore, attention has been given to childhood as it is the best stage of education and in gaining experience. This, however, would help children to achieve better learning at

different stages of education. It is an educational stage necessary to pave the way for subsequent educational process. Also, it is the strong bridge to bring children from the family atmosphere to the atmosphere of the school.

In the 21st century, attention to early childhood has become one of the priorities of the educational goals at the international and Arab levels (Abu Harb, 2005). Therefore, the educational programs is focused on preparing the children's teacher and providing them with the necessary skills needed to deal with knowledge on the one hand and with children on the other hand. Colleges and universities are concerned with the preparation of pre-school teachers in the design of educational programs according to the competencies and skills. However, this is based on the fact that teachers will use these skills and competencies to develop the abilities of children in the course of their education (Quebec, 2002).

There is no doubt that the distinguished teacher should possess the basic educational competencies that enable her to help children adapt to society, prepare them to overcome the difficulties of the environment around them, and develop their abilities to deal with the world's rapid variables; hence, this is in addition to their role in the preparation of academic and for formal education in the school (Mardan, Sharif & Abdel-Al, 2004).

Holly and Gohar (2004) pointed out that the method developed in the educational process of kindergarten teachers is based on the thought, breeding, and planning of the program by the parameter, freedom and play, selection, discovery, experimentation, and self-learning by the child. This is performed based on an approach that is flexible enough to meet the individual needs of children and based on a plan of action to introduce concepts, knowledge, and skills that the child learns through play and discovery rather than to teach the child. It also entails an organized and encouraging learning environment that gives the child freedom of movement, selection, experimentation, and discovery. Furthermore, educational tools and games that stimulate the child's spontaneity, makes him to enjoy his freedom. It also motivates him to imagine, discover, and investigate.

Al-Hooli (2001) also pointed out that the method developed in the educational process of kindergarten teachers is based on providing an area of interaction and communication between the child and the other children, between the child and the teacher, and between the child and his peers. Thus, this encourages the child to be independent, self-confidence, and possess respect. To develop self-confidence, the courage to think in a different, renewed, and complex manner is required. Also, a close relationship exists between kindergarten and the home so as to provide parents with information on how to stimulate children's thinking to make the most of this relationship.

In view of the importance of this stage and its obvious impact on the growth of children in all aspects, the teacher's attention was first and second

parameter for these children. Therefore, the prevailing trend is that kindergartens are qualified teachers without teachers. Women are closer to men based on nature. At the early stage of childhood, it is important to be closer to the man so as to understand him. Therefore, it is more natural to know the most appropriate way to deal with him not far from the atmosphere he made at home. Thus, women generally have love for children and their ability to accept them. The most important elements to take on this task is the need to know the psychology of childhood in a way that enables them to identify children and know their needs and tendencies so as to work to meet and satisfy them (Mardan et al., 2004).

The kindergarten teacher is the backbone and he/she plays a central role in achieving sound education with its capabilities and creative potential and the ability to discover the child and his inner energies. The programs of kindergartens and daily activities and educational goals cannot be accomplished except by the specialized teacher awareness of the requirements of early childhood and its basic needs for the role of education in kindergarten. Thus, this requires that we stop in front of what the teacher knows about the method developed, how to work, implementation, and the degree of ownership and exercise of educational competencies necessary to achieve the goals of the educational process of kindergarten. Hence, this is exactly what this study is trying to research.

Study Problem and Questions

The problem of the study emerged through the researcher's perception that the educational competencies of kindergarten teachers are low, through her personal observations that she has been the director of a private school for decades, and also through her meetings with the teachers of the kindergarten stage. However, this prompted the researcher to study the educational competencies that must be available to kindergarten teachers. It has also helped them to raise the degree of exercise of the basic educational competencies due to the stage of the impact on the development of the child's development which is comprehensive and balanced. From the perspective of the researcher, the role of kindergartens is not limited to the development of the child's skills and preparation for a larger society; rather, it has an important educational role, such as that of the school. Also, it is concerned with building a good citizen that builds a strong young nation in the future.

Therefore, this study aims to reveal the importance of some of the basic educational competencies from the point of view of teachers and their practice of these competencies by answering the main question:

What is the degree of practice of the basic educational competencies of the kindergarten teachers from the point of view of the teachers themselves?

From the above question, the following sub-questions was drawn:

- Are there any statistically significant differences at the level of ($\alpha \leq 0.05$) the exercise of the basic educational competencies of the kindergarten teachers from the point of view of the teachers themselves due to the variable of the training course?
- Are there any statistically significant differences at the level of ($\alpha \leq 0.05$) exercise of the basic educational competencies of kindergarten teachers from the point of view of the teachers themselves due to the variable of experience?
- Are there any statistically significant differences at the level of ($\alpha \leq 0.05$) the exercise of the basic educational competencies of the kindergarten teachers from the point of view of the teachers themselves due to the variable of the scientific qualification?

The Importance of the Study

The importance of this study came from two aspects:

The theoretical importance of this study which is summarized based on the importance of preparing kindergartens teachers and raising the degree of their practice of basic educational competencies. The importance of this study also stems from the need to discuss the subject of the expected benefit added by the results of scientific knowledge in this area, and the importance of educational competencies and the need to acquire each of them. Given the special nature of this important age of the child's life, and the developmental, social and skill requirements that the teacher seeks to satisfy the child at this stage, only a qualified and well prepared teacher should teach the children. They have to be well prepared professionally and academically in order to meet all the requirements and satisfy the basic needs of pre-school children.

The Practical Importance: This study may provide a frame of reference and an introduction to future research and studies in the field of educational competencies of kindergarten teachers, as well as opening up the possibility for other researchers in the future to take care of this subject and study it in other aspects. The study provides a tool that can be used in future studies. Thus, this is in addition to providing quantitative data and information about the nature of the relationship between the variables of the study. It also provides a theoretical framework of concepts, data, and information. This study should be a scientific study in addition to the Arabic library in general and to the Jordanian library in particular.

Procedural Definitions

Competencies: Competencies are defined as a set of information, experiences, skills, activities, and behavior patterns that kindergarten teachers possess, which teachers are supposed to exercise during the pre-school

educational process and measured to the degree obtained by the examinee on the scale prepared for the purposes of this study.

Kindergarten: It is defined as an educational institution licensed by the Ministry of Education according to certain specifications. It is responsible for the development of the abilities of children in the age group 3-5 years in order to achieve growth, physical, mental, psychological, emotional, and social development.

Kindergarten Teacher: It is defined as an educational figure chosen very carefully through a set of special standards and physical, mental, social, ethical and emotional characteristics that is appropriate for the child education profession, and has received preparation and integrated training in university colleges to take responsibility of educational work in pre-school institutions.

The Limitation of the Study

The current study is limited to the following limits:

Spatial Boundaries: Riyadh Private Education, in the Capital Governorate of Amman, Jordan.

Time Limits: During the academic year 2017/2018.

Human Boundaries: Private kindergarten teachers in private education (125).

Theoretical Framework and Previous Studies

Theoretical Framework

Educational Competencies: This can be defined as a set of abilities and skills possessed by the teacher, which enables him to perform his duties and roles and responsibilities to the best of his performance. However, this is reflected on the educational process as a whole, especially in terms of success and ability of the teacher to transfer information to students. The teacher may do so through planning and preparation of the lesson, and through other daily and applied teaching activities, which are evident in the behavior and educational preparation of the teacher within and outside the classroom (Karam, 2002).

The trend of educational competencies is one of the most recent trends in teacher education and training programs over the last three decades. Many educators have adopted enough knowledge in teacher education programs. They have started in American society as a cultural movement in which the teacher's performance is evaluated through the behavior of the learner. However, the attention shifted to the evaluation of the teacher through the programs of preparation and training, which was based on strengthening the educational and psychological foundations. This trend has spread in the form of a large movement known as the movement of teachers on the basis of competencies. In addition, it is based on the idea that the competent teacher is the one who possesses a set of competencies capable of performing tasks

related to his different roles, and performing them with a certain level of ability to perform (Holly, Jawhar & Al-Qallaf, 2007).

Consequently, the importance of educational competencies in the preparation of teachers has touched a lot of educational researchers. Karam (2002) defined educational competencies as the ability of the teacher to perform a specific behavior related to his or her teaching tasks, and consists of specific knowledge, skills, attitudes and values directly related to teaching, expressed in his or her words and actions and performed with an appropriate degree of proficiency for the purpose of achieving the desired result. Murtada (2001) defined it as the ability of the teacher to perform a work or behavior in the educational situation, whether this work or behavior is cognitive or physical, or performance has an appropriate degree of perfection to connect to the desired results and to point less.

In the course of the competencies of the kindergarten teacher in the various studies and literature examined by the researcher, some of the basic competencies were chosen in an attempt to include all the main aspects required by the kindergarten teacher to be included here in the theoretical framework. In this section of the study tool, the researcher found the following classification of competencies:

- **Personal competencies.**
- **Competencies in the management of separation and interaction with children.**
- **Skills of teaching skills.**
- **Educational competencies for the field of human relations.**
- **Professional growth competencies.**

Here, each subset of sub-competencies is formulated in the form of acts of prescriptions and practices required in the kindergarten teacher.

Personal Competencies: The level of performance of the kindergarten teacher based on the characteristics. The most important personal competencies mentioned in the research and literature was as follows (Karrar, 2000):

- They should be committed to ethics to be a role model to the children, enjoy patience, be calm, and emotionally stable.
- They should have the ability to understand others and to deal with children.
- They should be intelligent and to be always present.
- They should be sound physically and have the fitness to allow movement and activity to follow activities, in addition to be free of infectious diseases for the safety of the child.
- They should take care of their appearance and ensure the simplicity of their clothing, in order to become an example to the children and attract them in the beauty of their appearance and simplicity.

The competencies of the Department of Separation and Interaction with Children: It means the skills of communication with children and interaction with them and their leadership. It also refers to the ability to control their behavior in the classroom without notice that they are restricted, and make them want to be in class and with the teacher on their own. Thus, the most important of these competencies include:

- Provide opportunities for children to form social relationships with their peers in kindergarten.
- Provide opportunities for each child to be able to express himself and his potential.
- Seeks to affirm the spirit of the group and the dissemination of cooperative work among children through the creation of means together or by arranging the classroom, hygiene, or collective games and so on.
- Create an atmosphere of tranquility and fun in the learning environment using the songs and games that separate the experience and the use of attractive colors that are comfortable.
- Communicate effectively with children verbally by creating an individual dialogue or by listening to them with interest, and communicating non-verbally by looking at the child, raising, embracing, smiling, and through other means of communication.

Skills of Teaching: This has to do with the reality of the actual level of performance of the kindergarten teacher and their skills in the classroom, through which the teacher can attract the child's educational attention and respond to the different experiences and activities in order to transfer the aspects of knowledge that the child needs in light of the stage. Thus, these include:

- Participation of children in the selection of topics of activity to ensure their interaction with them and their attention.
- Create an atmosphere of love and familiarity.
- Diversity of educational attitudes in a way that motivates children's motivation to learn.
- Organizing the educational environment in a way that motivates children to learn.
- Positive reinforcement of non-traditional children's responses is used and admiration is expressed for their innovations.

Educational Competencies for the Field of Human Relationship: This refers to the skills of interaction with others and with children and the establishment of social relations that enrich the process of education, and the ability to agree with others. The most important of them include (Sulaimani, 2006):

- To strengthen the religious spirit in children.
- To interact with the families of children in their visits to kindergarten.

- To establish positive relationships with colleagues at work.
- Interacts with the problems of children and work to help them in their participation and also emotionally.
- To enjoy the children for a long time and make them feel that they are the focus of attention.

The Competencies of Professional Growth: These competencies indicate the ability of the teacher to perform the tasks of education with a high level of proficiency with the skills of self-development and motivation for development and keeping abreast of developments in the field of education. Thus, the most important of which are: (Mr., 2013):

- Being fluent in Arabic reading and writing and proper use.
- Keep abreast of emerging information concerning the characteristics of children's growth.
- Always wish to innovate and renew continuous educational programs.
- Appropriate tools (observation, interview, scales) should be used in children's assessment and identification.
- Diversity in teaching and learning methods that helps to overcome the boredom that afflicts or affects children.

The researcher believes that the success of the teacher in her work depends not only on the availability of her competencies, but must succeed in harnessing these competencies and using them all effectively. Thus, this can be achieved with the help of the strength of her faith in her educational mission and the awakening of her conscience and the strength of her will and determination. This is in addition to the strength of her motivation and her desire towards her profession.

Previous Studies

The Kiesner study (2008) aimed to identify ways to develop teacher preparation programs and increase their educational competencies at the University of Pennsylvania in the light of contemporary trends in early childhood education. The study sample consisted of 322 teachers, 14 university teachers, and 4 faculty members. The researcher used the questionnaire as a study material, which was divided into several dimensions. The study reached a number of results. The most important of these results are the insufficient period of practical application of the teaching profession and providing the necessary skills for teaching, Increased follow-up, and observation. During its application in kindergartens, teachers were able to focus on feedback to educational situations, and to increase collaboration between university supervisors and teachers in the assessment process.

Al-Muzayen and Gharab (2005) studied the aim of determining the most basic competencies of kindergarten teachers in Gaza Governorate. From the point of view of the directors of Riyadh, the researchers used the

questionnaire as a tool for collecting data. The questionnaire consisted of 48 competencies divided into four areas: cognitive skills, Emotional and physical competencies, and the field of professional competencies. The questionnaire was applied to 120 managers from Riyadh. The study stated that all competencies received a high percentage: Emotional, mental cognitive competencies.

The study of Yassin (2003) aimed at determining the general basic educational competencies among kindergarten teachers in government kindergartens in Riyadh city, and to ascertain the degree of availability in each parameter of the study sample. The researcher used a note card containing 58 skills, divided into two areas: 78 teachers in 7 government kindergartens in the city of Riyadh. The researcher found the following results: The performance of kindergarten teachers for teaching competencies is weak, and the degree of availability of personal competencies in Kindergartens' parameters are not different in terms of specialization or qualification. Also, the degree of availability of educational competencies among kindergarten teachers is not different according to the years of experience or courses in which the teachers were enrolled.

Selven (2003) conducted a study aimed at identifying the basic performance competencies and their availability in kindergarten teachers in Pennsylvania. The study sample consisted of a group of specialists in the field of teacher training. The researcher prepared a list of competencies and reached a list that included (61) adequacy, divided into seven aspects. The observation card was applied to a sample of 150 teachers of kindergarten teachers in the State. Their competencies were measured using the experimental method and the study reached a number of results. The study also found that there is no relationship between the number of years of work experience in kindergarten, and the availability of basic skills in the performance parameters.

Al-Shibani (2001) conducted a study aimed at identifying the problems facing public and private kindergartens in the Republic of Yemen from the point of view of the Riyadh educators. The researcher used a questionnaire consisting of 75 paragraphs divided into eight fields. The study found the following results: the most important problems are the problems related to the state institutions concerned with the rehabilitation of nannies. The eight areas differed in the order in terms of the importance of the problems, as follows: The field of state institutions concerned with the rehabilitation of nannies, Equipment field, The field of curriculum and educational activities, financial field, building area, conductors, educational supervision, kindergarten management and organization. However, the games did not show the results of the existence of differences of statistical significance between Riyadh government and eligibility. Also, the researcher recommended the need to

develop training programs for the rehabilitation of female teachers during the service.

Kemp (2000) studied the aim of identifying the impact of a proposed program based on educational competencies on the development of the skills of kindergarten teachers in Iowa. The sample consisted of 804 teachers divided into two groups. The first group consisted of 453 teachers. In the method of learning based on competencies through a training program designed, the second consisted of 315 teachers learned in the traditional way. The experiment lasted for a full academic year, and it used the researcher interview with the sample four times to know their directions towards their preparation program. Due to the weakness in the teacher preparation program in terms of non-eligibility in teaching, there was no change and significant impact of the theoretical materials that were studied during the year, Hence, the following was considered: the impact of the materials of teaching methods, the emphasis on the theoretical side and the lack of emphasis on the practical side, the time allocated for practical application is inadequate, and insufficient teaching classroom management. This has made the researcher to seek to build an integrated program in terms of objectives, content, methods, teaching aids, and evaluation patterns according to the experimental method.

Method and Procedures

Study Approach

In this study, the researcher used the analytical descriptive approach to suit the study.

The Study Sample

The sample of the study was randomly selected. The sample consisted of 125 female teachers of special education kindergartens in Amman Governorate as shown in Table 1.

Table 1. Frequency and percentages of the study sample by study variables

	Categories	Frequency	Percentage
Training courses	yes	73	58.4%
	no	52	41.6%
Work experience	Less than 5years	40	32%
	From 5 to 10 years	52	41.6%
	More than 10 years	53	26.4%
Scientific qualification	Diploma	39	31.2
	Bachelor	54	43.2
	Higher studies	32	25.6
	Total	125	100%

Tool Validation

The credibility of the questionnaire was based on the presentation of a group of arbitrators specialized in the curriculum, methods of teaching, measurement, evaluation, and educational administration of 10 arbitrators. Also, the necessary amendments were recommended by the arbitrators according to their opinions.

Stability of the Study Instrument

In order to ensure the stability of the study instrument, the test-retest was verified by applying the scale and it was applied after two weeks to a group outside the study sample consisting of 30 parameters. After then, the Pearson correlation coefficient was calculated between their estimates at both times.

The coefficient of consistency was also calculated in the internal consistency method according to the Cronbach alpha equation. Table 2 shows the coefficient of internal consistency according to the Cronbach alpha equation and the regression coefficients for the domains and instrument as a whole.

Table 2. Cronbach alpha consistency coefficient and repeatability of the fields and the total score

The field	Repetition stability	Internal consistency
Personal competencies	0.87	0.74
Competencies in the management of the class and interaction with children	0.89	0.78
Teaching skills competencies	0.86	0.81
Educational competencies for the field of human relations	0.87	0.79
Professional Growth Competencies	0.83	0.87
Total score	0.90	0.89

Statistical Standard

The five-dimensional Lycert scale was adopted to correct the study tools by giving each of its paragraphs one of its five degrees (always, often, sometimes, rarely, never). It represents digitally (5, 4, 3, 2, 1) respectively. Thus, the following metric was adopted for the purposes of analyzing the results:

From 1.00 to 2.33 low

From 2.34 to 3.67 average

From 3.68 to 5.00 large

And so on

The scale is calculated by using the following equation:

The upper limit of the scale (5) - The minimum scale (1)

Number of categories required (3)

$$5-1 = 1.33$$

3

And then the answer (1.33) is added to the end of each category.

View and Interpret Results

To answer the first question “What is the degree of the exercise of the basic educational competencies of the kindergarten teachers from the point of view of the teachers themselves?”, the arithmetical averages and standard deviations of the degree of exercise of basic educational competencies of kindergarten teachers were extracted from the point of view of the teachers themselves. The table below illustrates this.

Table 3. Mathematical averages and standard deviations of the degree of exercise of the basic educational competencies of kindergarten teachers from the point of view of the teachers themselves are ranked descending by arithmetic averages

Rank	Number	The field	Average	Standard Deviation	Degree
1	1	Personal competencies	4.57	0.403	High
2	2	Teaching skills competencies	4.50	0.395	High
3	3	Special competencies Management of the classroom and interaction with children	4.41	0.379	High
4	4	Educational competencies for the field of human relations	4.41	0.444	High
5	5	Professional Growth Competencies	4.20	0.395	High
		The total degree	4.42	0.320	High

Table 3 shows that the mathematical averages ranged between 4.20-4.57, where the personal competencies ranked first with the highest average score of 4.57. This may be attributed to the fact that personal competencies are the first factors affecting the success of kindergarten teacher and so on. The teacher must be characterized by the strength of personality, self-confidence, intelligence and the presence of intuition, while the competencies of professional growth came in last place with an average of 4.20. This is due to the fact that professional growth needs to keep abreast of development and cooperation with other institutions and the pursuit of innovation. This requires the ability, time, effort and ability to keep abreast of the continuous development and flow of knowledge.

The arithmetical averages and the standard deviations of the estimates of the individuals of the study sample were calculated according to the paragraphs of each field separately, as follows:

First: Personal Competencies

Table 4. The arithmetical averages and standard deviations of the paragraphs related to personal competencies are ranked descending by arithmetical averages

Rank	Number	The paragraph	Average	Standard Deviation	Degree
1	4	Interested in the appearance and simplicity of clothing and her modesty	4.79	.408	High
2	5	Healthy, fit and free of diseases	4.74	.443	High
3	1	Characterized by strong personality and self-confidence	4.69	.465	High
4	6	Committed to Islamic ethics in word and deed	4.59	.597	High
5	3	Intelligence, presence of the mind, and the power of observation	4.54	.589	High
5	9	They are accepted by children and met with a smiley face	4.54	.589	High
5	10	Has a good persuasive ability	4.51	.736	High
8	8	It has a clear voice tone and a proper pronunciation of the characters	4.44	.665	High
9	2	Love for knowledge and seek to develop herself	4.		High
10	7	Enjoy patience, calmness and emotional control	4.28	.779	High
		Personal competencies	4.57	.403	High

Table 4 shows that the arithmetical averages ranged from 4.28-4.79. Paragraph 4, which states that "the appearance and simplicity of clothing and its concentration", is ranked first with an average of 4.79. The appearance contributes to the reassurance of the child and the comfort and love of the teacher and kindergarten. Paragraph 7 which reads "enjoy patience, calm and emotional control" came at the last rank with an average of 4.28. This may be due to the fact that the teacher may suffer from some physical and psychological stress under the current circumstances in addition to the pressures of work and the teaching burden. Thus, this requires effort, time, and ability to adapt and deal with these pressures, leading to the difficulty of emotional control in some cases and the arithmetic average of personal competencies as a whole (4.57).

Second: Competencies in the Management of Separation and Interaction with Children

Table 5. The arithmetical averages and standard deviations of paragraphs related to the competencies of classroom management and interaction with children are ranked descending by arithmetical averages

Rank	Number	The paragraph	Average	Standard Deviation	Degree
1	19	The child returns to the cleanliness of the classroom and maintain the things in it	4.74	.443	High
2	13	Communicate effectively with children verbally and non verbally by listening to them, nurturing, embracing, and through other means of communication	4.63	.484	High
3	20	Accept the mistakes of children patiently and do not resort to punishment from the first mistake, but gradually alerted then b Resurrection	4.46	.501	High
4	11	Creating opportunities for children to form social relationships with their peers in kindergarten	4.44	.665	High
5	16	Create an atmosphere of tranquility and fun in the learning environment using songs, colors and games	4.40	.793	High
6	15	She appreciates imaginative play and laughs with children and takes part in the game	4.38	.657	High
7	14	Seeks to affirm the spirit of the community and the dissemination of cooperative action among children	4.37	.666	High
8	12	Provide opportunities for each child to be able to express himself and his potential	4.32	.655	High
9	18	Allow children to move inside the classroom without disturbing the system	4.22	.682	High
10	17	The reception of each child in the morning is improved by embracing, smiling and welcoming	4.17	.669	High
		Competencies in the management of separation and interaction with children	4.41	.376	High

Table 5 shows that the mathematical averages ranged between 4.17-4.74, Paragraph 19, which states that "the child returns to clean the chapter and maintain the things in it", came in the first place with an average of 4.74. The

researcher stated that the socialization of the child calls for the need to pay attention to hygiene because cleanliness is one of the distinguishing features of the higher societies, and heavenly religions encourage hygiene so that children can practice their learning and hobbies in a clean, healthy, and disease-free environment. "The reception of each child in the morning is improved by embracing, smiling and welcoming" was the last rank with an average score of 4.17. This may be due to the fact that the children attend kindergarten in the early morning in the form of tours. They may also attend a group that was received by another teacher and the feeling of some children not wanting to attend kindergarten in the early morning hours in addition to the large number of students in some kindergartens. The arithmetical average of competencies for classroom management and interaction with children as a whole was 4.41.

Third: Qualifications of Teaching Skills

Table 6. The arithmetical averages and standard deviations of paragraphs related to the competencies of teaching skills are arranged in descending order by arithmetical averages

Rank	Number	The paragraph	Average	Standard Deviation	Degree
1	23	She can create an atmosphere of love and familiarity	4.70	.462	High
2	21	Create an atmosphere that helps children learn	4.68	.468	High
3	22	Choose appropriate activities for children's levels and ages	4.58	.469	High
4	27	Improved time management and distribution between exercise, rest and tranquility	4.54	.589	High
5	30	Children participate in selecting activity topics to ensure that they interact with them and their attention	4.53	.501	High
6	24	Activities that support the behavioral values of children	4.50	.591	High
7	25	Encourages children to be self-reliant	4.50	.659	High
8	29	Diversity of educational attitudes in a way that stimulates children's motivation to learn	4.45	.718	High
9	28	Positive reinforcement of non-traditional children's responses is used and admiration is expressed for their innovations	4.39	1.033	High
10	26	Choosing activity topics from real life so that your child can easily absorb and interact with them	4.34	.669	High
		Teaching skills competencies	4.50	.395	High

Table 6 shows that the mathematical averages ranged from 4.26-4.70. Paragraph 23, which states that "you can create an atmosphere of love and familiarity," is ranked first with an average of 4.70. Therefore, the love and the old enrich the psychological life of the child and contribute to the stability and supply of energy. This enables him to live with confidence and helps him to be able to overcome the frustration and despair. Hence, this is what the kindergarten teacher seeks to achieve in children. Paragraph number 26 which states that "Choosing activity topics from real life so that your child can easily absorb and interact with them" came at the last rank with an average of 4.26. In learning different and sophisticated things quickly, one would need to exert more energy in order to simplify everything for the child so he can be able to absorb them. The arithmetic average of teaching skill competencies as a whole was 4.50.

Fourth: Educational Competencies of the Field of Human Relations

Table 7. The arithmetical averages and standard deviations of the paragraphs related to the educational competencies of the field of human relations are ranked in a descending order according to the arithmetic averages

Rank	Number	The paragraph	Average	Standard Deviation	Degree
1	40	She listens to the children and make them feel that they are the focus of her attention	4.64	.574	High
2	31	Works to strengthen the religious spirit in children	4.53	.501	High
3	32	She maintains positive relationships with her colleagues at work	4.42	.496	High
4	35	Benefit from the experiences of the manager and supervisors	4.40	.730	High
5	34	Working with management and colleagues in team spirit	4.39	.659	High
6	39	Integrate and interact with children during the presentation of experiences	4.39	.728	High
7	33	Interact with the families of the children in their visits to the kindergarten	4.38	.686	High
8	36	Benefit from the experiences and guidance of their colleagues	4.34	.684	High
9	38	Treats children with a sense of humor and fun	4.34	.647	High
10	37	Cooperate with and communicate with families of children	4.23	.763	High
		Educational competencies for the field of human relations	4.41	.444	High

Table 7 shows that the mathematical averages ranged between 4.23-4.64. Paragraph 40, which states that "children listen and feel their focus," is ranked first with an average of 4.64. This may be due to playing a key role in the process of learning and communication. This is because it is the art of the highest and the highest responsibilities that falls on the teacher in kindergartens in order to activate the process of dialogue, communication, and learning. Paragraph 37, which reads "cooperate with families of children and communicate with them" ranked last with a mean of 4.23. This may be due to the fact that some families have parents who are employed in different jobs. They had the time and opportunity to visit the kindergarten and communicate with the teacher and also discuss the well being of their child. The mathematical average of educational competencies for human relations as a whole was 4.41.

Fifth: Vocational Growth Competencies

Table 8. The arithmetical averages and standard deviations of paragraphs related to occupational growth competencies are ranked in a descending order by arithmetical averages

Rank	Number	The paragraph	Average	Standard Deviation	Degree
1	41	Arabic is fluent in reading and writing	4.90	.296	High
2	42	Diversity in teaching and learning methods	4.38	.579	High
3	50	Always wish to innovate in educational programscolleagues at work	4.21	.699	High
4	43	Have full knowledge of children's rights and the ability to defend them	4.18	.673	High
5	48	Use appropriate tools in children's calendars and characterize their personalities	4.17	.811	High
6	44	She is keen to keep up with all the new work with children	4.10	.811	High
7	49	Interact with the families of the children in their visits to the kindergarten	4.10	.551	High
8	46	She is keen to update information about the curriculum in kindergarten	4.06	.640	High
9	47	Cooperate with other institutions related to child education and coordinate educational programs for children's education	4.01	.713	High
10	45	Make sure to take advantage of early childhood education programs	4.91	.635	High
		Professional Growth Competencies	4.20	.395	High

Table 8 shows that the mathematical averages ranged between 3.91-4.90. Paragraph 41, which states that "Arabic proficiency is read and written", came in the first place with a mean average of 4.90. This may be due to the fact that the language of Arabic represents the identity and language of the Arab nation. It is the language of life, and this means it must be mastered and taught to the child correctly and properly. Paragraph 45, which reads "keen to benefit from the programs of early childhood education," ranked last with a mean average of 3.91. This may be due to the fact that the programs for childhood are few (within the researcher's knowledge). Sometimes, they are held at times with the children. This, therefore, makes it difficult to leave them to participate in programs, courses, and seminars that deal with early childhood. The arithmetic average of occupational growth competencies as a whole was 4.20.

- Are there any statistically significant differences at the level of $\alpha \leq 0.05$ based on the exercise of the basic educational competencies of the kindergarten teachers from the point of view of the teachers themselves due to the variable of the training course?

To answer this question, the arithmetic averages and standard deviations of the degree of exercise of the basic educational competencies of the kindergarten teachers were extracted from the teachers' point of view according to the variable of the training course. To illustrate the statistical differences between the mathematical averages, the T test was used.

Table 9. The statistical averages, standard deviations and T-test of the impact of the training course on the degree of exercise of the basic educational competencies of the kindergarten teachers from the point of view of the teachers themselves

	Training Course	Number	Average	Standard Deviation	T value	Degree of freedom	Statistical significance
Personal competencies	yes	3	4.68	.349	4.057	123	.000
	No	2	4.40	.420			
Competencies in the management of separation and interaction with children	yes	3	4.53	.376	4.189	123	.000
	No	2	4.26	.324			
Teaching skills competencies	yes	3	4.61	.368	3.987	123	
	No	2	4.34	.380			
Educational competencies for the field of human relations	yes	3	4.60	.410	6.545	123	.000
	No	2	4.14	.343			
Professional Growth Competencies	yes	3	4.29	.461	3.171	123	.002
	No	2	4.07	.223			

Total score	yes	3	4.54	.298	5.782	123	.000
	No	2	4.24	.266			

Table 9 shows the existence of statistically significant differences $\alpha \leq 0.05$ due to the impact of the training course in all fields and based on the total scores. The differences were in favor of those who participated in the training course. This may be due to the fact that the training courses enrich the outcome of cognitive teachers and contribute to the development of their skills and awareness of educational developments. Also, this makes it possible for them to be able to identify the latest trends in the field of kindergartens.

- Are there any statistically significant differences at the level of $\alpha \leq 0.05$ based on the level of exercise of the basic educational competencies of kindergarten teachers from the point of view of the teachers themselves due to the variable of experience?

To answer this question, the arithmetical averages and standard deviations of the degree of exercise of the basic educational competencies of the kindergarten teachers were extracted from the teachers' point of view according to the variable of experience. The table below illustrates this.

Table 10. Mathematical averages and standard deviations of the degree of practice of basic educational competencies of kindergarten teachers from the point of view of the teachers themselves according to the variable of experience

	Categories	Number	Average	Standard Deviation
Personal competencies	Less than 5 years	40	4.43	.473
	From 5 to 10 years	52	4.57	.303
	More than 10 years	33	4.73	.398
	The total	125	4.57	.403
Competencies in the management of separation and interaction with children	Less than 5 years	40	4.31	.444
	From 5 to 10 years	52	4.39	.293
	More than 10 years	33	4.58	.372
	The total	125	4.41	.379
Teaching skills competencies	Less than 5 years	40	4.36	.347
	From 5 to 10 years	52	4.44	.383

	More than 10 years	33	4.75	.352
	The total	125	4.50	.395
Educational competencies for the field of human relations	Less than 5 years	40	4.41	.401
	From 5 to 10 years	52	4.29	.466
	More than 10 years	33	4.57	.413
	The total	125	4.41	.444
Professional Growth Competencies	Less than 5 years	40	4.17	.218
	From 5 to 10 years	52	4.19	.304
	More than 10 years	33	4.25	.629
	The total	125	4.20	.395
Total score	Less than 5 years	40	4.34	.319
	From 5 to 10 years	52	4.38	.292
	More than 10 years	33	4.58	.318
	The total	125	4.42	.320

Table 10 shows an apparent discrepancy in the arithmetical averages and standard deviations of the degree of exercise of the basic educational competencies of the kindergarten teachers from the point of view of the teachers themselves due to different categories of the variable of experience. To illustrate the significance of the statistical differences between the arithmetic averages, mono-variance analysis was used as shown in Table 11.

Table 11. Analysis of the mono-variance of the impact of experience on the degree of exercise of the basic educational competencies of the kindergarten teachers from the point of view of the teachers themselves

	The source	Total squares	Degrees of freedom	Average squares	P value	Statistical significance
Personal competencies	Between groups	1.658	2	.829	5.472	.005
		18.478	122	.151		
	Inside the groups	8	124			
	Total	20.136				
Special competencies Management of the classroom and interaction with children	Between groups	1.295	2	.647	4.795	.010
		16.472	122	.157		
	Inside the groups	2	124			
	Total	17.767				
Teaching skills competencies	Between groups	3.162	2	1.581	11.946	.000
		16.146	122	.132		
	Inside the groups	6	124			
	Total	19.308				
Educational competencies for the field of human relations	Between groups	1.570	2	.785	4.196	.017
		22.825	122	.187		
	Inside the groups	5	124			
	Total	24.395				
Professional Growth Competencies	Between groups	.098	2	.049	.312	.733
		19.202	122	.157		
	Inside the groups	2	124			
	Total	19.301				
Total score	Between groups	1.161	2	.580	6.133	.003
		11.544	122	.095		
	Inside the groups	4	124			
	Total	12.705				

Table 11 shows statistically significant differences at the level of $\alpha \leq 0.05$ due to experience in all fields and in the tool as a whole except for professional growth competencies. Also, it shows statistical significant differences between statistical averages as shown in Table 12.

Table 12. Post-comparisons in a manner that explains the impact of experience on the degree of the exercise of the basic educational competencies of kindergarten teachers from the point of view of the teachers themselves

	Experience	Average	Less than 5 years	From 5 to 10 years	More than 10 years
Personal competencies	Less than 5 years	4.43			
	From 5 to 10 years	4.57	0.15		
	More than 10 years	4.73	0.30	0.15	
Competencies in the management of separation and interaction with children	Less than 5 years	4.31			
	From 5 to 10 years	4.39	0.07		
	More than 10 years	4.58	0.26*	0.19	
Teaching skills competencies	Less than 5 years	4.36	4.44		
	From 5 to 10 years	4.75	0.40 *	0.31*	
	More than 10 years	4.41			
Educational competencies for the field of human relations	Less than 5 years	4.41			
	From 5 to 10 years	4.29	0.12		
	More than 10 years	4.57	0.16	0.28 *	
Total score	Less than 5 years	4.34			
	From 5 to 10 years	4.38	0.04*		
	More than 10 years	4.58	0.24*	0.20*	

* Function at the level of significance $\alpha \leq 0.05$.

Table 12 shows the following:

- There are statistically significant differences between less than 5 years and 10 years and more. The differences for the benefit of 10 years and more in personal competencies, and competencies for the management of separation and interaction with children may be attributed to the more time and experience of dealing with children. This can be seen from the mastery of competencies, especially personal competencies, which are the basis for creating an atmosphere of tranquility and effective classroom interaction.

- There are differences of statistical significance between 10 years and more on the one hand and each of less than 5 years, and 5-10 years on the other hand. The differences came in favor of 5-10 years in the competencies of teaching skills and the overall degree. Thus, this may be due to the fact that the cognitive and skillful outcome of this group is still firmly rooted in memory and it exercises its skills on the ground. This is in addition to the fact that the members of this sample are more numerous than the other categories.

- The existence of differences of statistical significance between 10 years and more and from 5-10 years. The differences in favor of 10 years and more educational competencies for the field of human relations may be attributed to the fact that the more experience and the working period of the kindergarten teacher with children whenever they are closer to them, the more they would understand their characteristics. Thus, the requirement is in becoming a mother to them.

4- Are there any statistically significant differences ($\alpha \leq 0.05$) based on the degree of exercise of the basic educational competencies of the kindergarten teachers from the point of view of the teachers themselves due to the variable of the scientific qualification?

To answer this question, the arithmetical averages and the standard deviations of the degree of exercise of the basic educational competencies of the kindergarten teachers were extracted from the teachers' point of view according to the scientific qualification variable. The table below shows this.

Table 13. Mathematical averages and standard deviations of the degree of exercise of the basic educational competencies of the kindergarten teachers from the point of view of the teachers themselves according to the variable of the scientific qualification

	Categories	Number	Average	Standard Deviation
Personal competencies	Diploma	39	4.40	.327
	Bachelor	54	4.83	.234
	Higher studies	32	4.32	.458
	Total	125	4.57	.403
Special competencies Management of the classroom and interaction with children	Diploma	39	4.23	.367
	Bachelor	54	4.54	.328
	Higher studies	32	4.42	.390
	Total	125	4.41	.379
Teaching skills competencies	Diploma	39	4.53	.409
	Bachelor	54	4.63	.291
	Higher studies	32	4.23	.407
	Total	125	4.50	.395
Educational competencies for the field of human relations	Diploma	39	4.41	.369
	Bachelor	54	4.57	.380
	Higher studies	32	.498	.498
	Total	125	.444	.444
Professional Growth Competencies	Diploma		4.10	.220
	Bachelor		4.31	.468
	Higher studies		4.13	.386
	Total		4.20	.395
Total score	Diploma	4.33	4.33	.274
	Bachelor	4.58	4.58	.237
	Higher studies	4.24	4.24	.370
	Total	4.42	4.42	.320

Table 13 shows an apparent discrepancy in the arithmetical averages and standard deviations of the degree of exercise of the basic educational competencies of the kindergarten teachers from the point of view of the teachers themselves due to the different categories of the qualified variable. To illustrate the significance of the statistical differences between the arithmetic averages, a single analysis of variance was used in Table 14.

Table 14. Analysis of the single variance of the impact of the scientific qualification based on the degree of the exercise of the basic educational competencies of kindergarten teachers from the point of view of the teachers themselves

	The source	Total squares	Degrees of freedom	Average squares	P value	Statistical significance
Personal competencies	Between groups	6.653	2	3.327	30.102	.000
		13.48	122	.111		
	Inside the groups	2	124			
	Total	20.136				
Special competencies Management of the classroom and interaction with children	Between groups	2.228	2	1.114	8.748	.000
		15.53	122	.127		
	Inside the groups	9	124			
	Total	17.767				
Teaching skills competencies	Between groups	3.328	2	1.664	12.703	.000
		15.98	122	.131		
	Inside the groups	0	124			
	Total	19.308				
Educational competencies for the field of human relations	Between groups	3.986	2	1.993	11.915	.000
		20.40	122	.167		
	Inside the groups	8	124			
	Total	24.395				
Professional Growth Competencies	Between groups	.098	2	.623	4.211	.017
		19.20	122	.148		
	Inside the groups	2	124			
	Total	19.301				
Total score	Between groups	1.246	2	1.306	15.791	.000
		18.05	122	.083		
	Inside the groups	4	124			
	Total	19.301				

Table 14 shows that there are statistically significant differences at the level of $\alpha \leq 0.05$ attributed to the scientific qualification in all fields and in the tool as a whole. In order to show statistically significant differences between the arithmetic mean, the post comparisons were used in the same way as shown in Table 15.

Table 15. Comparative comparisons in a way that explains the effect of the academic qualification based on the degree of the exercise of the basic educational competencies of kindergarten teachers from the point of view of the teachers themselves

	Categories	Average	Diploma	Bachelor	Higher study
Personal competencies	Diploma	4.40			
	Bachelor	4.83	.43		
	Higher studies	4.32	.08	50	
Special competencies Management of the classroom and interaction with children	Diploma	4.23			
	Bachelor	4.54	.31		
	Higher studies	4.42	.18	.13	
Teaching skills competencies	Diploma	4.53			
	Bachelor	4.63	.10		
	Higher studies	4.23	030 *	4.23*	
Educational competencies for the field of human relations	Diploma	4.41			
	Bachelor	4.57	.16		
	Higher studies	4.12	.29*	45*	
Professional Growth Competencies	Diploma	4.10	4.10		
	Bachelor	4.31	.21*		
	Higher studies	4.13	4.13		
Total score	Diploma	4.33			
	Bachelor	4.58	.24*		
	Higher studies	4.24	.09	.33*	

* Function at the level of significance ($\alpha \leq 0.05$).

Table 15 shows the following:

- There were statistically significant differences between Bachelor and Diploma on one hand and postgraduate studies on the other hand. The differences were in favor of Bachelor of personal competencies and the total degree. This may be due to the fact that the teachers of the bachelor degree dealt with the specialization courses of kindergartens in a specialized and intensive manner. This is based on the practical training chapter in the field as the number of members of the bachelor degree sample is the most.

- There are differences of statistical significance ($\alpha \leq 0.05$) between Bachelor and Diploma and the differences came in favor of a Bachelor in the competencies of the Department of separation and interaction with children and the competencies of professional growth. This may be due to the fact that the field training separation made the grade teacher more proficient in skills and competencies than the diploma category.

- The existence of differences of statistical significance ($\alpha \leq 0.05$) between postgraduate studies on the one hand and each diploma and bachelor on the other hand. Thus, the differences came in favor of each diploma. Also, a bachelor in the educational competencies of the field of human relations and the competencies of teaching skills may be due to the fact that the parameters of the diploma and bachelor degree were apprentices. The process of learning is motivated and they have a sense of motherhood towards children.

Recommendations

In light of the results of the current study, the researcher recommends the following:

- Holding training courses that contribute to increasing the efficiency and skills of kindergarten teachers.
- Conducting similar studies on samples of other grades.

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La Responsabilité Sociétale De L'entreprise : Les Différentes Approches Conceptuelles

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Abstract

What are we talking about when we refer to the concept of Corporate Social Responsibility (CSR)? Behind every word that constitutes "CSR" lie great debates, starting with its definition. The purpose of our article is to emphasize the issue of the CSR through a brief genealogical overview and the confrontation of several definitions based on an academic literature review. Our study revealed a proliferation of proposed definitions of the concept, reflecting different approaches, which certainly enriched the debate, but complicated the subject. Therefore, after 50 years of research, CSR remains a very subjective concept, which is not yet complete..

Keywords: Corporate social responsibility, stakeholders, sustainable development, genealogy

Résumé

De quoi parle-t-on lorsqu'on évoque le concept de Responsabilité Sociétale des Entreprises ? Derrière chaque mot qui constitue la «RSE» se cachent des grands débats, à commencer par sa définition. L'objectif de notre article est de mettre l'accent sur la problématique du concept RSE à travers un bref survol généalogique puis la confrontation de plusieurs définitions émanant d'une revue de littérature académique. Notre étude a révélé une prolifération des définitions proposées du concept, traduisant des approches différentes, qui certes enrichissent le débat, mais complexifient le sujet. Il s'avère donc qu'après 50 ans de recherche, la RSE demeure un concept très subjectif, qui n'est pas encore abouti.

Mots clés : RSE, parties prenantes, développement durable, généalogie

Introduction

Depuis plusieurs années jusqu'à nos jours, « la responsabilité sociétale des entreprises » dite RSE demeure un sujet majeur faisant débat dans les milieux académiques et scientifiques. Toutefois, en dépit du grand nombre des travaux de recherche qui se sont intéressés à ce sujet, la définition du concept ne fait pas l'unanimité ni au niveau de ses fondements théoriques ni de ses implications sociétales et organisationnelles. Ce constat est corroboré par les travaux d'Allouche, Huault et Schmidt (2004) qui ont souligné de nombreuses confusions entourant la définition de la RSE, entretenues par les différents acteurs : chercheurs, institutions... Toutefois, la multitude de définitions formulées par la littérature, ou par plusieurs organismes, indique que chacun l'entame d'un point d'ancrage différent en se référant à une discipline pour le cerner. Gond et Maullenbach-Servayre (2003), ont souligné que le concept de Responsabilité Sociale des Entreprises a des contours qui ont évolué au fil du temps.

Issue du concept d'origine anglo-saxonne de Corporate Social Responsibility, la RSE présente certaines ambiguïtés en termes d'interprétation. D'une part, ses diverses traductions en langue française sont loin de faire l'unanimité. D'autre part, selon Igalen et Gond (2008), cela s'explique par les différences à la fois culturelles, idéologiques et socioéconomiques entre les contextes français et anglo-américain.

Tandis que la notion anglaise « *social* » dont le sens managérial renvoie aux relations qu'entretient l'entreprise avec, aussi bien ses diverses parties prenantes directes (*Stakeholders* ou SH), que la société dans son ensemble; sa version francophone se restreint à considérer exclusivement la nature des relations de travail entre employeur et employé. Cette vision conçoit l'entreprise dans la représentation classique de la firme comme une entité fermée dans un environnement stable. La gestion interne des relations employeur/employé est la seule préoccupation des dirigeants (en plus de la production des richesses). Ainsi, la notion « sociétale » vise à pallier l'interprétation restreinte et mieux incarner la réalité sociale des entreprises. L'entreprise est « socialement » responsable envers ses seuls salariés mais elle est « socialement » responsable envers les autres parties prenantes en plus de ses employés.

Dans notre travail, le qualificatif « social » sera retenu dans son sens large anglo-saxon, qui correspond au terme « sociétal » selon l'approche francophone.

L'objectif du présent article est de mettre l'accent sur la problématique du concept RSE à travers la confrontation de plusieurs définitions émanant d'approches différentes. Dans un souci d'enrichir la réflexion, nous présenterons, dans un premier temps une brève généalogie du concept avant

de focaliser l'attention sur l'évolution historique de ses définitions fournies par la littérature académique.

Brève généalogie du concept du RSE

Le concept de RSE a une histoire longue et variée. Cette notion trouve ses origines aux États-Unis depuis la fin du 19^{ème} siècle. Néanmoins, certains lui renvoient des antécédents à partir du temps de l'Athènes classique (500 ans av. J.-C.).

Jadis en Grèce Antique, la croyance voulait que, les individus qui étaient aisés financièrement et avaient du pouvoir ou de la puissance, soient socialement responsables. La notion « héroïsme » désignait certains aspects de responsabilité sociale et le terme grec « héros » se référait d'abord spécialement aux guerriers, mais plus tard, aux individus qui ont œuvré pour la communauté locale. Par ailleurs, certains travaux de la littérature managériale montrent que la RSE, sous sa forme élémentaire, date des années 30 et 40.

L'idée que l'entreprise doit s'intéresser aux dimensions sociétales de son environnement s'ancre dans un ensemble de débats et de réflexions plus anciens. Il s'agit des travaux de Bernard (1938) « the Fonctions of the Exécutive », des articles fondateurs de Clark (1939) « Social Control of Business » et de Kreps (1940) « Measurement of Social Performance of Business » (cité par Carroll 1999).

Ce n'est qu'aux années 50 que l'économiste universitaire Howard Bowen (1953), que l'on considère comme le père fondateur du concept, a publié son ouvrage « Social Responsibilities of the Businessman ». Désormais, il est devenu la référence majeure de tout chercheur sur la RSE; et la recherche académique s'est progressivement structurée autour de grandes problématiques. Il s'agit de la définition du concept (Mc Guire, 1963), la mise en perspective de ses différentes dimensions (Sethi, 1975), l'opérationnalisation et la mise en évidence de ses liens avec la performance (Drucker, 1984), ou encore son exploration au travers du prisme offert par différents courants théoriques (approche parties prenantes, éthiques des affaires, etc.).

Parmi les adeptes du concept, on cite Carroll, Davis K., Frederick W.C, Bolstron, et Freeman. Quant à ses adversaires, il s'agit principalement de Friedman et Levitt. Un bref retour sur l'histoire est nécessaire pour assurer une certaine compréhension de ce concept et des pratiques y associées.

Naissance du concept RSE aux Etats-Unis avec l'apparition de la « Grande entreprise »

La question des préoccupations sociétales est de mise depuis plusieurs décennies dans toutes les parties du monde par de grandes entreprises se souciant des besoins de leur personnel. Même si les années 50 sont considérées comme la naissance de la RSE aux Etats-Unis, certains auteurs ont identifié la fin du 19^{ème} siècle comme point raisonnable pour dater ses origines.

En effet, la fin du 19^{ème} siècle, pendant l'ère industrielle, était marquée par le paternalisme et la charité des grands capitalistes humanistes et d'inspiration religieuse qui prenaient en charge certains des besoins fondamentaux de leur personnel. Ainsi, l'approche paternaliste et l'aspect caritatif des hommes d'affaires sont les fondements de cette notion.

Les travaux incluant une dimension historique de ce concept montrent que l'idée de la RSE s'est diffusée en Amérique dans les milieux d'affaires et de la société dans un contexte de transformation du capitalisme américain (Epstein, 2002 ; Heald, 1961, 1970 ; Miller et O'Leary, 1989).

Pendant le 19^{ème} siècle, les entreprises s'apparentaient à ce que l'on appelle aujourd'hui, les *company towns*. Elles avaient un rôle prépondérant dans la vie de leurs employés, du fait qu'elles détenaient la propriété de toute l'infrastructure de la ville, notamment celle de la santé, de l'éducation et de l'approvisionnement. Face à une telle situation, l'Etat providence s'est édifié et le champ d'action des entreprises est devenu plus focalisé sur les initiatives de « philanthropie ».

Au début du 20^{ème} siècle, le débat s'est structuré autour de la question de la RSE de manière plus formalisée¹ (Acquier et Gond, 2005), avec l'apparition d'un nouveau modèle d'institution « la grande entreprise ». Selon Miller et O'Leary (1989), les premières théories de management (Taylor, Follett, Mayo, et Barnard) ont toutes contribué à rendre « socialement acceptable » cette nouvelle organisation en légitimant le principe de hiérarchie qui en est indissociable. Il paraît que l'acceptation et la légitimation de cette forme d'entreprises étaient les véritables enjeux de l'émergence de la RSE.

Or, les caractéristiques de cette nouvelle institution – l'actionnariat dispersé, la figure du dirigeant salarié non propriétaire et la professionnalisation du management de l'entreprise – ont constitué un terrain particulièrement favorable pour la diffusion de l'idée de la RSE (Epstein, 2002 ; Heald 1970).

¹Ces premières formulations sont centrées sur la conscience individuelle des dirigeants, et se sont particulièrement marquées par l'importance accordée à la philanthropie et à une redistribution des richesses via des donations des riches aux plus défavorisés (Zunz, 2005). Cette tradition philanthropique renvoie au mouvement d'évangélisation de la sphère sociale ou *Social Gospel* (cf. Carnegie)

La séparation entre la propriété et la gestion, dans cette nouvelle forme d'entreprises, est désormais une caractéristique qui a imposé une diminution du contrôle exercé auparavant par les actionnaires sur les dirigeants. L'entreprise est devenue une entité à part entière et a commencé à s'institutionnaliser, en raison de sa taille et de l'éloignement de ses propriétaires de la direction. De ce fait, elle apparaît de plus en plus redevable vis-à-vis d'un ensemble de « groupes intéressés, incluant cette vague entité, la communauté dans son ensemble » (Heald, 1961). L'aspect de la RSE est ici apparent dans la question de gouvernance de cette forme d'entreprise.

Quant à la professionnalisation du management, elle a donné lieu à l'émergence d'une nouvelle profession et une nouvelle figure du dirigeant. Pour de telles raisons, des *Business schools américaines* ont été mises en place ; ainsi que des programmes de formation permettant de développer la sensibilité des dirigeants aux effets de leurs décisions sur le fonctionnement large de la société. De plus, cette dernière caractéristique de l'entreprise a permis de transformer le capitalisme familial qui avait prévalu précédemment dans les entreprises, qui commençaient à recruter des ingénieurs et des juristes formés dans ces Business Schools américaines. La RSE reflète l'émergence d'une déontologie des dirigeants et de nouvelles normes professionnelles.

En reprenant les propos de Bowen, Acquier et Aggeri, (2007), la notion RSE s'est diffusée au départ dans les champs d'affaires portés par des hommes d'affaires de l'époque et centrés sur la figure du dirigeant plutôt que sur l'entreprise (Henry Ford, Alfred Sloan, Chester Barnard ou encore les dirigeants de la General Electric Company).

A partir des années 20, plusieurs dirigeants se sont exprimés sur leur responsabilité envers la société, par leurs discours à connotation religieuse de « service public » et de « trusteeship ». Ces derniers stipulent un contrat implicite caractérisant la relation entre l'entreprise et la société.

De nouvelles actions philanthropiques et de mécénat (Heald 1961, 1970) des grandes entreprises se sont développées au cours de cette période, accompagnées par des négociations collectives et la mise en place des démarches de communication-relations publiques (Marchand 1998). Mais, elles étaient mises en veille pendant la crise de 1929, ce qui a suscité une grande dépression et une méfiance importante du grand public vis-à-vis des entreprises. Par conséquent, la RSE était atteinte par l'interventionnisme public et la coercition (Pasquero, 2005).

Toutefois, la participation de ces entreprises à la seconde guerre mondiale, était l'occasion pour qu'elles restaurent leur prestige auprès de la société américaine, et s'expriment à nouveau publiquement sur leur responsabilité sociale. Après 1945, la notion de RSE a resurgi comme un véritable vecteur de légitimation des entreprises et du système capitaliste, et les discours à son propos sont devenus acceptables voire à la mode.

Formalisation du concept à la lumière de la réflexion de Bowen

Les années 50 ont connu le début de la théorisation du concept voire même l'émergence d'une « doctrine de Responsabilité sociale » qui a vu le jour à la frontière entre théologie, économie et gestion. L'ouvrage théorique de Bowen (1953) « Social Responsibilities of the Businessman » était le premier produit des efforts significatifs dans ce sens.

L'auteur d'obédience religieuse chrétienne, notamment, protestante a structuré son témoignage historique autour des notions de stewardship, de trusteeship et de prise en compte du bien-être social. En 1953, il a ouvert la réflexion sur la RSE, fondée sur une hypothèse structurante qui est la subordination de l'entreprise et de la sphère économique à la société.

Les réflexions de Bowen sont apparues dans une période de transformation de l'économie américaine, ou de sa sortie du laissez faire. Il décrivait l'économie américaine des années 50 de « mixed economy », c'est-à-dire, une économie à mi-chemin entre le libéralisme et le socialisme. Selon Bowen, s'ils veulent s'évincer d'un système plus encadré et proche du socialisme qui limitait leur liberté d'action, les dirigeants d'entreprise devaient « atteindre un équilibre raisonnable entre l'intérêt privé et public » (Acquier, Aggeri, 2007). Donc, la RSE doit passer par l'intégration des valeurs recherchées globalement par les composantes de la société, au-delà des seuls objectifs économiques poursuivis par les actionnaires et des obligations légales qui contraignent leurs décisions.

En fait, pour sa religion protestante, la recherche du profit ne peut être l'ultime fin de l'entreprise privée. L'objectif de servir l'intérêt public et accroître le bien-être de la société doit être aussi important que la réalisation des bénéfices. Dans ce sens, les dirigeants des entreprises devaient, avec une reconsidération de leurs actions et implications sociales, chercher à converger à terme les intérêts de l'entreprise avec ceux de la société.

Les années 60 représentaient une décennie où le débat portant sur la RSE a connu un véritable essor. Le fait que les comportements et les activités des entreprises étaient loin du respect des droits de l'homme, de l'environnement, des consommateurs, etc., ils sont devenus sujets à des mouvements civiques, consommateurs et écologistes qui les contestaient.

A ce propos, Acquier et Aggeri (2008) ont cité les exemples de Ralph Nader qui a remis violemment en cause les pratiques des constructeurs automobiles (en particulier General Motors) et leur acharnement à éviter l'introduction de normes de sécurité dans leurs produits à travers sa publication « *Unsafe at Any Speed* » (Nader, 1965) ; ainsi que Carson qui a évoqué, pour les problèmes environnementaux, les dégâts irrémédiables dus à l'usage des pesticides par certaines entreprises, et qui a remis en cause l'idée selon laquelle l'environnement a une capacité d'absorption infinie.

Sur le plan institutionnel, les préoccupations environnementales ont été traduites par l'adoption du Clean Air Act en Californie en 1963, du Wilderness Act en 1964 et la création de l'Agence pour la protection de l'environnement (EPA) au début des années 1970. En réaction aux mouvements consuméristes, l'agence publique de protection des consommateurs, la Consumer Product Commission (CSPC), et l'Amnesty International ont été créées en 1961.

Pour le droit du travail, une commission américaine sur l'égalité des opportunités d'emplois (US Equal Employment Opportunity Commission) a été mise en place en 1964. Finalement, la création dans les années 1970 de l'Occupational Safety and Health Administration pour la question de la sécurité au travail qui a fait aussi l'objet de réglementation.

Les pressions de différentes démarches activistes se sont traduites par la réglementation des comportements des entreprises et leur soumission à un cadre législatif contraignant et coûteux. Cette approche coercitive (command and control) a transformé le capitalisme américain et c'est une forme de RSE obligatoire qui est apparue. De nombreux dirigeants engageaient leurs entreprises soit par obligation morale, soit le plus souvent en vue de se préserver une marge de manœuvre suffisante face à l'Etat et aux groupes de pressions populaires (enlightened self-interest).

Développement de concepts intégrateurs

A partir des années 80, c'est l'époque de consolidation des construits théoriques de la RSE et de ses grandes définitions fondatrices. Les auteurs s'attachent à conceptualiser la RSE et ses champs d'action pour l'entreprise.

La vague « éthique » de la RSE héritée du paternalisme d'entreprise du 19^{ème} siècle, et fondée sur les valeurs morales et religieuses depuis les années 50 avec le livre de Bowen (1953) a laissé la place au développement d'une autre conception de la RSE. A partir des années 70 et durant les années 80 et 90, le concept de RSE s'est détaché des exigences « éthique » et « morale » à l'égard de la société. On commence à le reformuler en termes stratégiques.

La nouvelle conception de la RSE a mis l'accent sur les exigences économiques de l'entreprise. Du point de vue de celle-ci, le comportement social de l'entreprise doit servir sa performance économique. C'est l'approche « utilitariste » de la RSE.

Cette nouvelle orientation de la recherche a donné lieu à la naissance de nouveaux termes d'investigations théoriques. Il s'agit de :

- La notion de « performance sociale de l'entreprise » qui concerne le lien entre performance économique et performance sociale de l'entreprise ;
- La notion des « Parties prenantes (PP) » évoquée par Freeman (1984). Selon l'auteur, la prise en compte par l'entreprise des attentes de ses

actionnaires, ses salariés et autres parties contractantes, voire au-delà, toute partie qui est susceptible d'affecter ses intérêts, est aussi incontournable que décisive lors du développement de ses stratégies ;

- La notion de « réactivité sociale de l'entreprise » qui fait référence au processus de mise en œuvre de stratégie RSE. C'est un courant développé dans le cadre d'un travail de recherche au sein de la Harvard Business School en 1971 sous l'autorité de Raymond Bauer (Ackerman, 1975). Ce concept renvoie à la capacité des firmes multidivisionnelles à piloter le changement et à renouveler leurs modes d'action de manière régulière, au-delà de la capacité des entreprises à prendre en charge de nouvelles questions sociales ;

- La notion de « business case » qui repose sur une stratégie gagnant-gagnant, centrée sur la nécessité économique pour l'entreprise de se conformer aux attentes sociétales pour garantir sa présence dans le marché et sa rentabilité. Les enjeux associés à la RSE deviennent le gain de rentabilité, l'avantage concurrentiel, l'image de marque, etc.(Capron & Petit, 2011).

A partir des années 90, un autre courant en lien avec le développement durable (DD) émerge. Il s'agit du courant « soutenable » de la RSE dont les enjeux sont ceux de la contribution de l'entreprise au DD.

Alors qu'aux Etats-Unis, la RSE est resté très libérale et empreinte du caractère religieux protestant, dans le reste du monde, notamment, en Europe, ce concept s'est développé d'une façon très institutionnelle, évoquant le concept du développement durable (DD).

Internationalisation du concept

Bien que la dernière décennie du 20^{ème} siècle ait connu un foisonnement des thématiques de RSE étudiées aux Etats-Unis, sa prise en compte concrète, en tant qu'approche volontaire par les entreprises, date de la fin des années 90.

En fait, la propagation du concept hors d'Amérique est liée à plusieurs raisons. Il s'agit d'une part, de l'ouverture des marchés globaux et les nouveaux défis de la globalisation, des critiques de la société civile à l'encontre du modèle libéral, des conséquences du développement technologique et économique (biogénétique, nucléaire, internet, réchauffement climatique). D'autre part, sa prise en compte au niveau international découle d'une évolution législative (loi française sur les nouvelles régulations économiques de 2002, directives européennes sur l'emballage, lois de grenelle, etc.) et de la montée concomitante du concept de DD depuis le rapport de Bruntland (1987).

Dans ce cadre général, et face à l'affaiblissement des Etats, la question d'une RSE se posait avec insistance comme à la fois nécessaire et durable. Klaus Schwab, fondateur du forum économique mondial indiquait que la réunion du forum de 1999 à Davos « constitua peut être un moment décisif

pour la réintroduction de la notion de responsabilité sociale dans le monde des entreprises » (cité dans Banlanya et al., 2000, p149).

Dans ce sens, de grandes organisations internationales, telles que l'Organisation de Coopération et Développement Economiques (OCDE), l'Union Européenne (UE) et l'Organisation des Nations Unies (ONU) ont participé, à leur tour, au mouvement d'intégration des entreprises dans les thématiques de RSE et du DD. Elles ont développé leurs propres approches « institutionnelles » de la RSE.

L'approche RSE de l'OCDE

En 1976, l'OCDE a proposé une série de « Principes directeurs pour les entreprises multinationales » construits dans une vision positive de la mondialisation économique. Ces principes servaient d'instruments facilitateurs de l'investissement direct entre les membres de l'OCDE (OCDE, 2001b). Pour cette organisation, l'investissement international est le fer de lance de la mondialisation dont il s'agit désormais de gérer pour en partager les bénéfices; et les multinationales sont les canaux par lesquels il passe pour se concrétiser. Vu « la contribution positive que les entreprises multinationales peuvent apporter au progrès économique, environnemental et social » (ibid., p.3), on les considère comme partie intégrante de l'économie internationale. Elles sont une source des flux d'investissement, des recettes fiscales et de la diffusion de technologies. Toutefois, leurs activités ne cessent de susciter certaines inquiétudes chez l'opinion publique, ce qui justifie la nécessité de leur cadrage. Les principes directeurs sont une réponse en ce sens. Ce sont « des principes et des normes volontaires pour un comportement responsable des entreprises dans plusieurs domaines » (ibid., p.2).

Dans ce contexte, chaque multinationale devait s'y référer comme instrument lui permettant d'opérer en harmonie avec le pays où elle est située, et d'empêcher les malentendus.

En 2000, l'OCDE a révisé ses principes proposés en 1976, acte qui a permis l'intégration de nouvelles exigences en matière d'environnement, de droit de l'homme, de travail (suppression du travail des enfants et le travail forcé), de lutte contre la corruption, et de protection du consommateur. C'était un renforcement des « éléments essentiels – économique, social, et environnemental – du programme d'action du développement durable » (ibid., p.4).

Le réexamen effectué met en évidence l'intérêt que porte l'OCDE au terme DD. D'ailleurs, dans l'une de ses définitions de la notion de RSE, elle se réfère exclusivement au concept de DD : « la RSE est la contribution des entreprises au développement durable » (OCDE 2001a, p 13, n.t).

Dans le même sens, l'OCDE considère qu'on « s'entend en général pour dire que les entreprises dans une économie globale sont souvent appelées

à jouer un plus grand rôle au-delà de celui de création d'emplois et de richesses; et que la RSE est la contribution des entreprises au développement de la durabilité ; que le comportement des entreprises doit non seulement assurer des dividendes aux actionnaires, des salaires aux employés et des produits et services aux consommateurs, mais il doit répondre également aux préoccupations et aux valeurs de la société et de l'environnement » (Voir : www.oecd.org/home).

Dans cette définition, l'OCDE met l'accent sur le rôle crucial que doit jouer l'entreprise dans le DD. Tout en cherchant à maximiser son profit et à créer de la richesse et de l'emploi, l'entreprise peut réussir à préserver son environnement et à respecter les valeurs de sa société. Tel est le défi que les entreprises sont appelées à relever en se référant aux principes volontaires de l'OCDE, et en s'engageant dans une démarche RSE.

L'approche RSE de la Commission Européenne

Bien qu'une batterie de définitions institutionnelles potentielles soit disponible, celle que la Commission Européenne (CE)² est la plus souvent utilisée.

Elle définit la RSE comme « *L'intégration volontaire par les entreprises de préoccupations sociales et environnementales à leurs activités commerciales et leurs relations avec les PP* » (Livre Vert, juillet 2001, p.8). La définition nous éclaire sur deux convictions de la CE : l'engagement de l'entreprise dans la démarche RSE ne peut être que volontaire et doit s'appuyer sur un objectif de DD. Le concept de RSE couvre, au-delà, des domaines sociétal et environnemental, la réponse de l'entreprise aux attentes et aux besoins de ses PP.

Ce document de référence était destiné, d'une part, à déclencher le débat sur le concept de RSE et, d'autre part, à définir les moyens de construire un partenariat permettant l'élaboration d'un cadre tant européen qu'international pour la promotion du concept.

La CE s'est appuyée sur les conclusions du Conseil Européen de Lisbonne de mars 2000, qui mettent l'accent particulièrement sur la RSE, durant lequel l'UE s'est fixée un objectif stratégique pour la première décennie du 21^{ème} siècle. Cet objectif s'exprime en termes d'économie la plus compétitive et la plus dynamique du monde, de croissance durable, d'amélioration de l'emploi et de cohésion sociale.

Il en résulte l'appui à l'investissement du champ de la RSE par l'UE. Il s'agit d'une stratégie en faveur du DD qui encourage les entreprises à élargir leurs champs de RSE : « *l'action des pouvoirs publics est (...)*

² Définition présentée dans son Livre vert « Promouvoir un cadre européen pour la responsabilité sociale des entreprises »

essentielle pour encourager les entreprises à davantage prendre conscience de leurs responsabilités sur le plan social et pour mettre en place un cadre permettant de s'assurer que les entreprises intègrent les aspects environnementaux et sociaux dans leurs activités (...) il faudrait encourager les entreprises à intégrer de manière active le développement durable dans les activités qu'elles poursuivent à l'intérieur de l'UE et dans le monde » (CE, 2001c, p.8).

Un an plus tard, la consultation des porteurs d'enjeux et l'avis des institutions européennes ont amené la CE à publier sa « *Communication concernant la RSE : une contribution des entreprises au développement durable* » (CE, 2002). L'objectif était de préciser que la notion RSE est intimement liée au concept du DD. Constat qu'a expliqué le président de la CE, Romano Prodi, par l'évolution de la prise de conscience et des attentes des citoyens européens. Les exigences de ceux-ci vont, désormais, au-delà de rémunérations justes, des produits de bonnes qualités aux bons prix, à d'autres types de demandes portant sur des valeurs éthiques et plus généralement sur le DD.

L'approche RSE de l'ONU

En 1999, inquiet de la fragilité de la globalisation par la prédominance de l'économique sur le politique et le social, Kofi Annan le secrétaire général des NU, a proposé aux entreprises de promouvoir un ensemble de valeurs universelles et les intégrer volontairement à leurs actions. En fait, il s'agit de l'extension de la responsabilité sociale de l'entreprise et l'intégration de ces valeurs dans les champs des droits de l'homme, du travail et de l'environnement.

Le Global Compact (GC) ou le Pacte Mondial, lancé officiellement en Juillet 2000, s'inscrit dans cette lignée. Cet outil est le fruit du discours de Kofi Annan dont l'objectif était la mise en place d'un « Pacte mondial » afin d'avoir des valeurs partagées au niveau du marché global. Dès lors, l'ONU s'est engagée dans l'édition des principes de RSE auxquels les entreprises sont invitées à adhérer. Son rôle était l'assistance et la facilitation du dialogue entre les entreprises et les autres groupes sociaux sans pour autant avoir un pouvoir contraignant. L'initiative d'adhésion découle d'une démarche volontaire des entreprises en s'engageant à respecter dix principes ayant pour objectifs la défense desdits droits et la lutte contre la corruption ajoutée en 2004 (Encadré 1).

Encadré 1 : Les dix principes du Global Compact

- Principe 1 : Encourager et respecter la protection des droits de l'homme internationaux dans sa sphère d'influence.
- Principe 2 : S'assurer que sa propre entreprise ne soit pas complice de violations des droits de l'homme.
- Principe 3 : Liberté d'association et reconnaissance effective du droit à la négociation collective.
- Principe 4 : Elimination de toutes formes de travail forcé et obligatoire.
- Principe 5 : Abolition effective du travail des enfants.
- Principe 6 : Elimination de la discrimination dans l'embauche et le travail.
- Principe 7 : Encourager une approche des défis environnementaux fondée sur le principe de précaution.
- Principe 8 : Mettre en œuvre des initiatives pour promouvoir une plus grande responsabilité environnementale.
- Principe 9 : Favoriser le développement et la diffusion.
- Principe 10 : La lutte contre la corruption

Source : <https://www.unglobalcompact.org/what-is-gc/mission/principles>

Le GC n'est pas une norme ou un code de conduite. Il relève d'une charte de principes qui impliquent un certain engagement des pays adhérents. En s'engageant, ces pays doivent s'efforcer à mettre la charte en œuvre et à promouvoir son respect par les entreprises opérant dans ou à partir de leur territoire. Toutefois, les entreprises elles-mêmes ne sont pas tenues d'adhérer publiquement aux principes, alors qu'elles le doivent si elles veulent adhérer au GC.

Par ailleurs l'engagement des entreprises au GC se déroule encore très humblement. Certains expliquent cela par la méfiance qu'éveillent en particulier les principes concernant le travail. (Elkington, 2001)

En définitive, on peut remarquer que les principes de l'OCDE et de l'ONU présentent des instruments globaux de responsabilité des entreprises, qui servent de standards de référence aux entreprises internationales en matière de performance et pratiques non financières. Par contre, l'approche de l'UE se trouve en plein débat instigué par son livre vert. Celui-ci ne fixait pas des méthodes pour le développement de la RSE, mais il amorçait la recherche des outils permettant de constituer des piliers d'une politique européenne de promotion de la RSE.

Par ailleurs, l'approche onusienne insiste aussi clairement que celle de l'OCDE sur le caractère volontaire et non contraignant de son instrument non prescriptif. A la différence, le livre vert et la communication de la CE mettent l'accent sur les questions de suivi et de contrôle des engagements des entreprises.

L'objectif de cette brève lecture généalogique était de cerner l'identité du concept de RSE, et de comprendre le contexte historique de sa naissance

aux États-Unis et de sa diffusion dans d'autres contextes culturels. Toutefois, l'internationalisation du concept RSE ne signifie guère sa standardisation, car bien que des principes universels semblent se dégager (principes de l'OCDE ou initiatives de l'ONU et ses agences), il reste nécessaire de les adapter aux besoins du pays qui s'en empare.

Force est de constater la diversité des approches et des définitions de la RSE proposées par les différentes institutions. Quid de celles données par les académiciens ?

Littérature académique

Comme il a été montré ci-dessus, le concept de RSE a une histoire longue et variée. Toutefois, la temporalité académique ne coïncide pas avec celle de la société. Les discours académiques qui suivent ne sont qu'un prolongement d'un ensemble de pensées qui se sont développées depuis les années 50 avec Bowen. Plusieurs autres chercheurs l'ont succédé et ont tenté de le définir selon différentes perceptions sans aboutir à un consensus (Davis, 1960 ; McGuire, 1963 ; Jones, 1980 ; Friedman, 1962 ; Manne, 1972 ; Preston et Post, 1975 ; Carrol, 1979 ; Watrick et Cochran, 1985 ; Wood, 1991 ; Clarkson, 1995 ; Husted, 2000).

Toutes ces recherches et d'autres ont abouti au développement de différentes approches du concept RSE. Certaines ont considéré que la RSE va au-delà de l'intérêt économique de la firme, d'autres l'ont réduite à la maximisation du profit. Tandis qu'un groupe de chercheurs a avancé que la RSE consiste à répondre aux attentes de la société de façon volontaire, et finalement un autre groupe a mis l'accent sur le fait que la RSE se traduit par la prise en compte des intérêts de ses PP.

La RSE va au-delà de l'intérêt économique de la firme

Pour Bowen, premier auteur ayant défini le concept, la RSE « renvoie à l'obligation pour les hommes d'affaires, de mettre en œuvre les politiques, de prendre les décisions et de suivre les lignes de conduite qui répondent aux objectifs et aux valeurs considérés comme désirables pour notre société » (Bowen, 1953). Dans cette définition, l'auteur souligne l'impératif de la contribution de l'entreprise à la réalisation des objectifs de sa société.

Selon cette approche, il serait plus judicieux de parler de Responsabilité *Sociétale* des Entreprises, car le terme « *sociétale* » renvoie à la société dans son ensemble, alors que le terme « social » fait uniquement référence à la politique sociale adoptée par l'entreprise pour satisfaire les besoins de ses salariés comme il a été précisé précédemment.

Pour l'entreprise, prendre en compte les conséquences de ses actions sur la société implique que la nature de ses responsabilités augmente. L'entreprise ne doit plus avoir des objectifs purement économiques, comme

le suggère le courant libéral, mais également des préoccupations sociales. La RSE va donc au-delà de l'intérêt économique de la firme.

Plusieurs autres universitaires américains se sont intéressés audit concept et ont cherché à donner leurs propres acceptions. Peter Drucker (1954), a consacré une partie de son ouvrage « the practice of management », à la responsabilité des managers. Selon l'auteur, les intérêts économiques de l'entreprise et les enjeux sociaux sont indissociables. Drucker rejette la vision utilitariste smithienne de l'économie selon laquelle une quête « aveugle » de la maximisation de profits conduit à un bien-être collectif. Son approche consiste à éclairer les managers sur la nécessité de prendre conscience des enjeux relatifs à la manière de conduire les affaires.

D'autres chercheurs sont allés dans la même veine de Bowen. Davis (1960) est l'un des auteurs les plus évoqués dans ce sujet. Lors de sa définition de la notion RSE, il a mis en évidence la dimension éthique du terme. Pour lui, « *La RSE est la considération de la firme et sa réponse à des problèmes qui vont au-delà des engagements économiques, techniques et légaux pour atteindre le seuil du bénéfice social* » (Davis 1960). Néanmoins, selon cet auteur, les décisions et actions socialement responsables ne manquaient pas d'avantages économiques sur le long terme de l'activité des entreprises qui s'y engageaient. Il a maintenu sa conviction, lorsqu'il a affirmé avec Blomstrom que « *la responsabilité sociale se rapporte à l'obligation d'une personne de considérer les effets de ses actions dans l'ensemble du système social. Les dirigeants appliquent la RSE quand ils considèrent les besoins et les intérêts d'autres personnes qui pourraient être touchés par les actions de l'entreprise. Ainsi, ils regardent au-delà des intérêts économiques et techniques étroits de leur entreprise* » (Davis et Blomstrom 1966, cité à par Carroll, 1999).

De même, Frederick (1960) a défendu que les moyens de production devaient être utilisés de telle sorte qu'ils améliorent le bien être socio-économique total (Carroll, 1999). Sur la même lancée, McGuire (1963) a avancé que l'idée de responsabilité sociétale suppose que la firme n'a pas seulement des obligations légales ou économiques, mais elle les dépasse à des obligations sociétales.

D'autres auteurs à l'instar de Jones (1980) et McWilliams et Siegel (1997) ont considéré, également, que la RSE est une responsabilité extra-économique. Selon les approches de ces auteurs, une entreprise a, par dessus ses obligations économiques et légales à respecter, des engagements sociétaux à honorer envers la société dans laquelle elle évolue.

Toutefois, d'autres auteurs ont rejeté cette idée en rappelant que la raison d'être de l'entreprise est la réalisation de profit.

La RSE consiste à maximiser le profit pour les actionnaires

L'auteur de référence de l'approche selon laquelle l'entreprise doit avoir des préoccupations économiques pures, est Milton Friedman. Ce partisan du courant libéral, s'opposant aux idées du livre de Bowen (1953), a décrit la notion de RSE comme, profondément subversive. Il considérait que « *Rien n'est plus dangereux, pour les fondements de notre société, que l'idée d'une responsabilité sociétale des entreprises autre que de générer un profit maximum pour leurs actionnaires* » Friedman (1962). Lors de sa publication « *Freedom and capitalism* » (1962), il a affirmé que « *la seule responsabilité de l'entreprise est de maximiser les profits de ses propriétaires et actionnaires* ».

De même en 1970, Friedman a confirmé cette approche en avançant que « *La responsabilité sociétale de l'entreprise est celle d'accroître ses profits. Elle consiste à utiliser ses ressources et à s'engager dans des activités destinées à accroître ses profits, dans la mesure où elle respecte les règles du jeu, c'est-à-dire celles d'une concurrence ouverte et libre* ». D'après cet auteur, les dirigeants ne sont que des mandataires des actionnaires. Ils ont des responsabilités envers les propriétaires qui les emploient dans le sens où ils doivent mener le travail comme ceux-ci le désirent. Ce travail se réduit à maximiser le profit autant que possible, tout en respectant les règles légales et éthiques.

Sa position est sans ambiguïté : « si les hommes d'affaires ont une responsabilité autre que le maximum de profit pour les actionnaires, comment peuvent-ils savoir ce qu'elle est ? Des individus privés auto-désignés, peuvent-ils décider ce qu'est l'intérêt de la société et se substituer à l'État ? » (Friedman, 1970, cité par Gond, p. 335).

C'est une approche compatible avec une vision classique de la firme où la rémunération des actionnaires est légitime et justifiée. L'entreprise ne peut pas avoir des responsabilités sociétales ; seules les personnes telles que les dirigeants en ont. Ces derniers peuvent assumer personnellement et volontairement certaines responsabilités envers la société mais sans engager leur entreprise. Ils peuvent donc agir pour leur propre compte et dépenser leur propre argent. Mais, en aucun cas, ils ne peuvent agir au nom de leurs employeurs et juger à leur place pour un intérêt social d'ordre général.

Pour Friedman, ces actions ne seraient admises que dans le cas où elles sont accompagnées d'une économie d'impôt pour l'entreprise, sinon, elles risquent de contrecarrer sa recherche du profit, ce qui va à l'encontre des principes d'une économie libérale.

La RSE consiste à répondre aux attentes de la société de façon volontaire

Contrairement aux auteurs qui ont mis l'accent sur les obligations sociétales de l'entreprise, d'autres chercheurs ont développé une autre

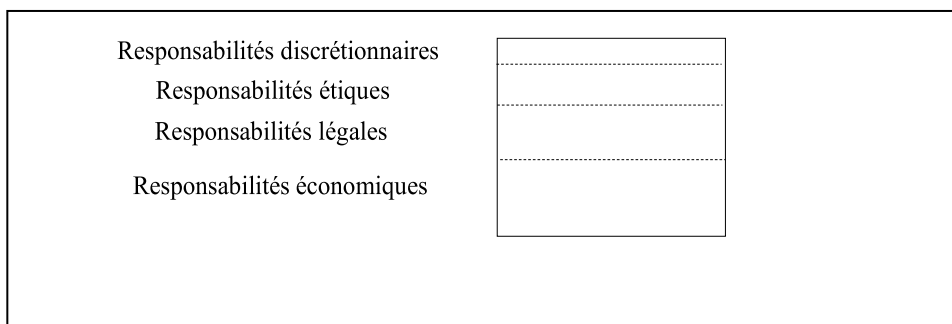
approche selon laquelle la réponse de l’entreprise aux attentes de la société doit être volontaire et non pas obligatoire. Il s’agit notamment de Walton (1967), dans son ouvrage « Corporate social responsibilities », où la notion de « volontarisme » a été reconnue pour la première fois. Cet auteur précisait que la RSE d’une entreprise comprenait toujours un certain degré de volontarisme, car les entreprises devaient accepter que des coûts soient impliqués dans des actions sociales sans retour économique mesurable. (Walton, 1967, cité par Carroll, 1999).

Dans un sens similaire, Manne (1972) a souligné que la RSE est l’idée selon laquelle les firmes répondent aux attentes de la société de façon volontaire. Pour sa part, Jones (1980) a avancé que « *La RSE n’est en aucun cas une obligation de nature coercitive. L’entreprise est tenue d’adopter un comportement responsable, mais toute action sociale influencée par une contrainte légale n’est en aucun cas volontaire* ».

D’après ces auteurs, l’engagement sociétal de l’entreprise doit traduire sa pleine volonté d’assumer cette responsabilité. La RSE ne doit pas être conçue par l’entreprise comme une obligation ou une contrainte mais comme un choix stratégique.

L’étude de cette approche volontariste de la RSE ne peut être évoquée sans citer les travaux de Carroll considéré, aux Etats-Unis, comme le père du sens actuel du concept. Selon cet auteur, la responsabilité sociétale est ce que la société attend, à un moment donné, des organisations en matière économique, légale, éthique et volontaire (Carroll 1979). Cette conception est présentée dans son modèle des quatre catégories de la responsabilité sociale de l’entreprise. (Voir Figure 1).

Figure 1 : Les 4 catégories de la RSE selon le modèle de Carroll de 1979



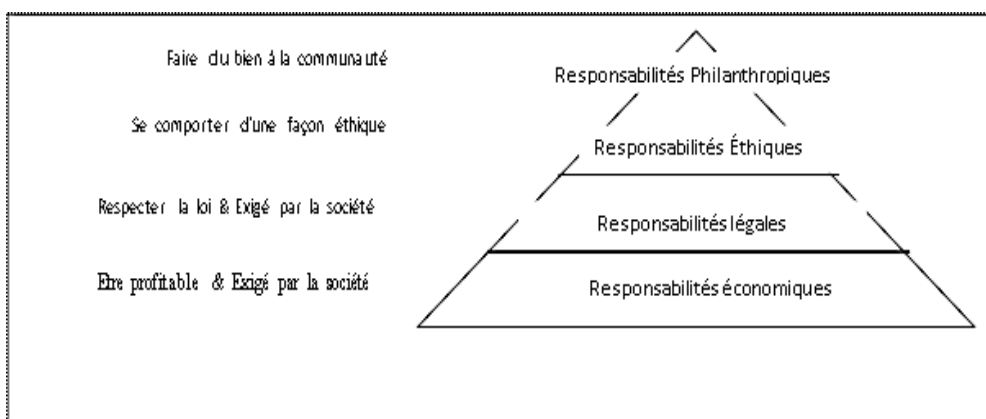
Source : Carroll 1979

Carroll considèrerait que les responsabilités des entreprises envers la société peuvent être regroupées dans les quatre catégories de son modèle dont la proportion de chacune donne une idée sur l’importance accordée à la responsabilité en question.

On remarque que les responsabilités étalées dans le modèle de Carroll (1979) sont présentes toutes à la fois dans le monde des affaires et que la possibilité qu'une action d'entreprise puisse avoir en même temps les quatre objectifs économiques, légaux, éthiques et/ou discrétionnaires, est aussi présente. Toutefois, Carroll a précisé que l'histoire économique montre que la proportion de la dimension économique est la plus importante suivie de la dimension légale. Les aspects éthiques et discrétionnaires viennent respectivement au 3^{ème} et au 4^{ème} rang.

En 1991, Carroll a repris son modèle initial de 1979 pour développer une nouvelle conceptualisation de la RSE sous la forme d'une pyramide (voir Figure 2).

Figure 2 : Les 4 catégories de la RSE selon le modèle de Carroll de 1991



Source : Carroll 1991

Etant donné que la raison d'être de l'entreprise est la réalisation du profit, les principales actions réalisées par cette organisation, en termes de quantité et qualité, sont de type économique. Par ailleurs, si l'entreprise ne joue pas convenablement ce rôle qui lui est assigné par la société, elle ne pourra pas être un agent actif sur le plan social. Il est donc tout à fait normal que les responsabilités économiques soient la base de la RSE. Le respect de la loi, 2^{ème} responsabilité de l'entreprise, est fondamental en matière de RSE vu que les lois représentent un processus de codification des valeurs morales qui sont présentes dans la société (Crane et Matten, 2004).

Selon Carroll (1991), les responsabilités éthiques, classées en 3^{ème} position, obligent les entreprises à faire ce qui est vu comme bon, juste et honnête. Il s'agit des actions que les PP attendent d'une entreprise même si elle n'y est pas tenue par la loi. L'engagement d'une entreprise dans une démarche RSE atteint son apogée, lorsqu'elle réalise volontairement des actions désirées par la société pour le bien-être de ses salariés et/ou de la communauté en général: il s'agit des responsabilités philanthropiques. Le fait

que ces dernières siègent au sommet de la pyramide veut dire qu'elles sont moins présentes dans ses préoccupations.

Dans cette perspective, les responsabilités s'ajoutent les unes aux autres et chacune d'entre elles forme un composant de base de la responsabilité sociétale totale d'une entreprise.

Bien que le modèle de Carroll ait été utilisé à plusieurs reprises dans les recherches aussi bien théoriques qu'empiriques sur la RSE, il présente néanmoins un certain nombre de limites. Ces dernières ont poussé son auteur à le revoir en 2003 pour ne garder que trois niveaux de responsabilités en fusionnant les deux derniers qui semblent être très proches (Responsabilités éthiques et philanthropiques).

De même, Wood (1991) a revu et complété la définition de Carroll, en précisant trois niveaux de responsabilités pour l'entreprise :

- la responsabilité de l'entreprise en tant qu'institution sociale : la Société accorde une légitimité à l'entreprise. En contrepartie, dans l'exercice de son pouvoir économique découlant de cette légitimité, l'entreprise doit répondre aux attentes la Société ;
- la responsabilité en terme de conséquences de ses activités : l'entreprise est responsable des conséquences de son activité sur ses parties prenantes premières (concernées directement par les décisions de la firme) ou secondaires (concernées indirectement) ;
- la responsabilité individuelle et morale des dirigeants qui doivent intégrer la RSE aussi bien lors de la conception de leurs stratégies que lors de leur mise en œuvre. (Attarça & Jacquot, 2005)

Ainsi, selon Wood 1991 « *La responsabilité sociétale ne peut être appréhendée qu'à travers l'interaction de trois principes : la légitimité, la responsabilité publique, et la discrétion managériale. Ces principes résultent de trois niveaux d'analyse institutionnel, organisationnel et individuel* ».

L'approche de Wood est complémentaire à celle de Carroll. Chacune des formes de responsabilité proposées par Carroll (économique, légale, éthique et philanthropique) peut être déclinée selon les trois niveaux définis par Wood. Le tableau n°1 qui suit fait un rapprochement des modèles de Carroll et de Wood en croisant les niveaux et la nature de la RSE:

Tableau N°1 : Niveau et nature de la RSE

	Niveau Institutionnel	Niveau Organisationnel	Niveau individuel
Responsabilités Economiques	Produire des biens et services ; offrir des emplois ; créer de la richesse pour des actionnaires.	Les prix des biens et services reflètent les vrais coûts de production et intègrent toutes les externalités.	Produire de façon écologique, utiliser des technologies non polluantes, réduire les coûts en favorisant le recyclage.
Responsabilités Légales	Respecter les lois et les réglementations. Ne pas faire de lobbying ou attendre des positions privilégiées dans les politiques publiques.	Œuvrer pour des politiques publiques en défendant des intérêts éclairés.	Tirer profits des instructions réglementaires pour innover dans les produits ou les technologies.
Responsabilités Ethiques	Suivre des principes Ethiques fondamentaux (par exemple l'honnêteté).	Fournir des Informations précises et complètes pour accroître la sécurité d'utilisation au-delà des conditions légales.	Développer l'information d'utilisation pour des usages spécifiques et la promouvoir comme un avantage produit.
Responsabilités Discrétionnaires	Agir comme un citoyen modèle dans tous les domaines : au-delà des réglementations et des règles éthiques, rendre une partie du chiffre d'affaires à la société (Community).	Investir les Ressources de l'entreprise dans des actions charitables en rapport avec le premier et le second cercle de l'environnement sociale de l'entreprise.	Choisir des investissements charitables qui soient rentables en termes de résolution de problèmes sociaux (application de critères d'efficacité).

Source : Adapté du modèle de Carroll et Wood (1991)

La RSE consiste à tenir compte des intérêts de ses Parties Prenantes

Toutes les responsabilités évoquées précédemment s'appuient sur la théorie des Parties Prenantes (PP). Berle & Means (1932) peuvent être considérés comme les pionniers de cette approche « stakeholder ». Mercier (2004) rappelle que Berle et Means, en 1932, avaient déjà constaté le développement d'une pression sociale s'exerçant sur les dirigeants pour qu'ils reconnaissent leur responsabilité auprès de tous ceux dont le bien-être peut être affecté par les décisions de l'entreprise. Berle & Means (1932) n'ont pas utilisé explicitement le terme de parties prenantes mais leurs réflexions ont notablement évoqué le concept. Pour Berle, les intérêts des différents partenaires seraient mieux servis par un attachement sans faille des dirigeants à la richesse des actionnaires.

Par ailleurs, la notion de PP a été évoquée pour la première fois avec Harold Johnson en 1971 dans son livre intitulée « Business in contemporary : framework and issues ». L'auteur considérait qu'une entreprise socialement

responsable devait, d'une part, tenir compte de l'intérêt de ses employés, fournisseurs, revendeurs, et des collectivités locales. D'autre part, concilier entre des intérêts divers, au-delà, de l'intérêt de l'accumulation des richesses des actionnaires.

De son côté, Jones (1980) a défendu l'idée qu'une entreprise socialement responsable est celle qui rajoute, volontairement, les intérêts des autres (PP) à ses propres intérêts et les considère comme étroitement liés. Ainsi, il a défini la RSE comme « *la notion selon laquelle les entreprises ont une obligation envers les groupes constitutifs de la société autres que les actionnaires et cela, au-delà de ce qui est prescrit par la loi ou le contrat syndical* »

Carroll (1991) également a préconisé d'utiliser la notion de PP pour mieux identifier la RSE car l'entreprise est devenue soumise à de grandes pressions de la part des acteurs de sa société (les actionnaires, les employés, les clients, les fournisseurs, les lois et les réglementations, les groupements de la société civile ...).

Les attentes des PP doivent être entendues et recevoir une réponse qui fait partie de la stratégie RSE de l'entreprise, celle-ci devant inclure une gestion des relations avec les PP. Dans ce sens, la norme ISO 26000 inscrit la « prise en compte des PP » au cœur de la notion de RSE qui se définit comme la « *maîtrise par une organisation des impacts de ses décisions et activités sur la société et sur l'environnement, se traduisant par un comportement éthique et transparent qui contribue au développement durable, y compris à la santé et au bien-être de la société, prend en compte les attentes des PP ; respecte les lois en vigueur tout en étant en cohérence avec les normes internationales de comportement ; et qui est intégré dans l'ensemble de l'organisation et mis en œuvre dans ses relations* ». Il n'est pas donné de liste de PP, celles-ci étant tout « *individu ou groupe ayant un intérêt dans les décisions ou activités d'une organisation* ».

L'approche des PP amène l'entreprise à isoler les groupes d'acteurs les plus « pertinents » et qu'il convient de considérer dans une démarche de RSE. Ceci est également perçu dans la définition d'Epstein (1987) selon laquelle la RSE est « *la réalisation des résultats des décisions organisationnelles concernant les questions spécifiques qui ont des avantages plutôt que des effets indésirables sur les PP pertinentes d'entreprise* ». Selon Epstein (1987), la RSE est la satisfaction des PP qui constitue une condition nécessaire, en parallèle avec la mise en œuvre des systèmes de mesures originaux et appropriés pour la réussite organisationnelle.

Synthèse des principales approches de la RSE

La multiplicité des approches théoriques du concept RSE explique les divergences remarquées dans ses définitions académiques. Le tableau n°2 ci-

après synthétise l'évolution historique du concept de la RSE selon les principales approches développées ci-dessus.

Tableau n°2 : L'évolution historique du concept RSE selon les principales approches

La RSE va au-delà de l'intérêt économique de la firme	
Bowen 1953	La RSE renvoi à l'obligation de mettre en œuvre les politiques, de prendre les décisions, et de suivre les lignes de conduite qui répondent aux objectifs et aux valeurs considérées comme désirables par la société.
Davis 1960	La RSE est la considération de la firme et sa réponse à des problèmes qui vont au-delà de ses engagements économiques, techniques et légaux pour atteindre le seuil du « social benefit ».
Mc Guire 1963	L'idée de responsabilité sociétale suppose que la firme n'a pas seulement des obligations légales ou économiques, mais qu'elle possède également des responsabilités envers la société, qui dépasse le simple cadre de ces obligations.
Backman 1975	La RSE renvoie aux objectifs et aux raisons qui donne une âme aux affaires plutôt qu'à la recherche de la performance économique.
Jones 1980	La responsabilité sociale est l'idée selon laquelle les firmes, au-delà des prescriptions légales ou contractuelles, ont des obligations envers les acteurs sociétaux.
Mc Williams et Siegle 2001	La RSE est l'ensemble des actions qui répondent aux attentes de la société et qui vont au-delà des intérêts économiques de la firme dans le respect des lois.
La RSE consiste à maximiser le profit pour les actionnaires	
Friedman 1962	Rien n'est plus dangereux pour les fondements de notre société que l'idée d'une responsabilité sociétale des entreprises autre que de générer un profit maximum pour leurs actionnaires.
Friendman 1970	La responsabilité sociétale de l'entreprise est celle d'accroître ses profits. Elle consiste à utiliser ses ressources et à s'engager dans des activités destinées à accroître ses profits, dans la mesure où elle respecte les règles de jeu, c'est-à-dire celles d'une concurrence ouverte et libre.
La RSE consiste à répondre aux attentes de la société de façon volontaire	
Manne 1972	La responsabilité sociétale est l'idée selon laquelle les firmes répondent aux attentes de la société de façon volontaire.
Caroll 1979	La responsabilité sociétale est ce que la société attend à un moment donné des organisations en matière économique, légal, éthique et volontaire.
Jones 1980	La RSE n'est en aucun cas une obligation de nature coercitive. L'entreprise est tenue d'adopter un comportement responsable, mais toute action sociale influencée par une contrainte légale n'est aucun cas volontaire.
Frederick 1994	L'acceptation volontaire des principes de responsabilité est toujours préférable à la réglementation ou à l'intervention contraignante.
La RSE consiste à tenir compte des intérêts de ses Parties Prenantes	
Maignan, Ferrell et Huit, 1999	La RSE est la mesure dans laquelle les entreprises assument les responsabilités économiques, légales, éthiques et discrétionnaires imposées par les diverses parties prenantes aux activités de l'entreprise

Gendron 2002	La responsabilité sociale concerne l'ensemble des relations que la firme entretient avec ses parties prenantes. Les éléments de la responsabilité sociale incluent l'investissement dans la communauté, les relations avec les employés, la création et le maintien de l'emploi, les préoccupations environnementales et la performance financière.
Luo et Bhattacharya, 2006	Le concept de RSE renvoie aux activités et engagements de l'entreprise liés à la perception de ses obligations envers la société ou les parties prenantes à son activité

Source : Elaboré par nos propres soins à partir des travaux de Carroll (1999) ; Gond § Mullenbach (2004) ; V. Swaen § R. Chupitaz (2008) et FE. Taoufik (2015)

Conclusion

La lecture généalogique du concept RSE montre qu'il s'est profondément transformé au fil du temps selon les conditions de son émergence. Si au début il était plutôt lié aux valeurs morales et religieuses, il s'est ensuite enrichi d'une dimension éthique. Puis, il s'est imposé comme l'outil qui permet d'aborder les défis du capitalisme et de mondialisation. Enfin, il a poursuivi son évolution en lien avec le développement durable.

Eu égard à son importance, le concept de RSE a attiré l'attention de plusieurs organisations de nature diverses : des ONG, des institutions européennes et internationales. Toutefois, même si la formulation de sa définition est tributaire des objectifs propres à chaque institution, toutes les définitions institutionnelles mettent l'accent sur l'approche volontaire du concept, et la notion du DD, avec la prise en compte des intérêts des PP de l'entreprise.

Par ailleurs, la revue de littérature a révélé une prolifération des définitions proposées du concept, traduisant des approches différentes, qui certes, enrichissent le débat mais complexifient le sujet.

Au terme de ce travail, il s'avère qu'après 50 ans de recherche, la RSE demeure un concept très subjectif, qui n'est pas encore abouti. Au contraire, il est un processus en cours d'évolution, perçu de différentes façons selon le courant de pensée ou de l'idéologie de l'auteur.

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Banque Centrale Et Politique Budgetaire : Une Évidence Empirique Pour La Zone CEMAC¹³

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Abstract

The purpose of this article is to analyze how the degree of independence of the Bank of Central African States (BEAC) influences the level of budget deficit for the countries of the Economic and Monetary Community of Africa Centrale (CEMAC) over the period 1994-2016. To do this, we rely on the statutory and rotational indicators of central bank governors developed by the literature, as well as on the econometrics of panel data. The results of the estimates indicate a mixed relationship between degree of independence and level of budget deficit. This result can be interpreted as an absence of constraint on fiscal policy, or as the partial assumption of cyclical stabilization by the central bank even when it is independent. It can also be interpreted as an absence of obligation for the budgetary policy to take charge of the cyclical adjustment. These results nevertheless confirm that the average orientation of fiscal policy is determined more by the budget procedure itself than by the statutes and the government of BEAC.

Keywords: Central bank independence, budget balance, CEMAC, BEAC, panel data

Résumé

L'objectif de cet article est d'analyser la manière dont le degré d'indépendance de la Banque des Etats de l'Afrique Centrale (BEAC) influence le niveau de déficit budgétaire pour les pays de la Communauté Economique et Monétaire de l'Afrique Centrale (CEMAC) sur la période 1994-2016. Pour cela, nous nous appuyons sur les indicateurs statutaires et de

¹³ Cette étude reflète les idées personnelles des auteurs et n'exprime pas nécessairement la position de la Banque des Etats de l'Afrique Centrale (BEAC) ; bien entendu les éventuelles erreurs demeurent le seul fait des auteurs.

rotation des gouverneurs de banques centrales développés par la littérature, ainsi que sur l'économétrie des données de panels. Les résultats des estimations indiquent une relation mitigée entre degré d'indépendance et niveau de déficit budgétaire. Ce résultat peut s'interpréter comme une absence de contrainte sur la politique budgétaire, ou comme la prise en charge partielle de la stabilisation conjoncturelle par la banque centrale même lorsque celle-ci est indépendante. Il peut aussi s'interpréter comme une absence d'obligation pour la politique budgétaire de prendre en charge le réglage conjoncturel. Ces résultats confirment néanmoins que l'orientation moyenne de la politique budgétaire est davantage déterminée par la procédure budgétaire elle-même que par les statuts et la gouvernement de la BEAC.

Mots clés : indépendance de la banque centrale, solde budgétaire, CEMAC, BEAC, données de panels

Introduction

Depuis l'affirmation de l'importance de l'indépendance¹⁴ des autorités monétaires vis-à-vis des autorités politiques, plusieurs travaux empiriques cherchent à renforcer cette nécessité en cherchant à établir quel est l'effet de cette indépendance sur les performances macroéconomiques (Bensafta, 2011). En général, il s'agit de trouver l'impact du degré d'indépendance des banques centrales sur l'inflation, la stabilité des prix, la croissance, la stabilité du produit et d'autres variables comme le déficit, la productivité, le chômage...etc.

Suivant la terminologie introduite par Debelle et Fischer (1994), l'Indépendance d'une Banque Centrale (IBC) peut être subdivisée en deux catégories : indépendance d'objectif et indépendance d'instrument. Cette distinction reflète toutefois celle établie par Grilli et al. (1991) entre indépendance politique et indépendance économique. Par indépendance d'objectifs, Debelle et Fischer (1994) entendent l'autonomie dont dispose la banque centrale dans le choix des objectifs finals de politique monétaire. L'indépendance opérationnelle se réfère quant à elle à la liberté effective dont dispose l'autorité monétaire dans le choix et le maniement de ses instruments pour atteindre les objectifs qui lui ont été assignés. En conséquence, elle apparaît pour une banque centrale comme un gage fort dans la conquête de la crédibilité basée sur l'engagement anti inflationniste des autorités monétaires (Avom et Bobbo, 2013).

¹⁴ Le corpus théorique qui accompagne cet argument, ou plus précisément qui propose la solution de la banque centrale indépendante, résulte des travaux menés dès le début des années soixante-dix autour d'une problématique très actuelle en théorie monétaire, celle de l'incohérence temporelle. Le problème de l'incohérence temporelle est présenté pour la première fois dans un article publié par Kydland et Prescott (1977).

Depuis les années quatre-vingt, la plupart des analyses à partir d'indicateurs quantifiés ont mis l'accent sur l'effet d'une telle indépendance sur l'inflation et son compromis potentiel avec la croissance économique (Grilli et al. (1991), Cukierman et al. (1992), Franzese (1999, 2002), Keefer et Stasavage (2003), Crowe et Meade (2008)). Néanmoins, certains auteurs ont pu montrer que les statuts de la banque centrale peuvent affecter la conduite de la politique budgétaire par deux canaux principaux. En premier lieu, l'indépendance de la banque centrale interdit d'avoir recours à la planche à billets ou à un quelconque accès privilégié au crédit pour financer un déficit des comptes publics. Elle ne permet pas non plus de dévaloriser la dette publique par l'inflation. Elle incite donc le pouvoir budgétaire à davantage de discipline. En second lieu, la spécialisation de la politique monétaire dans la lutte contre l'inflation implique que la politique budgétaire se charge de la stabilisation. Il peut arriver que l'indépendance de la banque centrale et sa spécialisation dans la lutte contre l'inflation conduisent les autorités publiques à faire un usage conjoncturel accru de l'instrument budgétaire¹⁵. La situation de la France de 1993 à 1994 peut illustrer en partie cette logique conjoncturelle (Bénassy-Quéré et Pisani-Ferry, 1994).

En Afrique, les besoins en seigneurage ont tendance à augmenter avec des déficits budgétaires des Etats. Dans la Communauté Economique et Monétaire de l'Afrique Centrale (CEMAC)¹⁶, la politique monétaire échappe au pouvoir discrétionnaire des Etats et est conduite par un institut d'émission indépendant : la Banque des Etats de l'Afrique Centrale (BEAC)¹⁷.

Déjà jusqu'au début des années 2000, très peu d'études empiriques ont portés sur la relation entre l'IBC et la politique budgétaire. La plupart d'entre elles se sont concentrées sur les pays développées et ont données des résultats mixtes et peu concluants (Neyapti, 2003).

En effet, comme le montre l'enquête réalisée par Batini et Laxton (2006) auprès d'un grand nombre de banques centrales, l'adoption du ciblage d'inflation au sein des économies émergentes et en voies de développement s'est caractérisée par une profonde réforme des statuts de la banque centrale,

¹⁵ Les banques centrales indépendantes sont favorables à la discipline budgétaire à cause de la relation de long terme qui existe entre les déficits et l'inflation. Ainsi, elles peuvent poursuivre leurs préférences en matière de politique budgétaire en raison de la hausse des taux d'intérêt et du refus de prêter au gouvernement.

¹⁶ La CEMAC est constituée de six (06) pays à savoir : le Cameroun, le Congo, le Gabon, la Guinée Equatoriale, la République Centrafricaine et le Tchad.

¹⁷ Afin de renforcer la gouvernance de la BEAC, le Comité ministériel de l'Union Monétaire de l'Afrique Centrale (UMAC) après avis conforme du Conseil d'administration de la Banque Centrale a adopté successivement deux réformes des statuts en Septembre 2007 et en Octobre 2010. Ces statuts réaffirment l'indépendance de la BEAC, en interdisant que lui soit imposé toute obligation ou contrôle autres que ceux définis dans ses statuts ou dans la convention de l'UMAC.

visant notamment à limiter voire interdire le financement monétaire du déficit public et accroître son indépendance. Or comme le précise Lucotte (2012), les recettes de seigneurage représentant une part importante des ressources publiques au sein de ces pays et les autorités budgétaires concernées sont généralement incitées à compenser cette perte de revenu par une source de financement alternative. Partant de là, la préoccupation serait alors de savoir **quel est l'impact du degré d'indépendance d'une banque centrale sur la conduite de la politique budgétaire ?** A travers cette interrogation ramenée à la zone CEMAC¹⁸, **l'objectif de ce papier est d'évaluer l'importance de l'indépendance de la BEAC sur la discipline budgétaire¹⁹ dans cette Zone.**

Cette étude apporte une contribution importante à la recherche existante à ce sujet sur deux points. Premièrement, elle fournit un cadre théorique unifiant qui relie l'IBC à la performance budgétaire et étend les tests empiriques de cette relation au-delà de la recherche dans les pays développés. Deuxièmement, nous cherchons à combler certaines lacunes dans la littérature et plus précisément en zone Franc CFA. Le reste de la rédaction sera dans l'ordre des sections suivantes : littérature, méthodologie, résultats et enfin conclusion.

Revue de la littérature : politique monétaire et politique budgétaire une double causalité

A la suite de l'étude pionnière de Sargent et Wallace (1981), une vaste littérature théorique s'est attachée à analyser les interactions entre politiques monétaire et budgétaire²⁰. Cette littérature riche et complexe peut être divisée en deux courants de recherche distincts. Le premier a montré le rôle prépondérant de la politique budgétaire dans la formulation de la politique monétaire, tandis que le second a quant à lui mis en évidence la relation inverse. Nous présentons successivement ces deux champs de la littérature théorique.

Dans un article désormais devenu célèbre, Sargent et Wallace (1981) prennent le contre-pied des thèses monétaristes en affirmant que l'inflation n'est pas simplement un phénomène monétaire, mais qu'elle peut également trouver son origine dans la conduite de la politique budgétaire. Considérant une structure de jeu non coopératif de type « poule mouillée », Sargent et

¹⁸ Voir les nouveaux critères de surveillance multilatérale de la CEMAC.

¹⁹ Plusieurs indicateurs peuvent être retenus pour apprécier le degré de discipline budgétaire des Etats. Le plus immédiat est le solde financier des administrations publiques rapporté au PIB en valeur. C'est aussi l'indicateur le plus usuel et le plus fréquemment commenté. Le second est la dette publique et troisième est le solde primaire, c'est-à-dire le solde financier hors intérêts de la dette publique.

²⁰ Pour une description simplifiée des différents scénarii possibles entre politiques monétaire et budgétaire modélisables à l'aide de la théorie des jeux, le lecteur se référera au récent article de Franta et al. (2011).

Wallace (1981) montrent en effet qu'une politique budgétaire exagérément laxiste peut contraindre la politique monétaire à se détourner de son objectif de stabilité des prix et à monétiser la dette publique, de manière à éviter que cette dernière ne prenne une trajectoire explosive. Dans les termes de Sargent et Wallace (1981), le gouvernement est alors en position de « dominance budgétaire », en ce sens que la banque centrale n'a pas d'autre choix que de s'ajuster au comportement laxiste de l'autorité budgétaire afin de satisfaire la contrainte budgétaire de cette dernière²¹. Quand bien même la banque centrale souhaiterait se montrer plus rigoureuse en choisissant un niveau de seigneurage plus faible, cela se traduira par une augmentation durable de la dette publique et donc, du seigneurage qu'il sera nécessaire de dégager dans le futur pour stabiliser cette dernière. Sargent et Wallace (1981) montrent ainsi qu'entre une autorité monétaire rigoureuse et une autorité budgétaire laxiste, c'est l'autorité monétaire qui finira toujours par céder en se détournant de son objectif de stabilité des prix.

Ce schéma, qualifié par Sargent et Wallace (1981) « d'arithmétique monétariste déplaisante », a connu un large écho dans la littérature théorique. Dans une série de contributions récentes en réponse à la forte hausse des dettes souveraines d'après-crise, Leeper et Walker (2011) et Davig et al. (2011) montrent par exemple que lorsque le taux d'endettement public a atteint ses limites et qu'aucun ajustement budgétaire n'est possible, la politique monétaire n'a pas d'autre choix que de monétiser la dette publique et de se détourner de son objectif de stabilité des prix afin de stabiliser la dette publique. La politique monétaire est alors qualifiée de « passive » par Leeper et Walker (2011) et Davig et al. (2011). Cette incitation à monétiser la dette publique sera d'autant plus forte que la part de la dette non indexée est élevée (Calvo, 1989). La conséquence directe est alors une élévation permanente de l'inflation à long terme. En outre, comme le souligne Villieu (2011), même sous l'hypothèse d'une autorité monétaire « dominante », des ratios élevés d'endettement public peuvent conduire à un accroissement de l'inflation à court terme si une monétisation future de la dette est anticipée. Les résultats de la littérature empirique ayant étudié le lien entre politique budgétaire et inflation sont toutefois relativement mitigés²².

En marge de ces différents travaux, un courant de pensées va plus loin et montre que le niveau d'inflation est indépendant de l'orientation de la politique monétaire (restrictive ou accommodante) et ne dépend que de la conduite de la politique budgétaire du gouvernement. Ce courant, initié notamment par Woodford (1994, 1995) et Sims (1994), est plus

²¹ Voir notamment Christiano et Fitzgerald (2000) pour une présentation simplifiée du phénomène de « dominance budgétaire ».

²² Voir notamment Catão et Terrones (2005) pour une synthèse des travaux empiriques relatifs à la question du lien entre politique budgétaire (dette et déficit publics) et inflation.

communément connu sous le nom de « théorie fiscale des prix ». Se plaçant dans un cadre de politique budgétaire non ricardienne, c'est-à-dire ne se souciant pas de sa contrainte budgétaire inter temporelle, ces auteurs montrent en effet que le niveau général des prix qui s'établit est le seul qui assure l'équilibre de cette contrainte. Pour Woodford (1996) et Beetsma et Bovenberg (1999), la seule façon de limiter la volatilité des prix est alors de définir des règles budgétaires et des plafonds d'endettement garantissant l'équilibre des finances publiques et la soutenabilité de la dette publique, permettant ainsi d'immuniser la banque centrale des pressions inflationnistes du gouvernement. La théorie fiscale des prix a toutefois reçu un accueil très mitigé, et nombre d'auteurs se sont attachés à en montrer les limites (Cushing (1999) et Mc Callum (2001)).

Parallèlement à ces divers travaux qui ont mis en avant les conséquences néfastes d'une politique budgétaire laxiste sur la crédibilité de la politique monétaire et souligné la nécessité d'une coordination étroite entre ces deux politiques, un second courant de recherche a quant à lui cherché à étudier la causalité inverse, c'est-à-dire l'impact de la politique monétaire sur la conduite de la politique budgétaire et fiscale. L'un des papiers théoriques fondateurs de ce courant est l'article de Tabellini (1986), approfondi par la suite par Alesina et Tabellini (1987). Dans le cadre d'un modèle statique à un pays, ces auteurs considèrent une autorité monétaire et une autorité budgétaire indépendantes, la première contrôlant le taux d'inflation, tandis que la seconde choisit le taux d'imposition lui permettant de financer les dépenses publiques. La question de l'endettement public n'est pas prise en compte dans le modèle et les deux sources de financement des dépenses publiques sont les recettes fiscales et les recettes de seigneurage. En outre, la banque centrale et le gouvernement minimisent une fonction de perte qui dépend du revenu, de l'inflation et des dépenses publiques, mais dont les coefficients de pondération attachés à chacun de ces objectifs sont différents, reflétant une divergence dans les objectifs de ces deux autorités. Partant de ces hypothèses, Alesina et Tabellini (1987) montrent alors qu'un resserrement de la politique monétaire, dont la conséquence directe est une baisse des recettes de seigneurage pour le gouvernement, va inciter ce dernier à accroître la pression fiscale afin de satisfaire sa contrainte budgétaire.

Ce courant de la littérature a par la suite connu une production relativement foisonnante, avec des travaux prenant des directions de recherche complémentaires. Certains de ces travaux ont tout d'abord cherché à approfondir les résultats d'Alesina et Tabellini (1987) en introduisant de la dynamique dans le modèle afin de prendre en compte la question de la dette publique (Van Arle et al. (1995)). D'autres travaux ont quant à eux élargi le cadre d'analyse en étudiant les interactions entre politique monétaire et politique budgétaire dans le cadre d'une union monétaire. Parmi ces travaux,

on retrouve notamment une série de contributions de Beetsma et Bovenberg (1997, 1998). Le modèle développé par Beetsma et Bovenberg (1998) montre en particulier, qu'en l'absence de coopération budgétaire, la conduite d'une politique monétaire conservatrice au sein d'une union monétaire peut inciter les gouvernements à diminuer leurs dépenses publiques, réduisant de ce fait le biais de dépenses publiques.

Plus récemment, modifiant la séquentialité du modèle développé par Huang et Wei (2006), Minea et al. (2012) ont pour leur part cherché à étudier dans quelle mesure le niveau de la cible d'inflation poursuivi par une banque centrale pouvait impacter l'effort de mobilisation fiscale du gouvernement. Conformément aux travaux précédemment cités mettant en évidence un possible impact de la politique monétaire sur la conduite de la politique budgétaire, les résultats de leur modèle suggèrent une relation négative entre le niveau de la cible d'inflation et l'effort de mobilisation fiscale du gouvernement. Plus précisément, selon ces auteurs, l'incitation d'un gouvernement à réformer son administration fiscale serait d'autant plus forte que la cible d'inflation est basse, du fait d'une baisse significative des recettes de seigneurage.

Indépendance de la banque centrale et discipline budgétaire : des résultats empiriques controversés

Dans la pratique, la probabilité qu'une autorité monétaire ne cède pas aux pressions du gouvernement est d'autant plus grande que cette autorité est indépendante du gouvernement. Il existerait dès lors une relation positive (négative) entre indépendance de la banque centrale et discipline (laxisme) budgétaire. Partant de cela, un certain nombre d'études ont cherché à tester empiriquement l'existence d'un tel lien. Ces études se sont toutefois majoritairement focalisées sur les économies industrialisées.

La première de ces études est celle conduite par Burdekin et Laney (1988) portant sur un échantillon de 12 pays de l'OCDE pour la période 1960-1983. Ces auteurs retiennent le déficit public (en % du PIB) comme variable endogène et mesurent l'indépendance de la banque centrale à l'aide d'une variable binaire, cette dernière prenant la valeur 1 si l'autorité monétaire est jugée comme indépendante et 0 autrement. Les autorités monétaires considérées comme indépendantes sont ici les banques centrales du Canada, des Etats-Unis, de Suisse et d'Allemagne de l'Ouest. Les résultats obtenus par Burdekin et Laney (1988) révèlent une relation négative et significative entre l'indépendance de la banque centrale et le niveau de déficit public. Ces résultats vont dans le même sens que l'étude de cas réalisée par Masciandaro et Tabellini (1988), qui comparent les niveaux de déficit public de l'Australie, du Canada, du Japon, de la Nouvelle-Zélande et des Etats-Unis sur la période 1970-1985. Les statistiques indiquent que la Nouvelle-Zélande, dont la banque

centrale est considérée comme peu indépendante du gouvernement, est effectivement l'économie caractérisée par le déficit public le plus élevé.

Des articles ultérieurs ont cherché à prolonger l'étude de Burdekin et Laney (1988) en s'appuyant notamment sur des indicateurs quantitatifs d'indépendance de la banque centrale récemment développés dans la littérature²³. Parmi ces études, on retrouve celle de Grilli et al. (1991), qui développent un indicateur d'indépendance légale de la banque centrale (l'IBC-GMT), distinguant indépendance économique et indépendance politique. S'appuyant sur un échantillon de 18 pays de l'OCDE pour la période 1950-1989, ces auteurs ne trouvent toutefois pas de relation statistiquement significative entre le degré d'indépendance de l'autorité monétaire et le déficit budgétaire. Des résultats similaires sont trouvés par Pollard (1993) à partir d'une analyse statistique portant sur 16 pays de l'OCDE pour la période 1973-1989 à l'aide de l'indicateur d'indépendance développé par Alesina et Summers (1993).

Suite à la publication par Cukierman et al. (1992) et Eijffinger et Schaling (1992) de deux nouveaux indicateurs d'indépendance, De Haan et Sturm (1992) ont ré-estimé la relation entre indépendance de la banque centrale et niveau de déficit public pour un échantillon de 18 pays de l'OCDE couvrant la période 1961-1987. Pour cela, les auteurs s'appuient successivement sur les quatre indicateurs d'indépendance précédemment cités. Les résultats indiquent un lien négatif entre indépendance de la banque centrale et déficit budgétaire, même si la significativité statistique de la relation varie suivant l'indicateur d'indépendance retenu et les sous-périodes considérés. Cette sensibilité des résultats à l'indicateur d'indépendance employé est confirmée par l'étude statistique menée par Bénassy-Quéré et Pisany-Ferry (1994) portant sur 20 pays de l'OCDE entre 1978 et 1992. Afin de mesurer le degré de discipline budgétaire des gouvernements, ces auteurs retiennent trois indicateurs : le déficit public, la dette publique et le solde primaire, ces trois variables étant exprimées en pourcentage du PIB. Les résultats révèlent un lien beaucoup plus ténu entre le degré d'indépendance de l'autorité monétaire et la discipline budgétaire lorsque l'autonomie de la banque centrale est mesurée à l'aide de l'indicateur de Grilli et al. (1991), que lorsqu'elle est mesurée à l'aide de l'indicateur Cukierman et al. (1992).

En outre, comme le soulignent Grilli et al. (1991), nous avons pu observer dans la plupart des pays de l'OCDE un déclin des recettes de seigneurage à partir des années 1980, alors même que les déficits budgétaires étaient relativement élevés. Dès lors, il semble que l'étude du lien entre indépendance de la banque centrale et discipline budgétaire soit plus

²³ Voir notamment Eijffinger et De Haan (1996) et Banain (2008) pour une description détaillée des différents indicateurs d'indépendance de la banque centrale développés dans la littérature.

pertinente dans le cadre des économies émergentes et en développement. Pour ces dernières, le renforcement statutaire de l'indépendance de l'autorité monétaire, traditionnellement accompagné par des mesures visant à restreindre les avances de la banque centrale au Trésor, se traduira en effet par une baisse importante des recettes de seigneurage, forçant ainsi le gouvernement à davantage de prudence dans la conduite de sa politique budgétaire.

Deux papiers empiriques se sont attachés à tester l'existence d'un lien entre indépendance de la banque centrale et déficit budgétaire au sein des pays émergents et en développement. Le premier est celui de Sikken et De Haan (1998) conduit sur un échantillon de 30 pays en développement pour la période 1972-1989. Les auteurs s'appuient sur deux mesures complémentaires de l'indépendance : l'indicateur agrégé et désagrégé de Cukierman et al. (1992) et, le taux de rotation des gouverneurs (le TOR) (Cukierman et al., 1992), qui est un *proxy* inverse de l'indépendance réelle de la banque centrale. Les résultats des estimations en coupe transversale conduites par Sikken et De Haan (1998) indiquent une relation non significative entre le degré d'indépendance et le niveau de déficit public et ce, quel que soit l'indicateur d'indépendance utilisé. Plus récemment, s'appuyant sur les mêmes indicateurs d'indépendance, Lucotte (2009) ré-estime cette relation à l'aide d'un modèle à effets aléatoires appliqué à un panel de 78 pays en développement de 1995 à 2004. Les résultats obtenus à l'aide du taux de rotation des gouverneurs confirment l'effet disciplinant de l'indépendance de la banque centrale sur les finances publiques, effet qui est non significatif lorsque c'est l'indicateur d'indépendance légale qui est considéré. Ce résultat est toutefois cohérent avec l'argument de Cukierman et al. (1992), qui montrent que pour la majeure partie des pays émergents et en développement, l'indépendance légale n'est pas une mesure pertinente du degré d'autonomie effective des banques centrales.

Enfin Bodea (2013) et, Bodea et Higashijima (2017) rapportent pour un échantillon de 23 pays démocratiques et non-démocratiques post-communistes (d'Europe de l'Est, d'Amérique latine et des Caraïbes) que l'indépendance de ces banques centrales limite les déficits budgétaires et a un effet dissuasif sur les dépenses excessives des gouvernements sur la période 1970-2007.

Le **tableau 1** ci-dessous fait un récapitulatif des principales études empiriques menées sur cette relation entre l'indépendance de la banque centrale et la discipline budgétaire.

Tableau 1 : Principales études empiriques sur la relation entre l'indépendance de la banque centrale et les déficits budgétaires

Auteurs et années	Pays ou groupes de pays	Période d'étude	Indice d'indépendance de la banque centrale	Résultats de la relation entre IBC et déficits budgétaires
Masciandro et Tabellini (1987)	5 pays industrialisés	1970-1985	Indice-GMT	Négatif et non significatif.
Burdekin et Laney (1988)	12 pays de l'OCDE	1960-1983	Variables <i>Dummy</i>	Négatif et significatif.
Grilli et al. (1991)	18 pays de l'OCDE	1950-1989	Indice-GMT	Négatifs et non significatif.
De Haan et Sturm (1992)	18 pays de l'OCDE	1961-1987	5 indices différents d'IBC	Négatif et significatif
Pollard (1993)	16 pays de l'OCDE	1973-1989	Indices d'Alesina et Summers (1993)	Négatif et non significatif.
Bénassy-Quéré et Pisani-Ferry (1994)	20 pays de l'OCDE	1978-1992	Indice-CWN et indice-GMT	Négatif et non significatif.
Sikken et De Haan (1998)	30 pays développés	1972-1989	Indice-CWN	Non significatif et ambiguïté des signes.
D'Amato et al. (2009)	55 pays dont 23 de l'OCDE et 32 non-OCDE	1980-1989	Indice-CWN	Négatif et non significatif-OCDE ; Négatif et significatif non-OCDE.
Lucotte (2009)	78 pays sous-développés	1995-2004	Indice-CWN et TOR	TOR négatif et significatif ; CWN négatif non significatif.
Mpofu Sehliselo (2012)	20 pays d'Afrique Australe, du Nord et du Sud n'appartenant pas à des unions monétaires	1990-2008	Indice-CWN et TOR	Indice TOR et CWN positifs et non significatifs.
Buderkin et Laney (2015)	14 pays d'Amérique Latine	1990-2012	Indice-CWN	Négatif et significatif.
Bodea (2013) ; Bodea et Higashijima (2017)	23 pays démocratiques et non démocratiques	1970-2007	Indice-CWN	Négatif et significatif.

Source : Construction des auteurs.

Avec : Indice-GMT : Indice d'indépendance légale de Grilli et al (1991) ; Indice-CWN : Indice d'indépendance légale de Cukierman et al. (1992) ; TOR : Indice d'indépendance réelle de Cukierman et al. (1992) / taux de rotation des gouverneurs.

Méthodologie

Nature et source des données

Les données recueillies pour cette étude sont de sources secondaires. Elles proviennent de diverses sources telles que : les bases statistiques de la Banque Mondiale dans le « *World Development Indicators* (2016) et des rapports annuels d'activités du Fonds Monétaire International, de la Banque de France, et de la BEAC.

Les données institutionnelles telles que le degré d'indépendance légale et réelle de la BEAC sur la période 2010-2016 ont été calculé par nos propres soins à partir de la méthodologie de Cukierman et al. (1992). Celles sur la période 1994-2009 ont été extraite de la base de données de Crowe et Meade (2008) du FMI *Central Bank Laws Database* et *Morgan Stanley's Central Bank Directory* (1995-2005).

Nos données sont de nature quantitative. L'étude porte sur les six (06) pays de la CEMAC (le Cameroun, le Congo, le Gabon, la Guinée Equatoriale, la République Centrafricaine et le Tchad) dont les spécificités peuvent être communes ou différentes. La périodicité est annuelle et part de 1994 à 2016²⁴.

Mesure légale et réelle de l'indépendance de la BEAC

A l'instar de Mpofo (2012), Ngniado (2016) et Garriga (2016, 2017), nous utilisons les indices de Cukierman et al. (1992) car ils sont le plus adaptés au pays en voie de développement. En effet, Cukierman, Webb et Neyapti (CWN) (1992) ont développé deux (02) indices d'indépendance de la banque centrale : un indice légal²⁵ (LIBC-CWN) et un indice réel à savoir le taux de rotation²⁶ des gouverneurs des banques centrales (TOR). Nous avons choisi cet indice sur la base de sa large popularité dans la littérature et l'analyse empirique, la disponibilité des données, la cohérence des questionnaires et formules, la facilité de calcul et les biais de subjectivité limitées.

✓ Indépendance légale de la BEAC

Pour apprécier le degré d'indépendance légale de la BEAC, nous avons eu recours dans le tableau de **l'annexe 3** comme Bessma Momani et St. Armant (2014) à la méthodologie de Garriga (2016 et 2017), inspirée de l'étude initiale menée par Cukierman, Webb et Neyapti (CWN) (1992). D'après nos calculs, l'indice d'indépendance légale (LIBC-CWN) de la BEAC

²⁴ Nous ne séparons pas la période d'étude en deux sous périodes c'est-à-dire, 1994-2009 avant les réformes statutaires de la BEAC et 2010-2016 après les réformes car, il y n'a pas une grande variation des indices d'indépendance de la banque centrale avant et après ces réformes.

²⁵ Plus cette valeur se rapproche de 1, plus la banque centrale sera dite indépendante sur le plan légal.

²⁶ Les résultats du TOR vont de 0 point (niveau le plus élevé d'indépendance réelle) à 1 point (niveau le plus bas d'indépendance réelle).

entre 2010 et 2016 est de **0.60** point ; ce qui fait d'elle une banque centrale indépendante sur le plan légal. Nous remarquons que cet indice est resté statique au fil des années et plus précisément après les réformes de 2010. De 1994 à 2009, il était également de **0.60** point (Crowe et Meade, 2008). L'analyse de Ngniado (2016) a montré que cet indice était de **0.58** point entre 2010 et 2015, ce qui n'est pas loin du nôtre. On peut évoquer ainsi une certaine portée limitée des réformes statutaires de la BEAC.

✓ **Indépendance réelle de la BEAC**

Afin de mesurer le degré d'indépendance réelle (TOR) de la BEAC sur la période 1994-2016, nous avons eu recours comme Mpfu (2012) à la méthode de Cukierman et al. (1992)

Nous constatons d'après le tableau de **l'annexe 1** que notre TOR est de **0.1304** point, soit **3** changements en **23** années. Cela fait de la BEAC une banque centrale indépendante sur le plan réel. Mais, il faut cependant remarquer qu'un taux de rotation faible ne signifie pas forcément que la banque centrale soit vraiment indépendante, car le gouverneur en place peut simplement y rester parce qu'il n'entre pas en conflit avec les autorités politiques (Mhamdi Ghrissi, 2009).

Spécification des modèles et des variables

Spécification des modèles

Partant du modèle original proposé par Barro (1974), nous pouvons spécifier les nôtres (**modèle 1** et **2**) afin de déterminer l'effet de l'indépendance de la banque centrale sur la discipline budgétaire. Ainsi, deux (02) modèles économétriques sont à spécifier à savoir : le **modèle 1** qui correspond à l'équation budgétaire en relation avec l'indépendance légale de la banque centrale (**LIBC**). Il se présente comme suit :

$$\mathbf{Ln_DEBU}_{i,t} = \gamma_0 + \gamma_1 \mathbf{Ln_LIBC}_{i,t} + \gamma_2 \mathbf{Ln_OUV}_{i,t} + \gamma_3 \mathbf{Ln_MAMO}_{i,t} + \gamma_4 \mathbf{Ln_PIB}_{i,t} + \gamma_5 \mathbf{Ln_INFLTRANS}_{i,t} + \gamma_6 \mathbf{Ln_AGR}_{i,t} + \gamma_7 \mathbf{Ln_TXURB}_{i,t} + \mathbf{Q}_i + \mathbf{Y}_t + \mathbf{Z}_{it} \quad (1)$$

Et le **modèle 2** qui correspond à l'équation budgétaire en relation avec l'indépendance réelle de la banque centrale (**TOR**). Il se présente comme suit:

$$\mathbf{Ln_DEBU}_{i,t} = \delta_0 + \delta_1 \mathbf{Ln_TOR}_{i,t} + \delta_2 \mathbf{Ln_OUV}_{i,t} + \delta_3 \mathbf{Ln_MAMO}_{i,t} + \delta_4 \mathbf{Ln_PIB}_{i,t} + \delta_5 \mathbf{Ln_INFLTRANS}_{i,t} + \delta_6 \mathbf{Ln_AGR}_{i,t} + \delta_7 \mathbf{Ln_TXURB}_{i,t} + \mathbf{U}_i + \mathbf{V}_t + \mathbf{W}_{it} \quad (2)$$

Avec : **Ln** : l'opérateur logarithme ; **DEBU_{i,t}** : le solde budgétaire en rapporté au PIB dans le pays **i** au cours de l'année **t** (dans notre analyse on

parlera plutôt de déficit budgétaire²⁷); **LIBC**_{i,t} : l'indice d'indépendance légale de la banque centrale (dont la valeur est comprise entre 0 et 1) dans le pays **i** au cours de l'année **t**; **TOR**_{i,t} : l'indice de taux de rotation des gouverneurs de la banque centrale (dont la valeur est comprises entre 0 et 1) dans le pays **i** au cours de l'année **t**; **OUV**_{i,t} : l'ouverture commerciale (somme des exportations et des importations rapporté au PIB) dans le pays **i** au cours de l'année **t**; **MAMO**_{i,t} : la monnaie et quasi monnaie (M2) en pourcentage de PIB dans le pays **i** au cours de l'année **t**; **PIB**_{i,t} : le taux de croissance réelle du produit intérieur brut par habitant dans le pays **i** au cours de l'année **t**; **TINFLATRANS**_{i,t} : le taux d'inflation (indice de prix à la consommation) transformé dans le pays **i** au cours de l'année **t**; **AGR**_{i,t} : la part de l'agriculture dans le PIB dans le pays **i** au cours de l'année **t**; **TXURB**_{i,t} : le taux d'urbanisation en pourcentage du PIB dans le pays **i** au cours de l'année **t**; **U**_i et **Q**_i : l'effet individu; **V**_t et **Y**_t : l'effet temps; **W**_{it} et **Z**_{it} : l'effet croisé; **i** : nombre de pays allant de 1 à 6; **t** : la période allant de 1994 à 2016; **γ**₀ et **δ**₀ : les constantes; **γ**₁ à **γ**₇ et **δ**₁ à **δ**₇ : les coefficients de régression relatifs aux soldes budgétaires. Chaque équation comporte les variables numérotées de 1 à 7.

Pour savoir si l'indépendance de la banque centrale a un impact sur le solde budgétaire, on étudie les coefficients suivants pour chaque équation :

- Si **γ**₁ > 0 et **δ**₁ > 0, alors l'indépendance légale de la banque centrale (LIBC) **encourage** le déficit budgétaire, et l'indépendance réelle (TOR) **aggrave** cet impact.
- Si **γ**₁ > 0 et **δ**₁ < 0, alors l'indépendance légale de la banque centrale (LIBC) **encourage** le déficit budgétaire, mais l'indépendance réelle (TOR) **atténue** cet effet.
- Si **γ**₁ < 0 et **δ**₁ < 0, alors l'indépendance légale de la banque centrale (LIBC) **décourage** le déficit budgétaire, et l'indépendance réelle (TOR) **accentue** cet impact.
- Si **γ**₁ < 0 et **δ**₁ > 0, alors l'indépendance légale de la banque centrale (LIBC) **décourage** le niveau de déficit budgétaire, mais l'indépendance réelle (TOR) **réduit** cet effet.

Présentation et justification des variables

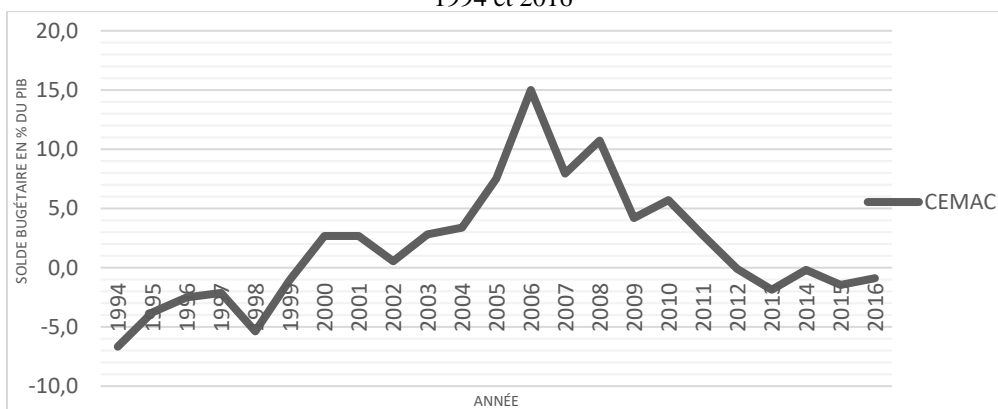
a) Variable expliquée ou endogène

Dans le modèle 1 et 2 la variable expliquée est le **solde budgétaire** (**L_n_DEBU**_{i,t}). Il évalue l'orientation de la politique budgétaire au cours d'un exercice financier. Il est égal à la différence entre les recettes budgétaires hors dons et les dépenses budgétaires hors dépenses en capital financées par

²⁷ Comme Sikken et De Haan (1998), D'Amato et al. (2009) et Mpofu (2012), nous parlerons plus de **déficits budgétaires** en lieu et place de solde budgétaire dans notre analyse car, les déficits sont caractéristiques des pays en de développement.

l'extérieur. Le solde budgétaire peut être excédentaire (solde positif > 0), déficitaire (solde négatif < 0) ou équilibré (= 0). Dans la zone CEMAC, il fait partir des critères de convergence de premier rang. Pour Guérineau et al. (2015), ce critère est au cœur du dispositif de surveillance multilatérale. En effet, plus un gouvernement influence l'autorité monétaire pour monétiser les déficits, plus le degré d'indépendance de la banque centrale est faible.

Graphique 1 : Evolution du solde budgétaire de base en % du PIB dans la CEMAC entre 1994 et 2016



Source : Construction des auteurs à partir d'Excel 2016.


Variables d'intérêts ou institutionnelles


L'indice d'indépendance légale de la banque centrale ($Ln_LIB_{i,t}$). C'est le degré d'indépendance que le législateur confère à la banque centrale. Cukierman et al. (1992) précisent que le critère utilisé pour évaluer l'indépendance légale de la banque centrale dépend de la précision apportée aux textes des lois constitutionnelles concernant l'institut. Ainsi, les banques centrales sont considérées d'autant plus indépendantes sur le plan légal que la durée du mandat des dirigeants est longue, et que le pouvoir exécutif intervient légalement peu dans la nomination et le limogeage des dirigeants, ainsi que dans la conduite de la politique monétaire. De même, une banque centrale qui limite strictement ses avances au secteur public bénéficie de plus d'indépendance et peut interdire d'avoir recours à la « planche à billets » pour financer un déficit des comptes publics (elle incite de ce fait à une discipline budgétaire). Comme Bodea (2013) et Bodea et Higashijima (2017) nous prévoyons un signe négatif pour cette variable.


L'indice d'indépendance réelle de la banque centrale ($Ln_TOR_{i,t}$). Il s'agit de la rotation des gouverneurs de banques centrales. Cet indice est obtenu en calculant le nombre de changement de gouverneurs au cours d'une période. En présupposant que le gouverneur aura du mal à mettre sur pied des politiques de long terme durant un mandat court, une rotation élevée des gouverneurs indique un faible niveau d'indépendance. Autrement dit, plus

le mandat est long, moins les pressions politiques sont importantes²⁸ et plus le taux de rotation est faible. Par conséquent, la banque centrale pourra renforcer son autonomie en impliquant une spécialisation de l'instrument monétaire dans la lutte contre l'inflation, et réduire la possibilité d'utilisation combinée des instruments budgétaire et monétaire (elle pourra ainsi affecter l'usage conjoncturel de l'instrument budgétaire). Comme Lucotte (2009), nous nous attendons à un signe négatif de la part de cette variable.

Variables explicatives ou exogènes ou de contrôles


 **Le taux d'ouverture commerciale ($Ln_OUV_{i,t}$).** Cette variable évalue l'intensité de l'intégration de l'économie nationale dans le commerce mondial et, dans une certaine mesure, la dépendance d'une économie sur la conjoncture internationale et sa sensibilité aux variations des prix internationaux. L'ouverture commerciale permet d'évaluer la force relative de la contrainte extérieure à laquelle l'économie est soumise et détermine en partie l'économie politique « espace de respiration », en particulier en matière de politique budgétaire (Blancheton, 2004). Par conséquent, un pays ayant un degré relativement élevé d'ouverture commerciale peut être plus vulnérable aux chocs extérieurs. Cette augmentation de la vulnérabilité n'est pas sans conséquence sur le solde budgétaire de l'Etat. Cependant, Combes et Saadi-Sedik (2006) mettent l'accent sur les résultats contradictoires concernant l'effet de l'ouverture commerciale sur les soldes budgétaires dans les études qui incluaient ce *proxy* de la vulnérabilité externe en tant que variable de contrôle pour les déficits budgétaires. En outre, bien que cette mesure de l'ouverture commerciale soit largement utilisée dans la littérature empirique, elle a été critiquée par certains économistes d'où l'incertitude relevé par rapport à son signe.


 **La masse monétaire ($Ln_MAMO_{i,t}$).** Elle représente la monnaie et le quasi monnaie (M2) en pourcentage de PIB. Partant de l'hypothèse d'une politique monétaire accommodante, il existe une corrélation positive entre les déficits budgétaires élevés et croissance de la masse monétaire. Miller (1983) soutient que les déficits budgétaires peuvent générer une inflation unidirectionnelle par l'éviction de l'investissement privé en raison de taux d'intérêt élevés associés à ces déficits s'ils sont monétisés. On prévoit à cet effet un signe positif pour cette variable (Fry, 1998).

 **Le taux de croissance produit intérieur brut réel ($Ln_TPIB_{i,t}$).** Il représente la variation relative du produit intérieur brut réel par tête d'une année à l'autre. Le solde budgétaire d'un pays est sensible aux fluctuations économiques. En effet, lorsque le niveau de l'activité économique est faible

²⁸ A un niveau de rotation élevé donné, la durée du mandat du gouverneur est inférieure à celui du gouvernement, ce qui fragilise ce dernier, le décourageant à mener des politiques de long-terme.


ou modéré, le montant des recettes fiscales collectées par le gouvernement diminue alors que les dépenses sociales augmentent d'où la détérioration de l'équilibre budgétaire. À l'inverse, une croissance économique plus élevée génère une amélioration du solde budgétaire (stabilisateur automatique). Ainsi, le signe de cette devrait être positif. Cependant, certains auteurs (voir par exemple Talvi et Végh, 2000) suggèrent que la politique budgétaire peut être pro cyclique dans les pays en développement avec des gouvernements laxistes ; car les pressions politiques pour accroître les dépenses publiques vont de pair avec les recettes fiscales croissantes en raison de la croissance économique. La forte augmentation des demandes fiscales au cours du boom économique s'appelle alors « l'effet de voracité » (Lane et Tornell, 1999). Ainsi, selon Woo (2003), le signe de ce coefficient est une question purement empirique.

 **Le taux d'inflation transformé ($\text{Ln_TINFLTRANS}_{i,t}$).** Il est défini comme le taux d'inflation divisé sur un plus le taux d'inflation pour le pays i à l'instant t . Cette transformation²⁹ est plus utile pour les études sur les marchés émergents et les pays en développement, qui sont caractérisées par des épisodes d'hyper inflation (Romelli, 2015). L'inflation est considérée par les économistes comme une contre-performance et par conséquent, augmente les déficits budgétaires. C'est pour cette raison que nous prévoyons un signe positif pour cette variable (Mpofu, 2012).

 **La part d'agriculture dans le PIB ($\text{Ln_AGR}_{i,t}$).** Selon Tanzi (1992), la structure économique d'un pays est un facteur important qui pourrait influencer le niveau de taxation. C'est pour cette raison que la part de l'agriculture dans le PIB est incluse dans nos modèles. Néanmoins, le signe attendu de cette variable est incertain parce que la théorie distingue deux effets opposés de la part de l'agriculture dans le PIB sur la part des impôts. Ainsi, du côté de l'offre, on s'attend à ce que la part de l'agriculture dans le PIB ait un effet négatif sur les recettes fiscales, car les contraintes politiques pourraient encourager le gouvernement à réduire l'imposition dans ce secteur, souvent fortement taxé de manière implicite par des quotas d'importation, des tarifs, et des prix contrôlés pour la production ou des taux de change surévalués (Tanzi, 1992). En outre, le secteur agricole dans les pays en développement se caractérise principalement par l'agriculture de subsistance et la prédominance des petits agriculteurs. Il semble difficile pour un gouvernement d'imposer les principaux aliments utilisés pour la subsistance (Stotsky et Wolde, 1997). À l'inverse, du côté de la demande, on s'attend à ce que la part de l'agriculture

²⁹ L'utilisation de l'inflation transformée permet de réduire l'hétéroscédasticité des erreurs et d'augmenter l'efficacité des estimateurs car, en utilisant l'inflation régulière on pourrait avoir un poids inflationnistes excessifs et des valeurs aberrantes dans notre échantillon (Cukierman et al. (1992), De Haan et Kooi (2000), Neyapti (2003), Jacome et Vazquez (2008), Arnone et al. (2008)).

dans le PIB ait un effet positif sur l'excédent budgétaire car, de nombreuses activités du secteur public sont axées sur la ville (la demande de biens et de services publics) de sorte que les dépenses publiques sont théoriquement réduites (Teera, 2003).

 **Le taux d'urbanisation ($Ln_TXURB_{i,t}$).** Cette variable est introduite dans les modèles car, Edwards et Tabellini (1991) montrent qu'il est relativement plus facile et moins coûteux pour les autorités fiscales de collecter des taxes dans les zones urbaines avec une concentration plus élevée du secteur formel que dans des zones rurales, où le degré d'évasion fiscale est particulièrement élevé (Ansari, 1982). On s'attend alors à ce que cette variable ait un signe négatif (diminution du déficit budgétaire).

Méthode d'estimation : la technique des données de panel

L'estimation des deux modèles se fera à travers la technique des données de panel non dynamique (panels statiques) utilisée récemment par Tangakou et al. (2015) et Noula et al. (2016). Les données de panel offrent un avantage incontournable parce qu'elles prennent en compte au moins deux dimensions : individuelle et temporelle. Elles contiennent des données sur plusieurs individus observés sur plusieurs dates. L'utilité des données de panel est qu'elles permettent de contrôler trois types de facteurs : Ceux qui varient entre les individus, mais ne varient pas au cours du temps ; ceux qui pourraient causer un biais d'omission si l'on n'en tenait pas compte ; ceux qui sont inobservables ou non disponibles et ne peuvent être inclus dans la régression.

Mais avant tout, quelques tests préliminaires s'avèrent nécessaires à l'application de l'économétrie de données de panel (Tests de stationnarité, test d'omission de Ramsey-Reset, test *Variance Inflation Factor* (VIF), test d'homogénéité, test de Hausman, test d'hétéroscédasticité de Breush-Pagan, test d'autocorrélation de Wooldridge, test d'endogénéité).

Présentation des résultats et enseignements

Résultats des tests

Dans le cadre de la stationnarité, nous allons émettre deux (02) hypothèses à savoir :

H0 : Absence de stationnarité ; **H1** : Présence de stationnarité.

La synthèse des résultats des tests de stationnarité est représentée dans le tableau de l'**annexe 2**. De ces tests, il en ressort que toutes les séries retenues sont stationnaires. Nous passons à présent à la synthèse des tests préliminaires et aux résultats de l'estimation de nos équations budgétaires par la méthode des Moindres Carrés Généralisés Faisables (MCGF) (voir **les tableaux 2 et 3** ci-dessous).

Tableau 2 : Présentation de la synthèse des tests économétriques préliminaires

Types de Test	Hypothèse nulle	P-value		Acceptation / Rejet	Conséquence
		Modèle 1	Modèle 2		
Modèle 1 et Modèle 2	Modèle 1 et 2	Modèle 1	Modèle 2	Modèle 1 et 2	Modèle 1 et 2
1-Test d'omission de Ramsey-Reset	Le modèle n'a pas omis des variables explicatives pertinentes	0.2878	0.2878	Accepter	Pas de variables pertinentes omis
2- Test <i>Variance Inflation Factor</i> (VIF)	1 / VIF doit être supérieur à 0.1	0.4490	0.4490	Accepter	Absence des problèmes de multi-colinéarité
3- Test d'homogénéité globale	Pas d'effets spécifiques	0.0586	0.0586	Accepter	Les effets individuels ne sont pas nécessaires
4- Modèle à effets fixes	Pas de différence systématique entre les coefficients	0.1059	0.1059	Rejet	Modèle à effet fixe non significatif
5- Modèle à effets aléatoires	Pas de différence systématique entre les coefficients	0.0017	0.0017	Accepter	Le modèle à effet aléatoire est significatif à 1%
6- Test de Hausman	Absence de corrélation entre les erreurs et les variables explicatives	0.1146	0.1440	Accepter	Le modèle à effets aléatoires est approprié
7- Test d'hétéroscédasticité de Breush-Pagan	Absence d'hétéroscédasticité	0.0030	0.0030	Rejet	Utilisation des Moindres Carré Généralisés (MCG)
8- Test d'auto-corrélation intra-individus de Wooldridge	Absence d'auto-corrélation des erreurs	0.1668	0.1668	Accepter	La structure n'est pas auto-corrélée
9- Test d'endogénéité	Absence d'endogénéité	0.276	0.276	Accepter	Exogénéité des variables suspectées

Source : Construction des auteurs à partir de Stata 13.

Tableau 3 : Résultats des effets de l'indépendance légale (modèle 1) et réelle (modèle 2) de la BEAC sur la discipline budgétaire dans la CEMAC par la méthode des MCGF

Modèle 1 Modèle 2	Variables expliquées ou endogènes					
	Variabes explicatives ou exogènes	coefficients	Standard error	z	P > z	[95% Conf. Interval]
Modèle 1	log_libc	-50.63767	90.6353	-0.56	0.576	-228.279 127.004
Modèle 2	log_tor	56.89637	101.8376	0.56	0.576	-142.701 256.494
Modèle 1	log_ouv	0.005302	0.01148	0.46	0.644	-0.01721 0.02781
Modèle 2	log_ouv	0.005302	0.01148	0.46	0.644	-0.01721 0.02781
Modèle 1	log_mamo ^a	-0.581046	0.19748	-2.94	0.003	-0.9681 -0.19398
Modèle 2	log_mamo ^a	-0.581046	0.19748	-2.94	0.003	-0.9681 -0.19398
Modèle 1	log_tpib	-0.00321	0.04081	-0.08	0.937	-0.08322 0.07678

Modèle 2	log_tpib	-0.00321	0.04081	-0.08	0.937	-0.08322	0.07678
Modèle 1	log_infra	0.089255	0.74698	0.12	0.905	-1.37479	1.553
Modèle 2	log_infra	0.089255	0.74698	0.12	0.905	-1.3747	1.553
Modèle 1	log_agri	0.030701	0.06404	0.48	0.632	-0.09481	0.15621
Modèle 2	log_agri	0.030701	0.06404	0.48	0.632	-0.09481	0.15621
Modèle 1	log_turb ^a	0.175366	0.06103	2.87	0.004	0.05574	0.29498
Modèle 2	log_turb ^a	0.175366	0.06103	2.87	0.004	0.05574	0.29498
Modèle 1	_cons	30.218	55.68983	0.54	0.587	-78.93205	139.3681
Modèle 2	_cons	-7.27665	12.66453	-0.57	0.566	-32.09868	17.54537
Modèle 1	Prob > F = 0.0143 Nombre d'observations = 138 Nombre de groupes = 6						
Modèle 2	Wald chi2 = 17.53 n = 23						
	Prob > F = 0.0143 Nombre d'observations = 138 Nombre de groupes = 6						
	Wald chi2 = 17.53 n = 23						
	^a : significativité à 1% ^b : significativité à 5% ^c : significativité à 10%						

Source : Calculs des auteurs à partir de Stata 13.

Interprétations économiques

Nos modèles 1 et 2 sont de bonnes qualités en générale. Le **tableau 3** nous informe qu'ils sont globalement significatifs au seuil de 5% car (**Prob > F = 0.0143**) est inférieur à 5%. Partant de là, plusieurs interprétations sont faites.

Les résultats des estimations indiquent que le degré d'indépendance légale (**Log_LIBC_{i,t}**) de la BEAC réduit les déficits budgétaires dans la zone CEMAC car, le signe de son coefficient est négatif (**-50.63767**) et conforme à nos prédictions. Mais malheureusement, cette variable est non significative (**modèle 1**). Cela nous fait dire qu'une augmentation d'une unité du degré d'indépendance légale de la BEAC, entraîne une diminution du déficit budgétaire de **50.63767** fois cette unité. Il existerait alors une relation négative et non significative entre ces deux variables. Ce résultat est en harmonie avec ceux de Bénassy-Quéré et Pisani-Ferry (1994), Sikken et De Haan (1998) et D'Amato et al. (2009). Il peut s'interpréter comme une absence de contrainte sur la politique budgétaire, ou comme la prise en charge partielle de la stabilisation conjoncturelle par la BEAC même lorsque celle-ci est indépendante. Il peut aussi s'interpréter comme une absence d'obligation pour la politique budgétaire de prendre en charge le réglage conjoncturel lorsque la Banque Centrale vise la stabilité des prix. Enfin, ce résultat mentionne également le manque de rigueur dans le respect des textes (statuts de la BEAC) que l'on observe généralement dans les pays en développement (Cukierman et al., 1992).

✚ Le coefficient du taux de rotation des gouverneurs de la BEAC (**Log_TOR_{i,t}**) (+**56.89637**³⁰) est positif et contraire à nos attentes (**modèle 2**). Cette variable est également non significative. Par ce résultat, une unité supplémentaire du degré d'indépendance réelle de la Banque Centrale va entraîner une augmentation du déficit budgétaire de **56.89637** fois cette unité d'où, l'existence d'un lien positif entre ces deux variables. Ce résultat en contradiction avec nos attentes, rejoint celui de Mpofo (2012). En effet, certains aspects informels et comportementaux de la relation entre la BEAC et les gouvernements de la CEMAC peuvent justifier ce résultat (les conventions entre la Banque Centrale et les Etats, les influences politiques, la qualité du Conseil d'administration de la Banque Centrale, la personnalité des individus à la tête de la Banque Centrale et la soumission ou non des Autorités Monétaires aux gouvernements).

✚ Le coefficient de la variable ouverture commerciale (**Log_OUV_{i,t}**) est positif (+**0.005302**) mais, reste non significatif (**modèle 1 et 2**). La hausse d'une unité de l'ouverture commerciale va entraîner une augmentation du déficit budgétaire de **0.005302** fois cette unité. A l'instar de Lucotte (2009), il apparaît alors une relation positive entre ces deux variables. Ce résultat mentionne la vulnérabilité des pays de la CEMAC aux chocs externes tels que la chute marquée des cours du pétrole qui perturbe profondément les soldes extérieurs et budgétaires de la Région.

✚ La variable masse monétaire (**Log_MAMO_{i,t}**) est significative à 1% (**modèle 1 et 2**). Le signe négatif de son coefficient (**-0.581046**) est inattendu. L'augmentation d'une unité de la masse monétaire va conduire à une baisse du déficit budgétaire de **0.581046** fois cette unité d'où, une relation inverse entre ces variables. Comme Brown et Yousefi (1996), nous ne trouvons pas de preuves que les déficits monétaires sont monétisés. Ce résultat peut provenir des stratégies anti-inflationnistes mis en place par le BEAC depuis 1994.

✚ Le PIB (**Log_TPIB_{i,t}**) a un coefficient négatif (**-0.00321**) dans nos deux modèles. Il apparaît dans ce contexte un impact négatif du PIB sur le déficit budgétaire mais, cette action est non significative. Un surplus d'une unité du PIB entrainera une baisse du déficit budgétaire de **0.00321** fois cette unité. Comme le souligne Talvi et Végh (2000), la politique budgétaire peut être pro cyclique dans les pays en développement et particulièrement dans la CEMAC où, la surveillance multilatérale a contribué à renforcer le biais pro cyclique de la politique budgétaire. Toutefois, un autre facteur peut justifier ce comportement pro cyclique notamment, la forte augmentation des recettes

³⁰ La valeur élevée des coefficients des variables LIBC et TOR s'explique par une faible variation de ces derniers sur la période de l'étude.

pétrolières durant la dernière décennie qui a amené les Etats à augmenter significativement leurs dépenses (Bikai, 2015).

Le coefficient de l'inflation transformée (**Log_INFTRA_{i,t}**) est positif (+**0.089255**) conformément à nos prédictions, mais il reste non significatif (**modèle 1 et 2**). L'augmentation d'une unité de l'inflation transformée va entraîner une hausse du déficit budgétaire de **0.089255** fois cette unité. Il existerait dès lors une relation positive entre ces deux variables. Ce résultat rejoint celui de Neyapti (2003) qui précise que généralement le gouvernement crée l'inflation car, il a recours tôt ou tard à la création monétaire pour financer les déficits budgétaires croissants.

La part d'agriculture dans le PIB (**Log_AGRI_{i,t}**) est non significative et son coefficient est positif (+**0.030701**) dans nos deux modèles. Une hausse d'une unité de la part de l'agriculture dans le PIB déclencherà une augmentation du déficit budgétaire de **0.030701** fois cette unité. La part d'agriculture dans le PIB encouragerait ainsi les déficits dans la CEMAC. En effet, comme l'ont souligné Stotsky et Wolde (1997), il semble difficile pour les gouvernements des pays en développement qui se caractérise principalement par une agriculture embryonnaire et la prédominance des petits agriculteurs d'imposer une taxe aux principaux aliments utilisés pour la subsistance des populations.

Le coefficient du taux d'urbanisation (**Log_TURB_{i,t}**) est positif (+**0.1753665**) et significatif à 1% (modèle 1 et 2). Le taux d'urbanisation accentue le déficit budgétaire dans la CEMAC. Une augmentation d'une unité du taux d'urbanisation va entraîner une hausse du déficit budgétaire de **0.1753665** fois cette unité. Ce résultat peut s'expliquer par un degré d'évasion fiscale particulièrement élevé pas seulement en zone rural comme le constate Ansari (1982), mais aussi dans les zones urbaines, où la corruption et les détournements de fonds publics sont les plus réguliers dans les pays de voie de développement.

Le **tableau 4** ci-dessous fait un récapitulatif entre les signes attendus et les résultats obtenus dans notre analyse.

Tableau 4 : Tableau de comparaison entre les signes attendus et les signes obtenus.

Variables	Signes attendus	Signes obtenus
Log_LIBC _{i,t}	- (négatif)	- (négatif)
Log_TOR _{i,t}	- (négatif)	+ (positif)
Log_OUV _{i,t}	+/- (incertain)	+ (positif)
Log_MAMO _{i,t} ***	+ (positif)	- (négatif)
Log_TPIB _{i,t}	+/- (incertain)	- (négatif)
Log_INFTRA _{i,t}	+ (positif)	+ (positif)
Log_AGRI _{i,t}	+/- (incertain)	+ (positif)
Log_TURB _{i,t} ***	- (négatif)	+ (positif)
Rapport de validation	Soit 25%	
Décision	Faible significativité	

Source : Construction des auteurs.

Conclusion

Depuis la crise économique de 2007, l'indépendance de la banque centrale est de nouveau un sujet très débattu. A cet effet, nombreux arguments peuvent être avancés pour justifier le lien entre le degré d'indépendance de la banque centrale et la discipline budgétaire, dans le cas particulier des économies les moins avancées. Malgré cela, très peu d'études empiriques se sont attachées jusqu'à aujourd'hui à tester la validité de ce lien dans ce contexte. La recherche conduite dans cet essai visait précisément à combler ce vide dans la littérature en évaluant l'impact de l'indépendance de la Banque des Etats de l'Afrique Centrale (BEAC) sur les déficits budgétaires dans la zone CEMAC entre 1994 et 2016.

Après avoir montré que la BEAC est une banque centrale indépendante en mesurant son degré d'autonomie légale et réelle entre 2010 et 2016, et 1994 et 2016 respectivement, deux modèles économétriques inspirés des travaux théoriques de Barro (1989) relatif au solde budgétaire ont été spécifiés. L'estimation à l'aide du logiciel Stata 13 de nos modèles empiriques nous a conduits à adopter la méthode des Moindres Carrés Généralisés Faisables appliquée aux données de panels statiques.

Les résultats que nous avons obtenus à l'issue de nos estimations mettent en lumière un impact mitigé et non significatif de l'indépendance légale et réelle de la BEAC sur la discipline budgétaire dans cette Zone. Ces résultats nous confortent puisqu'ils s'inscrivent dans la lignée de certains travaux empiriques ayant étudié ce lien dans les économies émergentes, et confirment néanmoins que l'orientation moyenne de la politique budgétaire est davantage déterminée par la procédure et la manœuvre budgétaire. Plusieurs travaux ont montré que les différences de comportement budgétaire entre les Etats sont avant tout fonction de leur structure (unitaire ou fédérale), des règles qu'ils se sont fixées pour la préparation du budget, des procédures de discussion et de vote du budget par le Parlement, et de leur degré de discipline dans l'exécution des lois de finances, ainsi que des conditions socio-politiques générales du pays. Ces facteurs sont nettement plus importants que l'effet de l'autonomie de la banque centrale. Toutefois, la fragilité de ces résultats est sous-entendue. Pour être complet, il aurait en outre fallu tenir compte d'autres contraintes de type monétaire comme le régime de change ou encore le déflateur du PIB.

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ANNEXES**Annexe 1 : Taux de rotation (TOR) des gouverneurs de la BEAC entre 1994 et 2016**

Période allant de 1994 à 2016	
Gouverneur	Taux de rotation du gouverneur = nombre de changement par durée du mandat
J.F Mamalepot (de 1994 au 1 ^{er} Août 1995)	$1 / 2 = 0.5$
J.F Mamalepot (du 1 ^{er} Août 1995 au 1 ^{er} Août 2000)	$1 / 5 = 0.2$
J.F Mamalepot (du 1 ^{er} Août 2000 au 20 Juin 2007)	$1 / 7 = 0.14$
P. Andzembé (du 12 Juillet 2007 au 17 Janvier 2010)	$1 / 3 = 0.33$
L. Abaga Nchama (du 17 Janvier 2010 à Décembre 2016)	$1 / 6 = 0.16$
Taux de rotation pour la période	Nombre de changements total / durée de la période $3 / 23 = 0.1304$

Source : Construction des auteurs d'après Cukierman et al. (1992).

Annexe 2 : Tests de stationnarité des variables

VARIABLES	TEST DE IPS				TEST LLC				Ordre d'intégration / Décision
	En niveau		En difference 1 ^{ier}		En niveau		En difference 1 ^{ier}		
	T-bar	P-Value	T-bar	P-value	LLcal	P-value	LLcal	P-value	
Log_Tinflatrans _{i,t}	- 5.0217	0.0000	-	-	- 4.7617	0.0000	-	-	I (0)***
Logt_Pibi,t	- 4.4969	0.0000	-	-	- 2.9981	0.0014	-	-	I (0)***
Log_Debu _{i,t}	- 3.4539	0.0003	-	-	- 2.1194	0.0170	-	-	I (0)*** / I (0)**
Log_Mamo _{i,t}	3.3222	0.9996	- 5.6278	0.0000	2.9671	0.9985	- 5.9966	0.0000	I (1)***
Log_Ouv _{i,t}	- 1.7394	0.0410	-	-	- 1.0627	0.1440	- 7.2974	0.0000	I (0)** / I (1)***
Log_Txurb _{i,t}	- 4.0067	0.0000	-	-	- 3.4755	0.0003	-	-	I (0)***
Log_Agri _{i,t}	- 2.4566	0.0070	-	-	- 2.7848	0.0027	-	-	I (0)***
Log_Tor _{i,t}	2.5234	0.9942	- 5.8060	0.0000	0.8575	0.8044	- 4.8459	0.0000	I (1)***
Log_Libc _{i,t}	2.5234	0.9942	- 5.8060	0.0000	0.8575	0.8044	- 4.8459	0.0000	I (1)***

Source : Calculs des auteurs à partir de Stata 13.

Avec : **I(0)** : Série stationnaire en niveau ou intégrée d'ordre 0 ; **I(1)** : Série stationnaire en différence première ou au niveau du trend ou encore intégré d'ordre 1 ; **IPS** : Im-pesaran et Shin ; **LLC** : Lin Levine et Chu ; $\alpha = 1\%$ *** ; $\alpha = 5\%$ ** et $\alpha = 10\%$ * le degré de significativité.

Annexe 3 : Construction de l'indice d'indépendance légal (LIBC-CWN) de la BEAC conformément aux statuts de 2010

Note : Les données de base sur les **16 mesures** initiales ont été regroupées en **8 critères** comme suit :

1. Les quatre variables concernant la nomination et la durée du mandat du gouverneur de la banque centrale ont été regroupées en une seule variable égale à la moyenne des quatre composantes c'est-à-dire **(1a+1b+1c+1d) /4**.
2. Les trois variables de formulation de la politique **2a**, **2b** et **2c** ont été regroupées en une seule variable en calculant une moyenne pondérée respectivement avec les poids **0.5**, **0.25**, **0.25**).
3. La variable concernant les **objectifs** a été traitée séparément.
4. Le critère **Avance** concernant les limites sur les prêts.
5. **Prêts sécurisés** dans le cadre des limites sur les prêts.
6. Le critère des **conditions des prêts** dans le cadre des limites sur les prêts.
7. Les critères des **emprunteurs potentiels** de la banque en vertu des limites sur les prêts.
8. Les quatre dernières variables du groupe ont été regroupées en une seule variable en utilisant des poids égaux à savoir **(4e+4f+4g+4h)/4**.

<i>Caractéristiques</i>	<i>Code variable</i>	<i>Poids</i>	<i>Score</i>	<i>Score choisi</i>	<i>Références statutaires</i>
1 / Indépendance des dirigeants	ID	0.20			
a) Durée du mandat	DM	0.05			
<ul style="list-style-type: none"> • ≥ 8a . • 6 à 8 ans. • 5 ans. • 4 ans. • < 4 ans ou à la discrétion du responsable de la nomination. 			1.00 0.75 0.50 0.25 0.00	0.75	Art. 50.
b) Procédure de nomination du gouverneur	PNG	0.05			
<ul style="list-style-type: none"> • Conseil d'administration de la Banque Centrale (BC). • Décision collective de la BC, des pouvoirs exécutif et législatif. • Pouvoir législatif. • Pouvoir exécutif collectivement (ex. : conseil des ministres). • Un seul ou deux représentants de l'exécutif. 			1.00 0.75 0.50 0.25 0.00	0.75	Art. 50.
c) Conditions de limogeage du gouverneur ou des membres du conseil	CLG	0.05			
<ul style="list-style-type: none"> • Non-prévu par la loi. • Pour raisons non-liées à la politique monétaire. • A la discrétion du conseil d'administration de la BC. • A la discrétion du pouvoir législatif pour motif lié à la politique monétaire. • A la discrétion du pouvoir législatif sans condition de motif. • A la discrétion du pouvoir exécutif pour motif lié à la politique monétaire. • A la discrétion du pouvoir exécutif sans condition de motif. 			1.00 0.83 0.67 0.50 0.33 0.17 0.00	0.83	Art. 53.
d) Le gouverneur ou les membres du conseil peuvent-ils exercer d'autres fonctions ?	GMF	0.05			
<ul style="list-style-type: none"> • Non • Seulement avec préalable autorisation du pouvoir exécutif. • Aucune réglementation en la matière. 			1.00 0.50 0.00	1.00	Art. 57.
2 / Formulation de la politique monétaire	FPM	0.15			
a) Qui formule le politique monétaire ?	QPM	0.05			
<ul style="list-style-type: none"> • La Banque seule. • La Banque participe mais, a peu de pouvoir. • La Banque est un conseiller du gouvernement. • La Banque n'a aucun pouvoir. 			1.00 0.67 0.33 0.00	1.00	Art. 1.
b) Poids de la Banque Centrale dans la résolution des conflits avec le gouvernement	PBRCG	0.05			
<ul style="list-style-type: none"> • La Banque a le dernier mot concernant ses objectifs tels que définis par la loi. • Le gouvernement tranche pour tout ce qui ne touche pas aux objectifs statutaires de la BC, ou en cas de conflit interne au sein de la BC. • Un conseil triparti (BC, pouvoirs exécutif et législatif) règle les conflits. • Le pouvoir législatif a le dernier mot en ce qui concerne les conflits liés à la politique monétaire. • Le pouvoir exécutif a le dernier mot pour les conflits sur la politique monétaire mais, selon un processus prévu et avec possible protestation de la BC. • Le pouvoir exécutif décide sans condition. 			1.00 0.80 0.60 0.40 0.20 0.00	0.80	Art. 6 et 7.
a) Participation de la Banque Centrale au processus budgétaire de l'Etat	PBCPBE	0.05			
<ul style="list-style-type: none"> • La Banque Centrale joue un rôle actif. • La Banque Centrale n'intervient pas. 			1.00 0.00	1.00	Art. 12 et 21.

3 / Objectifs attribués à la Banque Centrale	OBC	0.15			
<ul style="list-style-type: none"> La stabilité des prix mentionnée comme objectif unique ou prioritaire. La BC ayant le dernier mot en cas de conflit d'objectif (autres objectif : plein emploi, etc...). La stabilité des prix est l'unique objectif. La stabilité de la valeur de la monnaie est mentionnée parmi d'autres objectifs tels que solidité du système bancaire. La stabilité de la valeur de la monnaie est associée à d'autres objectifs qui lui sont incompatibles. Aucun objectif spécifié. Objectifs autres que la stabilité des prix. 			1.00 0.80 0.60 0.40 0.20 0.00	0.60	Art. 1.
4 / Limitations des crédits au gouvernement	LCG	0.50			
a) Les avances monétaires au gouvernement	AMG	0.15			
<ul style="list-style-type: none"> Aucune avance n'est autorisée. Avances permises mais dans des limites strictes (ex : maximum des avances = 15% des revenus du gouvernement). Avance permises avec les limites plutôt lâches (ex : maximum des avances = au-delà de 15% des revenus du gouvernement). Pas de limites légales. 			1.00 0.67 0.33 0.00	0.67	Art. 17 et 18.
b) Avances contre titres	ACT	0.10			
<ul style="list-style-type: none"> Pas permis. Permis mais dans des limites strictes (ex : maximum des avances = 15% des revenus du gouvernement). Permis avec les limites plutôt lâches (ex : maximum des avances = au-delà des 15% des revenus du gouvernement). Pas de limites légales. 			1.00 0.67 0.33 0.00	0.33	Art. 15 et 16.
c) Condition d'emprunt (maturité, intérêt, montant)	CE	0.10			
<ul style="list-style-type: none"> Fixées unilatéralement par la Banque Centrale. Spécifiées par les statuts de la Banque Centrale. Négociées par le gouvernement avec la Banque Centrale. Imposées par le gouvernement. 			1.00 0.67 0.33 0.00	0.33	Art. 16.
b) Emprunteurs potentiels auprès la Banque Centrale	EPBC	0.05			
<ul style="list-style-type: none"> Le gouvernement central uniquement. Tous les niveaux de gouvernement. Le secteur public (tous les niveaux du gouvernement plus les entreprises publiques). Tant bien le secteur public que privé. 			1.00 0.67 0.33 0.00	0.00	Art. 17.
e) Les limites de concours de la Banque Centrale au gouvernement définies comme :	LCBCG	0.025			
<ul style="list-style-type: none"> Montant d'argent. Fraction du capital ou du passif de la Banque Centrale. Fraction du revenu du gouvernement. Fraction des dépenses du gouvernement. 			1.00 0.67 0.33 0.00	0.33	Art. 11.
f) Maturité des prêts :	MP	0.025			
<ul style="list-style-type: none"> < 6 mois. < 1an. < 1an. Non-défini dans la loi. 			1.00 0.67 0.33 0.00	0.00	Art. 11.
g) Les taux intérêts sur les avances devraient être :	TIA	0.025			
<ul style="list-style-type: none"> > aux taux minima. = taux de marché. < Aux taux maxima. Aucune mention de taux d'intérêt. Pas d'intérêt perçu sur les avances au gouvernement. 			1.00 0.75 0.50 0.25 0.00	0.25	Art. 11.
h) La Banque Centrale peut-elle autorisée à acheter ou vendre les titres publics sur le marché primaire ?	BCAVTP	0.025			
<ul style="list-style-type: none"> Oui. Non. 			1.00 0.00	0.00	Art. 15 et 16.

Evaluating Course Syllabus: Basis for Reframing into a Learner-Centered Syllabus for Outcome-Based Nursing Education

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Abstract

The shift from customary content-based pedagogical to learner-centered practice is imperative in the 21st century. This research aims to evaluate the course syllabus developed by the faculty members and if the syllabus meets the criteria for the learner-centered syllabus. The study employed a quantitative –comparative design to properly represent the phenomenon. The study was conducted at the selected universities in the Kingdom of Saudi Arabia. Overall, the respondents of the study consist of 100 faculty members and the 50 students from the participating universities in the Kingdom of Saudi Arabia. The researchers adapted the learning-focused syllabus instrument to gather the data. Results show that the faculty members rated the learning goals and objectives to moderate (1.58), while students rated it low (1.42). Likewise, the learning assessment revealed a moderate result (1.76) for faculty members and low (1.38) for the students; the learning activities have moderate (1.69) result for the faculty and low (1.36) for the students. As regards scheduling, faculty members and students reported moderate results having a 2.06 and 2.09 respectively. The classroom

environment revealed moderate results both the faculty members (1.62) and the students (1.52). Statistically, there is no significant difference on the category of syllabi when faculty respondents were grouped according to years of teaching ($0.699 < .05$), and gender ($0.186 < .05$) but with a significant difference to courses taught ($0.001 > .05$). The findings show that the course syllabus evaluated is in a transitional phase towards learner-centered. As such, the progress of the syllabus is potential to meet the criteria for an outcome-based nursing education. However, the varying results as reported suggest reconciliation of the views of the faculty members and the students.

Keywords: Learner Centered, Syllabus, outcomes based, Transformational

Introduction

Clear expectations for learning are necessary to frame within the syllabus as education is shifting to outcomes based (Willingham-McLain, 2011). The shifting of customary pedagogical practices to outcomes-based is imperative for the learners to compete in the 21st century. This shift is, indeed, a very timely where educational institution is expected to prepare and adopt the challenges in the current trending standard. The roles of the learners at present have dramatically changed as they are put in the environment known as learner-centered. Currently, the learning structure strives to produce an empowered, informed, and responsible student by putting them at the center of the classroom. This learner-centered process theoretically embraces continued improvement in the learning quality. -While it is a learner-centered, the learners need to involve in the decision-making which inspired them to increase their sense of responsibility (Ma & Gao, 2010; Bovill, Morss, & Bulley, 2008; Weimer, 2002; Shor, 1996). Such premise will take place in the learner-centered syllabus as one way of contract with the teacher and the learners. A learner-centered syllabus is a productive tool that can ease this transformation from teaching to learner-centered classrooms. This is primarily to discuss the need of learners and allows learners to take charge of their learning that eventually leads to tangible and visible results (Habaneck, 2005). Moreover, it is an instrument to inspire learner attitudes, viewpoints, and motivation for learning (Parkes, & Harris, 2002; Weimer, 2002; Bain, 2004; Brigham Young University Center for Teaching and Learning, N.D; Grunert O'Brien, Mills, & Cohen, 2008). Researchers like Cullen and Harris (2009) view syllabi as strategies for finding the facilitators' reason to make a learner-centered environment in the classroom. Moreover, syllabus is viewed as a contract between the teacher and the learners (Eberly, Newton, Wiggins, 2001; Habaneck, 2005; Boysen, Richmond, & Gurung, 2015). To Robinson, Wolf, Czekanski, and Dillon (2014) syllabus

defines and establishes the respective duties, roles, and responsibilities of the learners and the teacher.

While educators have clearly established the purposes of the syllabus in the learning environment, it deems necessary to deliberate and develop syllabus in an institutional context. Eberly, et.al. (2001) found that many of the syllabus they inspected served only as clerical record and were considered to be topically expansive. Singham (2007) further explains that there is a commonness of syllabi as “rule infested, punitive and controlling”, and that appears confusing the learners. Moreover, an assessment of the course syllabi also disclosed that almost half of the faculty did not include most of the recommended components (Phwandaphwanda, 2003). Lin’s (2010) inferred that focusing on assessment of the syllabi reflects medium congruence with the learning-centered syllabus template. Willingham-McLain (2011) likewise stated that strong syllabi show that instructors have thought through the ways in which they expect students to learn. This includes the methods they use to diagnose and check student learning, and the connection they see between their course and the university’s mission. On the other hand, Palmer, Bach, and Streifer (2014) designed a rubric to assess the degree to which a syllabus achieves a learning-centered orientation quantitatively and qualitatively. The rubric focuses on four criteria typical of learning-centered syllabi: the learning goals and aims; the assessment activities, schedule, and overall learning environment. Accordingly, these criteria do not map with any specific section of a syllabus, however, except for the schedule; instead, users are directed to search for quality evidence on all criteria across the syllabus. The researchers used the foregoing premises as a framework for conducting this study on how to develop a learner-centered syllabus for an outcome-based nursing education.

This research is noteworthy to take off as it gives emphasis on designing the learner-centered environment that translates into the nursing practice. It aims to search for the quality evidence of all criteria across the syllabus. A careful comprehension of designing learning environment will direct the learning to focus on with the students. As such, it requires the facilitator to consider the more extensive picture when creating a guideline to adequately meet learning goals and results (Michael, 2015). This study is of paramount importance to those who commit to redesigning course syllabi for the benefit not just of the learner but also of the faculty. Also, nursing instructors who need to give future nurses a dynamic learning atmosphere that puts a premium on positive learning experiences and outcomes, and nursing students who need to experience authentic learning. With these, this study finds the agreement among nursing faculty affiliated with Saudi Higher Education Institutions (HEI) about the learner-centered environment. This includes curricula component integration within the undergraduate nursing

program and whether the current curriculum can work to address these components. The results of the study serve as a basis for reforming the syllabus to a more transformational towards a learner-centered environment. Generally, this research aims to assess the course syllabus developed by the faculty members, and if it meets the criteria for the learner-centered syllabus. The result of the assessment is a basis for framing a learner-centered syllabus in an outcome-based nursing education. Specifically, it sought to find the level of development of the learner-centered syllabus for nursing along the following dimension: learning goals and goals; learning assessments; schedule and classroom environment; and, learning activities. Lastly, it aimed to look into the differences in the strength of evidence when the faculty respondents are grouped according to age, years of teaching, and the course taught.

Methods

The researchers employed a quantitative-comparative design to properly represent the phenomenon. The study was conducted at the five selected universities in the Kingdom of Saudi Arabia. The respondents of the study consist of 100 members and 50 students from the College of Nursing at five participating universities in the Kingdom of Saudi Arabia.

The respondents were categorized into two groups: the faculty members who developed their own syllabus and the students as the end-user of the syllabus. The faculty member respondents were chosen through a simple random sampling through; defining the population, setting the sample size, listing the population, allocating the number, finding random numbers and selecting the sample. For the students, they were randomly picked by the researchers.

Instrument

A learning-focused syllabus rubric was used (Palmer, Bach, & Streifer, 2014) to gather data for this research. The tool (rubric) is an assessment which provided qualitative descriptions of components that distinguished learning-focused syllabi and used a quantitative scoring system that placed syllabi on a spectrum from content-focused to learning-focused. This rubric was developed to help in assessing to which degree a syllabus achieved a learning-centered orientation. The rubric focused on four areas: (1) Learning goals and goals, (2) assessment of activities, (3) schedule, and (4) overall learning environment. Each area was divided into multiple components reflecting what this area should look like. The respondents identified the degree they considered to have enough evidence for each area in the syllabi, by scoring the items as 1 - "strong evidence", 2 - "moderate evidence" and, 3 - "low evidence".

Ethical Consideration

Since this research is more comparative in nature, the researchers have coded the name of the universities using numbers (University 1, University 2, University 3, etc...). Consent from the participants has appropriately sought. The faculty members and the students as participants were also fully informed about their right to refuse to get involved in the study without any unfavorable consequences.

Data Analyses

The data gathered were processed through SPSS Version 21. The demographic profile was treated using frequency count and percentage. Weighted mean was used to find the extent of their agreement with the statement. The year and course taught were treated with F-test (one-way ANOVA), while T-Test was used to test the significant difference for gender.

Results

Table 1 presents the profile data of the faculty member respondents. Most of the faculty members (53%) have four-year experience, some have taught for three years (28%), and less have a two-year experience (19). Majority of the faculty members were females (64%), followed by a male with 36%. As regards to the courses taught by the faculty members, most of them taught Research (17%), Fundamental of Nursing 2(17%), and Maternal- Child Nursing (17%). The Pediatric Nursing and Fundamental of Nursing 1 have 12% each, however, 9% of the total population of the faculty members has taught Nursing Leadership and Management. Moreover, less of the faculty members have taught the Advance Critical Nursing with 7% and Community Health Nursing has a 4% share.

Table 1. Profile of the Faculty Member Respondents

Profile		f	%
Years of Experience	2	19	19
	3	28	28
	4	53	53
Gender	Male	36	36
	Female	64	64
Course taught	Pediatric Nursing	12	12
	Research	17	17
	Fundamental of Nursing 1	12	12
	Fundamental of Nursing 2	17	17
	Maternal & Child Nursing	17	17
	Critical Care Nursing	5	5
	Nursing Leadership and Management	9	9
	Advance Critical Nursing	7	7
	Community	4	4

Generally, the syllabus is perceived to be utilized to a great extent but still requires improvement in terms of its general use showing a moderate result of 1.74 both from faculty and the students. The faculty members rated the learning goals and objectives to moderate (1.58), while students rated it low (1.42). Likewise, the learning assessment revealed moderate result (1.76) for faculty members and low (1.38) for the students; the learning activity has moderate (1.69) result for the faculty and low (1.36) for the students. As regards scheduling, faculty members and students reported moderate results having a 2.06 and 2.09 respectively. The classroom environment revealed moderate results both the faculty members with 1.62, and 1.52 for the students (See Table 2).

Table 2. Category (level) of the Syllabus as rated by the Faculty members and the students

Criterion	Component	Faculty Respondents		Students	
		Mean Response	Remarks	Mean Response	Remarks
Learning Goals & Objectives	1. Learning goals encompass full range of Fink's dimensions of significant learning	1.46	Low	1.09	Low
	2. Course level learning objectives are clearly articulated and use specific action verbs	1.98	Moderate	2.18	Moderate
	3. Learning objectives are appropriately pitched	1.30	Low	1.00	Low
	<i>Grand Mean</i>	<i>1.58</i>	<i>Moderate</i>	<i>1.42</i>	<i>Low</i>
Learning Assessments	4. Objectives and assessments are aligned	1.83	Moderate	1.64	Moderate
	5. Major summative assessment activities are clearly defined	2.20	Moderate	1.73	Moderate
	6. Plans for frequent formative assessment with immediate feedback	1.30	Low	1.18	Low
	7. Assessments are adequately paced and scaffolded	1.90	Moderate	1.18	Low
	8. Grading information is included but separate from assessment; it is aligned with objectives	1.56	Moderate	1.18	Low

	<i>Grand Mean</i>	1.76	Moderate	1.38	Low
Schedule	9. Course schedule is fully articulated and logically sequenced	2.06	Moderate	2.09	Moderate
Classroom Environment	10. Tone is positive, respectful, inviting	1.69	Moderate	1.36	Low
	11. Fosters positive motivation, describes value of course, promotes content as a vehicle for learning	1.74	Moderate	2.00	Moderate
	12. Communicates high expectations, projects confidence of success	1.42	Low	1.18	Low
	13. Syllabus is well organized, easy to navigate, requires interaction	1.65	Moderate	1.55	Moderate
	<i>Grand Mean</i>	1.62	Moderate	1.52	Moderate
Learning Activities	14. Classroom activities, assessments, and objectives are aligned	1.76	Moderate	1.82	Moderate
	15. Learning activities are derived from evidence-based practices	1.89	Moderate	1.18	Low
	16. Learning activities likely to actively engage students	1.49	Low	1.09	Low
	<i>Grand Mean</i>	1.69	Moderate	1.36	Low
Overall Grand Mean		1.74	Moderate	1.74	Moderate

Legend:	1.00 – 1.50	Low
	1.51 – 2.50	Average/Moderate
	2.51 – 3.00	Strong

Table 3 reflects the difference in the category of the syllabus when faculty respondents are grouped according to the profile. It can be gleaned that the years of teaching yielded no significant difference ($0.699 < .05$). Likewise, the gender shows no significant difference as evidence by a higher p-value compared to .05 level of significance. On the other hand, the courses taught by

the faculty members show a significant difference having a p-value of 0.001 compared to .05 level of significance.

Table 3. Difference in the category of the syllabus when faculty-respondents are grouped according to professional profile.

	Profile	Mean Response	P-value	Remarks
Year of experience	2	1.77	0.699	Not Significant
	3	1.74		
Gender	4	1.72	0.186	Not Significant
	Female	1.76		
Course Taught	Male	1.70	0.001	Significant
	Basic	1.99		
	Pediatric	1.73		
	Research	1.62		
	Fundamental 1	1.86		
	Fundamental 2	1.69		
	Maternity	1.81		
	Critical Care	1.92		
	Nursing Leadership & Management	1.65		
	Advance	1.81		
	Community	1.71		
	Medical Surgical	1.67		
Mental	1.52			

Table 4 shows the difference in the category of the syllabus as rated by the faculty members and student evaluators. As seen in the table, their responses yielded a t-value of 2.640 with a P-value of 0.009. Since the P-value is less than 0.05 level of significance, this means that there is a significant difference on the category of the syllabus as rated by the faculty and the student evaluators. This implies that the faculty and evaluators have varied ratings on the category of the syllabus. The faculty rated more highly the syllabus than the student evaluators. The result suggests that faculty and the student evaluators have different perspective and standards as regards category of syllabus. Although both groups of respondents are concerned with the needs of learners, there exists slight difference along certain areas.

Table 4. Significant Difference in the Category of the Syllabus when rated by the Faculty and Students

Respondents	Mean Response	t-value	P-value	Remarks
Faculty	1.74	2.640	0.009	Significant
Students	1.56			

Discussions

The low to moderate variations on the ratings of the two groups of respondents suggest that there is much to do to improve the syllabus. It is of paramount importance to note that syllabus is a document that sends a strong message to learners. As such, this serves as the learners' guide to meet what is expected of them. Indeed, it is clearly important to let learners understand the intentions that are accomplished by way of well-planned and well-written syllabus distributed to learners. Accordingly, the learners acquire more knowledge successfully when intentions and expectations of the facilitator about the courses have been fully understood (Habaneck, 2005). Consequently, the learning objectives of the syllabus in this study are believed to be set and clear reported as moderate. While the faculty member has set clear learning objectives, learners may then assess their own learning improvement. It has been concluded by Ludwig, Bentz, and Fynewever (2011) that to become an active and independent learner, one must understand the learning objectives and feedback mechanisms to self-assess one's progress. In a study of Saville and colleagues (2006) learners who obtained a precise and detailed syllabus (including learner-centered elements) recognized the facilitator as possessing much higher levels of master-teacher behaviors.

The transitional stage of the syllabus as reported serves as a springboard towards an appreciative response to the teaching success. This at the end can use to advance and facilitators' professional skills. Strong syllabi show that instructors have thought through the ways in which they expect students to learn. As such, it includes the methods used to diagnose and test student learning, and the connection they see between their course and their university's mission (Willingham-McLain, 2011). Of interest in the results of this study, it shows that the faculty members sustained commitment to align all the learning activities with the outcomes that are expected from the students. In the long run, this increases their rating from moderate to high as they aspire to give more challenges and opportunities for the students to meet the set outcomes. As Killen (2007) stated that what is most significant to the learners is to engage in a challenging task that helps them to discover and develop the best of their ability. According to Emes and Martha (2003), learner-centered curriculum creates highly developed students. As such, it gives skills in the pursuit of creating learning experiences and abstracting present knowledge within the curriculum.

On the other hand, little research explicitly investigates the view of the students about the syllabus. Learners are the end-user of the syllabus, such that their involvement in the syllabus development should take place. The low to moderate results evaluation reported by the students imply that learners view the syllabus as transitional and there needs to figure out their own learning. As Davis and Shrader (2009) mentioned, learners preferred a syllabus with a learner-centered approach. Further, fostering the involvement of the learners to in the development of, and assessment of the syllabus is recommended considering the tone and respect to the learners. As explained by Baeten, Struyven, and Dochy (2013), the facilitator who is focuses on learner-centered approach gives students opportunities to explore topics of interest in-depth by adhering less strictly to course content. This current result indeed serves as a basis for framing the syllabus to a more transformational syllabus towards a learner-centered environment.

Conclusion

The findings show that the course syllabus assessed is in the transitional phase towards learner-centered. As such, the progress of the syllabus evaluated is potential to advance and meet the criteria for an outcome-based nursing education. However, the varying results as reported suggest reconciliation of the views of the faculty members and the students.

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Initial Public Offerings Short and Long Term Performance of MENA Countries

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Abstract

This study examines a comprehensive set of 162 Middle East and North Africa (MENA) Initial Public Offerings (IPO's) for the period 2001-2015, considered the first and most comprehensive data set investigated to date. Results confirmed that IPO performances are mixed among MENA countries classified into three groups. The first group comprises countries whose IPOs over-performed the Benchmark portfolio over the short-run, but underperformed over the long-run. The second group comprises countries where IPOs underperformed the Benchmark portfolio over the following 60 months post-listing date where such underperformance became quite significant over the long-run in comparison to the short-run. The third group comprises countries whose IPOs experienced cyclical performance change from over-performance to under- performance and vice versa. Overall, the IPOs went through cycles of price corrections around the fundamental value over the long term when compared to the short term performance.

Keywords: IPOs, Investment decision, Assets allocation

Introduction

The literature is extensive, and indicates that initial public offerings (IPOs) tend to be underpriced in the short run, and then underperform the benchmark for three to five years following the offering date. For instance, Ibbotson (1975), Aggarwal and Rivoli (1990), Ritter (1991), Loughran and Ritter (1995), Levis (1993), Keloharju (1993), Rajan and Servaes (1997), Espenlaub et al. (2000), Mitchell and Stafford (2000), Jelic and Briston (2003), Lyn and Zychowicz (2003), Schultz (2003), Lee et al. (2011), and Tomasz and Joanna (2012) note that, in general, excess returns over a three-to-five-year period after an offering are negative and significant. This was the case regardless of the employed benchmark. However, these studies also found that, over a five-year period, the underperformance was less dramatic

and less sensitive to the benchmark employed. Evidence of long-run returns for IPOs is less extensive than that of short-run returns. Similarly, explanations for poor abnormal post-listing returns are relatively less developed than those for initial returns. Therefore, this study explores the short- and long-run performance of IPOs in the Middle East and North African (MENA) region, revealing new evidence on IPO activity.

This paper contributes to the IPO literature in three ways. First, examining the short- and long-term IPO returns of companies located in the MENA region is important because it will provide new and useful knowledge for professionals and academics on the performance of IPOs, thus, providing additional evidence of post-listing returns for IPO firms. To the best of the author's knowledge, no such studies have been conducted on this region. Consequently, the results of this study will enhance decision-making on investments in IPOs, as well as on the holding period for such investments. The data set used in this study includes all floated companies in the MENA region, and is the first and most comprehensive data set to be investigated to date.

Second, the long-term return performance of IPOs is important for decisions on the asset allocation of a portfolio. It is also important in searches across investment strategies that include anomalies, and have the potential to produce excess returns. Hence, the findings of this study are important for inferences on the efficiency of markets in the MENA countries. Moreover, it may improve estimates of expected risk and return and, thus, help in portfolio management and risk assessment. Third, this study employs a comprehensive cross-country data set covering emerging and developing markets, which generally lack regulation, transparency, and the adoption of international standards (including financial reporting and corporate governance standards). Therefore, by investigating the short and long run after IPO listings, this study is able to lay to rest assumptions of previous empirical studies that are constrained by the number and diversity of companies, timescales, and investment levels dictated by varying levels of development.

The two approaches are applied: BHAR and CAR. The results are consistent in all models. The first group of countries (Tunis, Morocco, Egypt, and Oman) show average abnormal returns, indicating that the IPO portfolios are underpriced relative to the benchmark portfolio over the short run, with some diversity in this group. However, in the long run, the IPOs underperformed relative to the benchmark. Furthermore, within this group, Morocco is considered an extreme case, where the results show positive cumulative excess returns for the firms for 12 months after the IPO date. However, beginning in the second year after the IPO, companies in general underwent significant price corrections that lasted approximately 18 months, producing negative cumulative abnormal returns for up to five years, post-

issue. The second group of countries represents Jordan, Qatar, and Bahrain, where the IPO portfolios were overpriced (underperformed) relative to the benchmark portfolio. However, such over-pricing is more severe and significant in the long run than it is in the short run. The last group of countries represents Kuwait, the UAE, and Saudi Arabia, where IPO portfolios experienced cyclical price corrections, from positive to negative, and vice versa, relative to the fundamental common stock value over time after an offering.

The IPO portfolios in the MENA countries covered here are all going through a process of price correction around the fundamental common stock values, irrespective of whether the portfolios have over-performed or underperformed relative to the benchmark portfolio in the short or long run. Based on this study's empirical findings, it is suggested that short-term and long-term investors should be cautious when analysing IPO firms in the MENA region, because IPO performance is country-dependent. Furthermore, the over-performance of IPOs in the short-run could encourage management to manipulate their company's market value by underpricing publicly offered stock. Such over-performance (or underpricing) will vanish over the long-run, making the overall process a zero-sum game as soon as the stock market realizes the common stock fundamental value. In conclusion, after an offering, IPO portfolios experience cyclical price corrections over time, relative to the fundamental common stock value.

The remainder of the paper is structured as follows. The second section discusses prior empirical studies on this topic. The third section describes the data and research methods employed here, and the fourth section discusses the results. The final section concludes the paper.

Literature review

IPOs of shares are frequently issued at prices substantially lower than the market price on the first day of listing. This is based on the argument that at the heart of every IPO process are informational issues between the various actors, which potentially lead to IPO underpricing and, thus, to short-term over-performance. However, empirical studies show that the long-term returns for IPOs underperform, restoring equilibrium after the short-term IPO underpricing subsequent to the listing date. These results have been found in both developed and emerging stock markets, although much higher initial returns have been found in emerging markets [Aggarwal et al. (1993); Aggarwal and Rivoli (1990); An and Chan (2008); Baron and Holmstrom (1980); Beatty and Ritter (1986); Beatty and Zajac (1994); Booth and Chua (1996); Brau and Fawcett (2006); Chan and Lo (2011); Friesen and Swift (2009); Grinblatt and Hwang (1989); Ibbotson (1975); Jelic and Briston (2003); Jenkinson and Ljungqvist (1996); Jewartowski and Lizińska (2012);

Lee et al. (2011); Levis (1993); Lin et al. (2008); Ljungqvist (1997); Ljungqvist (2007); Loughran et al. (1994); Loughran and Ritter (1995, 2000, 2002); Lyn and Zychowicz (2003); Purnanandam and Swaminathan (2004); Rajan and Servaes (1997); Ritter and Welch (2002); Wu and Kwok (2003)].

In explaining underpricing over the long-term, the research on IPOs is less conclusive on the reason behind the generally poor performance. Several theories have been developed, including signalling theory [Leland and Pyle (1977); Welch (1989); Datar and Mao (2006); Francis et al. (2010)], the information asymmetry hypothesis [Beatty and Ritter (1986); Chan and Lo (2011); Deb and Marisetty (2010); Ljungqvist et al. (2003); Rock (1986); Schenone (2004)], the institutional explanation [Hensler (1995); Hughes and Thakor (1992); Ruud (1993)], behavioural imperfection theory [Friesen and Swift (2009); Ljungqvist et al. (2003); Loughran and Ritter (2002); Purnanandam and Swaminathan (2004); Ritter and Welch (2002)], the opportunity hypothesis [Loughran and Ritter (1995); Rajan and Servaes (1997); Ritter (1991); Wu and Kwok (2003, 2007)], and the divergence of opinion hypothesis [Jelic and Briston (2003); Jewartowski and Lizińska (2012); Lyn and Zychowicz (2003)]. Therefore, while studies on US and international IPO initial returns have been consistent, the nature and underlying contributing factors of IPO long-term performance are still unclear.

Early studies focused on US firms, and reported positive initial returns and negative returns in the long run. For example, Ibbotson (1975) revealed average positive initial returns of 15.3 per cent and negative returns in the three years after going public. Similar results in the US market confirmed that, in general, IPOs tend to be underpriced in the short run, and then underperform relative to the benchmark in the following three to five years [An and Chan (2008); Chan and Lo (2011); Loughran and Ritter (1995); Philip et al. (1996); Rajan and Servaes (1997); Ritter (1991)].

According to Ritter and Welch (2002), from 1980 to 2001, the average IPO return is 18.8 per cent in the first day, and then -23.4 per cent over the next three years. Investigating Polish IPOs for the period 1991–1999, Jelic and Briston (2003) find that the mean market-adjusted initial return of the IPO sample is 27.37%. However, in the three years after an offering, there is a negative cumulative long-run adjusted mean return, ranging from -37.8 to -26.5%, for the buy-and-hold methodology. Jaskiewicz et al. (2005) find that the underperformance usually persists for up to three to five years after a listing. Examining IPO performance in the UK market, Levis (1993) reports an average initial return of 14.5 per cent, and negative long-run performance ranging from 8 per cent to 23 per cent, depending on the benchmark portfolio constructed. The same scenario applies in Ljungqvist's (1997; 2007) studies of the German and US markets, respectively. Alvarez and Gonzalez (2005)

study the Spanish market, and document similar results, confirming that the initial returns of IPOs are positive, but become negative in the long run.

Studying 221 publicly traded firms in US stock markets over the period 1993–2000, Friesen and Swift (2009) find positive cumulative excess returns for the firms for 12 months after an IPO date. However, beginning in the second year after the IPO, the average firm in their sample undergoes a significant price correction that lasts approximately 18 months, producing negative cumulative abnormal returns for up to five years, post-issue. They argue that the thrifths in their sample appear to go through a cycle of overreaction and subsequent correction after the IPO. Such results are consistent with the results of Purnanandam and Swaminathan (2004) and Daniel et al. (1998), although different methods were applied in calculating excess returns attributed to investor overreaction. In contrast to the above results, Aussenegg (2000) reports positive initial returns and market-adjusted three-year returns of 38.5% and 11.5%, respectively, for IPOs in the Polish stock exchange. Furthermore, Lyn and Zychowics (2003) documents significant first-day underpricing of 54.45%, but does not find significant evidence of underperformance in the three years after an offering. Instead, the results show values of -4.11%, 3.4%, and -24.44% after one, two, and three years, respectively.

Many other empirical studies covering emerging markets find similar results, but with much higher values because of the level of risk in such markets [Aggarwal et al. (1993); Aggarwal et al. (2008); Dawson (1987); Ghosh (2005); Lee et al. (2011); Lin et al. (2008); Omran (2005); Seshadev and Prabina (2010); Sohail and Nasr (2007)]. These studies conclude that the more risky the market in terms of information asymmetry and transparency, the more extreme positive/negative returns will be in the short and long run. For example, Seshadev and Prabina (2010) investigated the IPO performance (short-run underpricing and long-run underperformance) of 92 Indian IPOs over the period 2002–2006. On average, the Indian IPOs are underpriced by 46.55 per cent on the listing day relative to the market index. The long-run returns (up to a period of 36 months) are measured using the wealth relative (WR) and buy-and-hold abnormal rate of return (BHAR), adjusted by the market index. The results show that the underperformance is most pronounced during the initial year of trading (i.e. up to 12 months after the listing date), followed by over-performance in longer periods. The most recent study conducted by Jewartowski and Lizińska (2012), on IPOs recorded by the Warsaw Stock Exchange from 1998 to 2008, reports that the IPOs overperformed in the short term by 13.95% and underperformed by 22.62% in the three years after a listing, employing the buy-and-hold strategy.

Another stream of research on long-term IPO studies relates long-term IPO performance to other factors, such as tax-efficient compensation

[Rydqvist (1997)], global versus domestic IPOs [Wu and Kwok (2003, 2007)], prior debt offering [Cai and Lee (2005)], block sales on short-run trading days [Pukthuanthong-Le and Varaiya (2007)], underwriter reputation [Beatty and Ritter (1986); Carter et al. (1998); Chemmanur and Liu (2003); Maksimovi and Unal (1993)], government penalty regulations [Kao and Yang (2009)], public information versus negative information [Kutsuna et al. (2009)], pre-IPO earnings management [Xiong et al. (2010)], credit rating [An and Chan (2008); Chan and Lo (2011)], market feedback [Bommel and Vermaelen (2003)].

The most recent studies focus on security grading by independent rating agencies [Deb and Marisetty (2010)], the existence of IPO-related competitive advantages over industry competitors [Hsu et al. (2010)], country-specific institutional characteristics in terms of legal framework quality [Engelen and Essen (2010)], financial market integration [Francis et al. (2010)], risk proxies [Sahoo and Rajib (2011)], transparency in IPO mechanisms and retail investors' participation [Neupane and Poshakwale (2012)], and institutional development and IPOs underpricing performance [Robinson and Robinson (2012)].

This study tests the implication of the asymmetry hypothesis by employing a comprehensive cross-country sample of IPOs in the MENA region, where the countries' economies range from developing to emerging. The study focuses on those IPOs of non-financial services companies to measure their performance over the short and long run. Most empirical studies reviewed on IPOs employ either the buy-and-hold abnormal return (BHARs) and/or cumulative abnormal returns (CAR). This study employs the same strategies.

The IPO literature to date is unclear on the MENA markets. The purpose of this study is to evaluate the post-issue share price performance of IPOs issued and listed on the MENA stock exchanges for the period 2001–2015. To the best of the author's knowledge, this region has not yet been examined in the literature.

Sample selection and research methodology

Sample selection

The data set includes a comprehensive sample of MENA IPOs from June 2001 to June 2015. The sample is identified by examining common equity offerings reported in *Bureau van Dijk (Zephyr Database)*. The selected companies' daily share prices were collected from the *Bloomberg Database*. The following criteria were employed:

- i. Firms are non-financial service companies.
- ii. IPOs are common stock only, where firms have only one class of common stock outstanding.

- iii. The IPO completion price (offer price) and date are clearly identified.
- iv. Firms are listed on stock exchanges, and daily prices over the study period are available.

Methodology used to measure the short- and long-run IPO returns

The intention was to structure the IPO and benchmark portfolio returns using the value-weighted and equal-weighted approaches. However, because of the unavailability of the number of outstanding common shares of some IPOs, the equal-weighted approach alone is used. Therefore, the IPOs short- and long-run performance are evaluated by constructing the portfolio returns on an equal-weighted basis. The abnormal return is derived as follows:

$$AR_{it} = R_{it} - R_{bt}, \quad (1)$$

where AR_{it} is the abnormal return on the IPO, and t is the period of investment (in days). A positive AR_{it} for a specific day is interpreted as a better performance for the IPO relative to the benchmark return on the same day.

Here, R_{it} is the equally weighted arithmetic average of the continuously compounded return on the IPO, and R_{bt} is the equally weighted arithmetic average of the continuously compounded return on the benchmark portfolio, which contains all listed companies other than those included in the IPO portfolio. Consequently, the R_{it} derived from these benchmarks represents the daily abnormal return on the portfolio of IPOs. The following series of IPO abnormal returns are constructed:

Short-term: 10, 30, 90, and 120 days.

Long-term: 12, 24, 36, and 60 months.

The R_{it} and R_{bt} are the arithmetic averages of the continuously compounded returns on the specified portfolio, computed as follows:

$$R_{it} = \frac{1}{n_{\tau,t}} \sum_{i=1}^{n_{\tau,t}} r_{it} \quad (2)$$

where $n_{\tau,t}$ is the number of firms in the portfolio and r_{it} is the return of firm i , which is included in that day. A security i return on day t , computed as the natural logarithm of one plus the realized daily return, is calculated as follows:

$$r_{it} = LN \left[\frac{(r_t - r_{t-1})}{r_{t-1}} \right] * 100, \quad (3)$$

where r_t is the closing price on day t , and r_{t-1} is the previous day's closing price. Furthermore, the average $\overline{AR_{it}}$ for the entire sample in each constructed series is also calculated to find out the overall performance of the IPO

portfolios for a specific period. The \overline{ARit} is computed as the arithmetic average of abnormal returns on all IPOs in the sample of size N, as follows:

$$\overline{ARit} = \frac{1}{n_{\tau,t}} \sum_{i=1}^{n_{\tau,t}} AR_{it} \quad (4)$$

A positive \overline{ARit} for a specific time series is interpreted as a better performance for the IPOs compared to the benchmark return for the same period.

Three measures are used to gauge the short- and long-run returns of listed companies. The first is the IPO return in excess of the market returns (i.e. BHAR), and the second is the CAR, measured as follows:

$$BHAR_{(T1,T2)} = \left[\prod_{t=T1}^{T2} (1 + R_{it}) \right] - \left[\prod_{t=T1}^{T2} (1 + R_{bt}) \right] \quad (5)$$

$$CAR_{(T1,T2)} = \sum_{t=T1}^{T2} (R_{it} - R_{bt}) \quad (6)$$

where R_{it} is the daily return for firm i on day t , and R_{bt} is the daily return on the benchmark firm included in the benchmark portfolio measure, on an equally weighted basis. The holding horizon begins on the first day (T1) after the day on which an IPO is completed. If an issuing firm is delisted, the study truncates its BHAR and CAR on that date. Both methods, BHAR and CAR, have been commonly and extensively used in the literature [Fama (1998); Mitchell and Stafford (2000); Wu and Kwok (2007)].

Empirical results and discussion

A total of 365 IPOs took place over the investigated period, and were considered as the initial sample. Then, 89 were excluded from the sample because they were identified as investment trust and financial firms, and a further 114 IPOs were eliminated because of data unavailability. Thus, the final sample comprised 162 IPOs of ordinary shares by firms on the MENA stock exchanges (i.e. those in Tunisia, Morocco, Egypt, Jordan, Saudi Arabia, the UAE, Bahrain, Qatar, Oman, and Kuwait).

Table (1) shows the distribution of the IPOs among the MENA countries. The table reveals there is considerable variation in the number of IPOs among the countries involved.

Table (1): The distribution of the IPOs by country (2001–2015)

	TN	MA	JO	EG	KW	QA	BH	OM	AE	SA	Total
Included IPOs	4	19	8	25	23	7	6	4	22	44	162
	2.6	11.7	4.9	15.4	14.2	4.3	3.7	2.6	13.6	27	100%
Financial Firms IPOs	8	9	19	5	6	7	3	1	16	15	89
	9	10.1	21.4	5.6	6.7	7.9	3.4	1.1	18	16.8	100%
Unavailable Data IPOs	1	6	11	61	10	7	2	5	9	2	114
	0.88	5.3	9.7	53.51	8.8	6.1	1.7	4.4	7.9	1.7	100%
Total	13	34	38	91	39	21	11	10	47	61	365
	3.5	9.3	10.4	25	10.7	5.8	3.0	2.7	12.9	16.7	100%

Table (1) shows that Saudi Arabia, the UAE, Kuwait, and Jordan generate over 50% of the IPOs in the sample, with Saudi Arabia leading in terms of the overall number of IPOs. However, after applying the sample selection criteria, Saudi Arabia, Egypt, Kuwait, and the UAE then include more than 70% of the IPOs in the sample, with Saudi Arabia leading (27% of the sample). Surprisingly, 53% of the excluded IPOs were from the Egyptian stock market, owing to the unavailability of required data. Finally, over 38% of the IPOs of financial firms that were excluded from the investigation belong to the Jordanian and Saudi Arabian stock markets.

Table (2) shows the distribution of IPOs over time. Most of the IPOs are concentrated in the period 2006–2010, peaking in 2007 (21.6% of all IPOs). On the other hand, the lowest number of IPOs is seen during the period 2001/2002 (1.24%).

Table (2): The distribution of the IPOs by year (2001–2015)

	TN	MA	JO	EG	KW	QA	BH	OM	AE	SA	Total	%
2001	0	1	0	0	0	0	0	0	0	0	1	0.62
2002	0	0	0	1	0	0	0	0	0	0	1	0.62
2003	0	0	0	2	0	0	0	0	0	0	2	1.23
2004	0	1	0	1	0	1	0	0	2	0	5	3.09
2005	0	1	0	3	1	0	1	0	4	2	12	7.41
2006	0	2	2	2	3	1	2	0	1	4	17	10.49
2007	2	5	2	3	4	2	1	2	5	9	35	21.60
2008	2	2	1	4	3	0	1	1	4	7	25	15.43
2009	0	0	0	2	4	2	0	0	3	6	17	10.49
2010	0	1	0	2	3	0	1	0	0	5	12	7.41
2011	0	1	1	1	1	0	0	0	0	4	8	4.94
2012	0	1	0	1	0	0	0	0	0	1	3	1.85
2013	0	1	1	1	2	0	0	0	2	3	10	6.17
2014	0	2	1	1	2	0	0	1	1	2	10	6.17
2015	0	1	0	1	0	1	0	0	0	1	4	2.47
Total	4	19	8	25	23	7	6	4	22	44	162	100

By applying the BHAR and CAR approaches, abnormal returns series are generated for the IPOs in the MENA countries over periods of 10, 30, 90, and 120 days, representing the short term, and 1, 2, 3, and 5 years, representing

the long term (see Table (3)). The average abnormal return for countries such as Tunis, Morocco, Egypt, and Oman show that the IPO portfolios underpriced the benchmark portfolio over the short run, with some diversity even among this group (the IPO portfolios in Tunis, Egypt, Oman, and Morocco are underpriced 10 days, 2 months, 3 months, and 12 months after the listing date, respectively). However, in the long run, the IPOs underperformed relative to the benchmark. These findings have strong support from previous empirical studies on developed and developing countries [Aggarwal et al. (1993); An and Chan (2008); Chan and Lo (2011); Friesen and Swift (2009); Ibbotson (1975); Jelic and Briston (2003); Jewartowski and Lizińska (2012); Lee et al. (2011); Levis (1993); Lin et al. (2008); Ljungqvist (2007); Loughran and Ritter (1995); Philip et al. (1996); Purnanandam and Swaminathan (2004); Rajan and Servaes (1997); Ritter (1991); Ritter and Welch (2002); Wu and Kwok (2007)]. In the case of Morocco, within the first group, the results show positive cumulative excess returns for the firms for 12 months after the IPO date. However, beginning in the second year after the IPO, companies underwent significant price corrections, in general, that lasted approximately 18 months, producing negative cumulative abnormal returns for up to five years, post-issue. The thrifths in the sample appear to go through a cycle of over-reaction and subsequent correction after an IPO. These results are largely consistent with those of Daniel et al. (1998), Purnanandam and Swaminathan (2004), and Friesen and Swift (2009).

Jewartowski and Lizińska (2012) introduce two possible explanations for positive initial abnormal returns. The first explanation for IPOs being underpriced at the initial offering is highlighted in more detail by Ljungqvist (2007). The second explanation could be that the IPOs are overvalued in the early aftermarket trading because of stock market inefficiency, as suggested by Aggarwal and Rivoli (1990). Miller (1977) discusses the divergence of opinion hypothesis in the presence of short sale restrictions, stating that the most optimistic investors determine the price in early aftermarket trading. Because these restrictions characterize IPO markets, we should expect IPOs to be overvalued in the early aftermarket. Since divergence of opinion should decline over time, this may lead to long-run underperformance.

Table (3): BHAR and CAR

Country	Abnormal Return	Short-Term					Long-Term			
		10 days	1 month	3 months	4 months	12 months	24 months	36 months	60 months	
TN	BHAR	0.0161	-0.0319	0.0631	0.2192	0.5818	-0.5580	-	0.7297	0.8151
	CAR	0.0164	-0.0304	0.0542	0.2106	0.5183	-0.4029	-	0.3772	0.4101
MA	BHAR	0.1250	0.1109	0.1157	0.1027	0.0246	-0.3629	-	0.5112	1.1814
	CAR	0.1366	0.1221	0.1308	0.1249	0.0727	-0.7264	-	0.7035	0.7074
JO	BHAR	-0.0114	0.0287	0.0129	0.0436	0.1923	-0.2572	-	0.2584	0.1944
	CAR	-0.0113	0.0280	0.0121	0.0512	0.2319	-0.2589	-	0.4368	0.4559
EG	BHAR	0.0222	0.0083	-	-	-	-2.0855	-	4.2528	2.4090
	CAR	0.0246	0.0150	0.1871	0.2226	0.3932	-1.0133	-	1.3573	1.1136
KW	BHAR	-0.0242	0.0886	0.0984	0.1029	-	-0.2418	-	0.1686	-0.106
	CAR	-0.0240	0.0852	0.0909	0.0951	0.0213	-0.1831	-	0.2577	-0.231
QA	BHAR	-0.1378	0.1770	0.5413	0.5538	0.4490	-0.9611	-	1.1201	0.8450
	CAR	-0.1341	0.1681	0.4449	0.4966	0.1888	-0.6192	-	0.5853	0.5691
BH	BHAR	-0.2180	0.4397	0.4908	0.6362	0.6633	-0.9000	-	0.5969	0.5297
	CAR	-0.2327	0.5493	0.6162	1.0203	1.1665	-0.9757	-	1.1117	1.4363
OM	BHAR	0.2210	0.1760	0.0491	-	-	0.0367	-	0.2560	0.4014
	CAR	0.2090	0.1743	0.0649	0.0207	0.1022	0.0747	-	0.1291	0.3009
AE	BHAR	0.0114	-0.0301	0.3673	0.4855	0.1073	0.2813	0.6630	-	0.0313
	CAR	0.0118	-0.0270	0.2818	0.3474	0.0680	0.2204	0.4472	-	0.1057

SA	BHAR	0.027 7	- 0.098	- 0.0241	0.3150	0.2193	-0.0378	0.0087	- 0.0472
	CAR	0.027 7	- 0.092	0.0269	0.2271	0.2075	0.0636	0.1353	0.0424
GCC	BHAR	- 0.178 8	- 0.796 1	- 2.8309	- 3.9500	- 4.3013	-7.5855	- 0.8771	- 0.2318
	CAR	- 0.142 3	- 0.715 9	- 1.1603	- 1.5627	- 1.1608	-1.4193	- 1.5013	- 2.3587
OTHE R	BHAR	0.151 7	0.063 7	- 0.1810	- 0.3083	- 1.1871	-3.3031	- 7.2296	- 7.3957
	CAR	0.166 3	0.078 7	- 0.1227	- 0.3596	- 1.0707	-2.4014	- 2.8748	- 2.6870
ALL	BHAR	- 0.000 1	- 0.799 2	- 3.8206	- 3.9944	- 9.0779	- 29.650 1	- 7.0705	- 1.6983
	CAR	0.024 0	- 0.637	- 1.2830	- 1.9223	- 2.2315	-3.8207	- 4.3761	- 5.1336

TN: Tunis; MA: Morocco; JO: Jordan; EG: Egypt; KW: Kuwait; QA: Qatar; BH: Bahrain; OM: Oman; AE: the UAE; SA: Saudi Arabia; GCC: Gulf countries; OTH: TN, MA, JO, and EG; ALL: all MENA countries included in the study. The second group of countries includes Jordan, Qatar, and Bahrain, where the IPO portfolios overpriced (underperformed) the benchmark portfolio. However, such overpricing is more severe and significant in the long run than it is in the short run. Seshadev and Prabina (2010) document that IPOs are underpriced by 46.55 per cent up to 12 months after the listing date, but report long-run returns up to 36 months measured using WR and BHAR, adjusted using the market index. In a recent study conducted by Jewartowski and Lizińska (2012), the results show that the IPOs over-performed by 13.95% in the short term, and underperformed by 22.62% in the three years after the listing date, employing the buy-and-hold strategy.

The last group of countries includes Kuwait, the UAE, and Saudi Arabia, where IPO portfolios experience cyclical price corrections from positive to negative, and vice versa, relative to the fundamental common stock value over time, after the offering date. Zychowics (2003) documents a similar scenario, showing that IPO portfolio performance fluctuated over the first day, one year, and two years after the listing date, reporting values of 54.45%, -4.11%, and -24.44%, respectively.

In conclusion, the IPO portfolios in all the covered MENA countries are going through a process of price correction around the fundamental common stock values, regardless of whether the portfolios have overperformed or underperformed relative to the benchmark portfolios in the short or long run. Friesen and Swift (2009) argue that negative long-run returns relative to the first-day closing price indicate investor overreaction on the initial trading day. On the other hand, if investors initially under-react to information, long-term returns will be positive when measured relative to the

first closing price. Such results are consistent with those of the empirical study by Purnanandam and Swaminathan (2004).

Chan and Lo (2011) examine the impact of credit ratings on IPO long-term performance using a sample of 3941 IPOs and 130 firms with credit ratings over the period 1986–2004. Their overall findings are consistent with the asymmetry hypothesis, because reducing information asymmetry reduces risk premiums and price discounts. Hence, improving disclosure increases the speed of price discovery and improves market efficiency. Similar findings are reported in the empirical study of Deb and Marisetty (2010). The findings in this study appear to be consistent with the asymmetry hypothesis in an environment characterized by a lack of transparency and timely disclosure.

As argued in the literature, negative long-run returns can be attributed to investor overreaction only if we know that the IPO was not initially overvalued. The study conducted by Purnanandam and Swaminathan (2004) suggests that IPOs are actually overvalued at issue by as much as 50 per cent. In light of these statistics, an investor cannot attribute negative long-run returns to investors' post-IPO overreaction, because the negative returns may simply result from initial overpricing. Their results suggest that the widely documented long-term IPO underperformance may be attributable to both an initial overvaluation of the offering, followed by further post-issue price increases that eventually reverse over the long run. This evidence is interpreted as being consistent with investors' initial reactions to information, followed by subsequent overreactions and a long-term mean-reversion (i.e. long-term underperformance). Their interpretation is consistent with the empirical predictions of Daniel et al. (1998).

The results are consistent with those of previous studies showing that IPO portfolios go through cycles of corrections in the short and long term after a listing. The significance of such corrections around the fair value depends on the level of overreaction/under-reaction that the stock went through after the IPO completion date (An and Chan (2008); Beatty and Ritter (1986); Chan and Lo (2011)]. As is identified clearly in previous empirical studies on the level of efficiency in the MENA stock markets in terms of the lack of information transparency, such results confirm that the MENA stock exchanges suffer from significant information efficiency problems.

Conclusion

The literature is extensive, and indicates that IPOs tend to be underpriced in the short run, and then underperform relative to the benchmark in the long run. This study examines the short- and long-term IPO returns of companies located in the MENA region. It utilizes a comprehensive data set and provides additional evidence of post-listing returns for IPO companies in

a region that lacks regulation, transparency, and international standards (i.e. financial reporting and corporate governance standards).

On the basis of the empirical findings, it is suggested that short-term and long-term investors should exercise caution when analysing IPO firms in the MENA region, because IPO performance is country-dependent. Furthermore, over-performing IPOs in the short-run could be manipulated by companies to affect their market value by underpricing their publicly offered stocks. Such over-performance (or underpricing) will vanish in the long-run, making the process a zero-sum game as soon as the stock market realizes the common stock fundamental value. Two approaches were employed: buy-and-hold abnormal return (BHARs) and cumulative abnormal returns (CAR). These all confirmed that IPO performance is mixed among the MENA countries, which were classified into three groups. The first group comprises countries whose IPOs out-perform the benchmark portfolio in the short run, but underperform in the long run. The second group comprises countries whose IPOs underperform for 60 months after a listing date, where such underperformance becomes more significant over the long run in comparison to that in the short run. The third group comprises countries whose IPOs experience cyclical performance changes, from over-performance to underperformance, and vice versa. Overall, IPOs go through cyclical price corrections around the fundamental value. These findings are supported by the empirical results.

These findings suggest important implications by providing new knowledge for professionals and academics on the performance of IPOs in the MENA region, therefore, providing additional evidence of post-listing returns for IPO companies. Consequently, these results help enhance decisions on investments in IPOs, as well as those on the holding period of such investments, based on the most comprehensive data set investigated to date. Furthermore, the IPO performance among MENA countries over the long term is important for asset allocation and portfolio diversification.

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Student Achievement and Government Intervention: What to Learn from Teresina, Piauí, Brazil

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Abstract

This text analyzes interventions by the Teresina municipal government to influence student performance, making test score results fall among the best of the Brazilian state capitals on assessments by the Anísio Teixeira National Institute for Educational Studies and Research (Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira [INEP]) despite having the highest national proportion of the poor (27.6%). Using bibliographic data, the authors try to identify the factors favoring this performance. It was verified that Teresina implemented continuous and articulated actions, programs and projects, adopted a result and efficiency-based management model, introduced an evaluation and valorization merit system, measured and recognized in various ways. Educational policies and practices seem to follow a previously elaborated script in which each manager appropriates the actions of their predecessors, giving them continuity, perfecting and expanding them. In short, the public policies of each government were conditioned by preceding administrations. This had as its mainstay the longevity of the municipal government managed by the same political group, responsible for most of the organizational and educational policy initiatives, for the ideas and practices that characterized the performance of the municipal administration. The objective conditions offered by the new institutional framework, expressed by the political continuity, in combination with the subjective factors constitute the best explanations for understanding why the municipality of Teresina has become "a success story".

Keywords: Effect of Municipality. Public Educational Policies. Previous policies

Introduction

This article is part of the results from the doctoral thesis (dissertation) entitled "Teresina, the municipality where the poor learn", and analyzes the steps taken by this municipality to guarantee that its students achieve one of the best results among the Brazilian state capitals on the INEP evaluations despite its disadvantaged social and economic conditions.

Among all Brazilian state capitals, Teresina has the largest group of the poor (27.6%). However, as Soares (2014) drew attention to, its educational results (28.3% adequate reading abilities and 20.9% mathematics scores) compared favorably with those of Florianópolis, which has the lowest proportion of the poor (3.4%); its students attained 24.2% in reading and 20.8% in mathematics. Even other capitals with conditions similar do Teresina, such as Fortaleza with 27.5% of the poor, obtained scores of 20.8% adequate reading competency and 12.1% in mathematics.

Question: What did the municipality of Teresina do so that its schools had one of the best performances in the country, despite its conditions of poverty? It is indeed an investigation of the "municipal effect" on school performance. This line of research about student learning, in addition to examining the characteristics of students enrolled in each school and the in-school context, has also focused on the influence of "the quality of education, infrastructural conditions, school supply and educational system management" (Soares and Alves, 2013, p. 494).

This study adds to the already existing studies about the effects of socioeconomic conditions on learning (Bourdieu, 2007), as well as the influences of schools (Alves and Soares, 2007), management policies, resource use modalities and pedagogical practices (Andrade and Soares, 2008, p. 379) on student learning achievement and the contributions of the municipal system to the results of their students, especially those of disadvantaged social origin.

The policies implemented by the Municipality of Teresina, through the Municipal Department of Education, are analyzed. Nonetheless, the policies adopted in Teresina are not compared to other municipalities, nor is there a cause-and-effect relationship between what is put in place and what is finally achieved. The case of Teresina is studied, which means that, like all research that uses this strategy, there is both the desire to understand reality in its various dimensions as well as to approach it in depth, using different data sets and evidence.

The interest was to examine what policies were implemented based upon the Federal Constitution promulgated in 1988 in order to ascertain what favored the academic results of the Municipal school system despite the population's disadvantaged social-cultural conditions. In other words, what made Teresina a municipality where the poor learn formally. Like any case

study, any conclusions from this study are valid for the universe in question. Regarding such results, there is no guaranty as Laville and Dione (1999, p. 156) observe, "that they may apply to other cases". Even when they evidence contradicting results, these studies help understand how education systems contribute to improving learning.

To support this line of thinking, we used bibliographical research about education in Teresina and Piauí as well as other findings based upon policy mandates and educational tools; educational statistics in the state and in the city; newspapers; publications on educational actions, Pluriannual Plans, Ten-Year Education Plans and the most diverse number of reports. The results, presented in three parts, show actions in accordance with the conditions established by the legislation guiding the educational performance of the municipality. Thus, after the present introduction, actions undertaken before the approval of the Guiding Laws and Bases of the National Education System (Lei de Diretrizes e Bases da Educação Nacional [LDBN]) are presented in the second part. In the third part, what was implemented later is discussed. In the conclusions, the actions are analyzed, identifying factors favorable to the municipal schools' academic results notwithstanding the conditions of poverty and cultural disadvantages of its population and students.

Schools in the teresina municipality before the ldbn

The Federal Constitution made the municipalities federal units with greater participation in the national tax funds. However, the new educational regulations would only become effective eight years later with the approval of the LDBN (Law No. 9.394/1996). Until then, according to a publication by the Municipal Education Department (SEMEC [2004a]), which had been a secretariat of education since 1975, managed its school system with the autonomy allowed by existing legislations. It structured the system, organizing public tenders, conducting selection examinations for prospective teachers, approving the statute of the teaching career, democratically electing school principals, improving the infrastructure of the Secretariat and schools, enabling the qualification of teachers at both the teachers' college and higher education (college degree) levels; expanding student enrollment, and elaborating a curriculam proposal.

Of the 162 institutions of the municipal school system when the LDBN was promulgated in 1996, 68 were urban and 94 in the rural area. According to the Municipal Secretariat for Planning and General Coordination (SEMPPLAN, 1996), with the direct election of Wall Ferraz as Mayor in 1986, Wait was reorganized with the election of Mayor Wall Ferraz by direct vote, urban schools increased by 278%, 25% in the number of rural schools and 142% in enrollment figures, from 22,000 to 53,188 students, approximately 75% in the first stage of elementary education (Teresina, 1996). Accordingly,

the system kept to the determinations of the Ten-Year Municipal Plan of Education for All, Teresina (PDET) (Plano Municipal Decennial de Educação de Teresina para Todos), approved in 1993. As objective, the PDET was "to universalize attendance to all of school age in Teresina, offering children, youth and adults education that fulfills the elementary needs of contemporary life".

With the introduction of the Literacy Cycle, conclusion of the curriculum and student performance evaluation of the Municipal System, the PDET took care of teaching quality. The Cycle structured elementary education in two stages. The first stage had two blocks of two years each, with a single teacher responsible for teaching and the automatic promotion from one block to the other. The second stage was divided into four annual levels, from grades 5-8, with one teacher for each area of study (SEMEC, 2004a, p.9).

The curriculum, influenced by the idea of school autonomy, consisted, according to Jose Reis Pereira, then Secretary of Education, of "methodological clues and a minimum quantity of contents" to "subsidize educational actions. It is up to all involved in the process to elaborate the Full Curriculum of the Municipal School System, in order to integrate the educational activities with the realities of the school's context" (Costa & Vilarinho, 2005, p.5).

The institutional evaluation of the system began when the National Union of Municipal Education Officers (União Nacional de Dirigentes Municipais de Educação – UNDIME) joined the "Quality of Basic Education and Network Assessment Project", with financial support from the Ministry of Education and Culture (MEC) and the National Funds for Educational Development (Fundo Nacional de Desenvolvimento da Education - FNDE). The project was developed by the Evaluation and Educational Research Group (Núcleo de Avaliação e Pesquisa Educacional – NAPE), Federal University of Pernambuco - UFPE (Rodrigues, 2000). The project consisted of an objective test of Portuguese and Mathematics applied to 4th and 5th grade students (5th and 6th years) and a questionnaire about gender, age, formal education, in-service training and pedagogical experience given to the teachers of the classes tested (Rodrigues, 2000, p.16).

Thus, it met the conditions required by the LDBN of December 20, 1996 for receiving resources from the Funds for the Maintenance of Elementary Education and Teacher Valorization, (Fundo de Manutenção de Ensino Fundamental e Valorização do Magistério, FUNDEF), instituted through the 14th Constitutional Amendment of September 12, 1996 and regulated by Law No. 9.424, December 24 of that same year, and by Decree No. 2.264, dated June 1997.

Teresina municipal schools after the ldbn

The approval of the LDBN and FUNDEF gave the municipality the necessary conditions for achieving universal elementary education as well as for the improvement of management and infrastructure. For universal education the programs that most stood out were the: All-In-School Program and Teresina Scholarship Program. The first consisted of an intense campaign in all the media to locate out of school children between 7 (seven) and 14 (fourteen) years. The second also aimed to attract those who were out of school, but this time, focusing on the most vulnerable segments, requiring them to enroll as a condition for the transfer of income.

As a result, not only did enrollments increase 18%, but the Municipal System now offered 35% of the local primary school vacancies, with the net primary school attendance rate rising from 83% in 1991 to 96% in 2000, according to data from the United Nations Development Program (UNDP) (2013), indicating universalization of elementary schooling and, consequently, the inauguration of a new stage which involved improving the quality of teaching, management and infrastructure.

The improvement in teaching quality, as envisaged in the Ten-Year Plan, was anchored in initial and continuing teacher training and in actions aimed at improving the performance of primary school students in Portuguese and Mathematics. Examples of these interventions included the Olympian Mathematics Program (Programa de Olimpíadas de Matemática) and the Writing Contest (Concurso de Redação), in which participated respectively, 180 students from 106 schools and 230 students from 52 schools (Costa & Vilarinho, 2005). The best-rated students with their teachers, won trips to the United States to get to know Disney in Orlando, Florida; others won trips to historic Brazilian cities like Ouro Preto, Tiradentes, Sabará in Minas Gerais, among others (Costa & Vilarinho, 2005).

In the municipal administration, the highlight was the creation of a Rotation Fund, following the examples of the Money Directly to the School Program, (Programa Dinheiro Direto para Escola, PDDE), created through the FNDE Resolution, No. 12, of May 10, 1995. The Municipal Fund, instituted by Law No. 2,511 of March 16, 1997 and regulated by Decree No. 3.454, of May 7, 1997, allowed schools to receive financial resources for the acquisition of material and the realization of small services defined by community assemblies and administered by the School Board (SEMEC, 2004).

For managing the System, in addition to the creation of the Municipal Council for Monitoring and Social Control of the FUNDEF, the Municipal System of Education and adherence to the Funds for Strengthening Schools

Program, (Fundo de Fortalecimento da Escola, FUNDEscola)³¹ were highlights.

The Municipal School System of Teresina, (Sistema Municipal de Ensino de Teresina, SME) was one of the innovations brought in by the Federal Constitution of 1988 when it defined in its Art. 211, that it would be up to the Union, States, Federal District and Municipalities to organize their education systems, to define forms of collaboration, in order to ensure the universalization of compulsory education. According to the single paragraph of Art. 11 of the LDBN 1996, municipal governments could choose to institute their own education systems, within the state system or compose together, a single system for basic education. Teresina opted for the creation of its own system through Law No. 2.900, dated January 17, 2000. The municipality decided to exercise its established constitutional autonomy and, with that, being able to "lower supplementary norms for its education system" (Law No. 9.394, 1996, article 11, item III), to institute standards, procedures and curricula more appropriate to local needs and peculiarities, besides favoring relevant decision-making and greater speed regarding educational matters.

The Municipal School System of Teresina (SME), consisted of the Secretariat, as administrative unit, the Council, as a collegiate body as well as elementary and nursery schools, maintained and administered by the municipal government. The system also included early childhood educational institutions, created and maintained by private initiatives (SEMEC, 2004a, p.69).

Responsibilities of the Municipal Council of Education as defined in art. 2 of the Law, were "to elaborate complementary norms for the Municipal Education System, as well as to study, plan, advise and approve educational questions (matters) pertinent to the administrative and pedagogical functioning of the establishments that integrate it" (SEMEC 2004, p. 69). According to art. 3, the Secretariat was required to:

oversee compliance with the norms and decisions issued by the Municipal Council of Education, register and supervise the establishments that integrate the Municipal System of Education, as well as validate and register certificates or diplomas of completion of Elementary School in SME establishments (SEMEC, 2004, p. 69).

The adhesion to FUNDEscola, through a Technical and Financial Cooperation Agreement between the Municipality and the Ministry of Education (MEC) through the National Funds for the Development of Education - FNDE (2000), made it possible to study the National Curricular Guidelines and exchange experiences with the systematization of teaching

³¹National Funds for Educational Development Program - FNDE/MEC, with interface of the state and municipal Departments of Education of the Northern, Northeastern and West-Central regions with financing from the World Bank (BRAZIL, 2000).

strategies as well as the implementation of the Teacher Literacy Training Program, (Programa de Formação de Professores Alfabetizadores, PROFA), (SEMEC, 2002, p.4) and the School Development Plan, o (Plano de Desenvolvimento da Escola, PDE). The first plans, totally financed by the FNDE/Fundescola, were elaborated in 04 (four) schools of the system that met the criteria defined by the Program in terms of having less than 200 (two hundred) students, executing units (School Councils) and "minimum operating conditions and strong leadership " (Rocha & Costa, 2008, p.6). "Strong leadership" was justified by the need for the school to take responsibility for directing and coordinating the development of the PDE, involving "all segments of the school and the school community, in order to improve students' performance" (Amaral, 2001, p. 17).

Public education of the municipality of Teresina, therefore, reached the twenty-first century anchored, on one hand, in its Municipal Education System and on the other, in Fundescola. The first consisted of a mechanism for the legal affirmation of its autonomy, which was in line with the foundations of the federal system, since it had its educational responsibilities established in a legal order and administrative structure and, at the same time, had defined the ways of cooperation and articulating with the other members of the federation. The second, based on the relationship with FUNDEscola pointed to the logic of strategic planning, as well as a results-based and efficiency management style.

These ideas guided the educational management of the municipality. Thus, as part of FUNDEscola, teacher qualifications continued through the Program for School Learning, (Programa da Aprendizagem Escolar, GESTAR), for teachers of Portuguese and Mathematics in the 1st and 2nd blocks of schooling, School Development benefits for 97 schools with a sum of R\$876,000.00 (SEMEC, 2007a). Strategic planning was also introduced in the Secretariat (Rocha & Costa, 2008).

The valorization of the teaching profession counted with the approval of a new Statute and the Plans for Salaries and Job Placement for Public School Teaching in the Municipal System of Teresina, (Rede de Ensino do Município de Teresina, PCCS) through Law No. 2,972 of January 17, 2001 and with the institution, through Law No. 3,089, of April 18, 2002, of the "School Performance Bonus". This Bonus consisted of a remuneration for the teaching staff (pedagogue, director, deputy director and teachers in effective classroom activity), according to the average scores of each school on the external evaluation of the system based upon the approval rates of the students, the Age-Class Distortion and School Drop-out Rates (article 1, paragraph 1). Each of these indicators had a weight whose sum totaled 100 (one hundred) percent and the scores ranked the schools, in groups that ranged from A, with

the best performance (more than 80%), to E, with less than 50 percentage points.

It was also at this time that the School Feeding Council, (Conselho de Alimentação Escolar, CAE) was established through Municipal Law No. 2,989, of May 14, 2001, and the Municipal Council of Education of Teresina - CME by Municipal Law No. 3,058, of December 19 of 2001. The Ten-Year Education Plan of Teresina (2003-2013) was also approved. The Plan defined as objectives, to:

- Universalize school attendance to meet the educational demands of the city, guaranteeing access to quality education, continuity and the success of all children, young people and adults, based on a perspective of Education for all.
- Eradicate illiteracy, aiming to include women and men from Piauí in the socioeconomic and political process of the state and the country, increasing opportunities for generating and increasing work and income, reducing poverty and recovering their dignity as citizens (SEMEC, 2003). , p. 27).

The goals to be achieved by these policies in the areas covered by the municipal education system were: to reduce the illiteracy rate to 5%; reach in 10 years, the "primary school enrollment rate - 1st to 4th grades - of at least 90% "; assist 60% of children from zero to three years and 100% from four to six years; enrollment of all 6-year-olds into elementary school; ensure that at least 90% of children and adolescents remain for 8 years in the compulsory schooling process from 7 to 14 years of age"; reduce "by at least 80%" the age/class (grade) distortion [...]", to keep drop-out and retention (failure) rates at a maximum of 10% per year; to universalize "elementary education" for children and adolescents from 7 to 14 years (SEMEC, 2003, pp. 32-33).

The objectives of the Ten-Year Plan of Education for All (MEC, 1993; SEMEC, 1993) were achieved, especially as to the universalization of school attendance as related to educational demands, and the quality of teaching as guarantee for learning. To this end, measures were implemented to regulate school progress and literacy, with the Ayrton Senna Institute (IAS), which began to monitor progress within the system using retention and dropout rates, as well as requiring planning, monitoring, evaluation and positive outcomes in all schools. Through the Special Literacy Program for first year students of elementary school still not literate, the Instituto Alfa and Beto - IAB made it possible to keep them in the school in indicated series (classes), and introduced them to workable literacy practices (SEMEC, 2010).

As such, in 2004, the "Literacy Teacher Award" was established with the objective of giving the deserved value to literacy teachers; to develop a profile of students' learning in the literacy process; to produce diagnostic information about the acquisition of reading and writing skills during the school year and to inform decision-making about planning, teacher training

and classroom intervention (Lustosa, 2013, p 60). In this way, student literacy level and consequently, the performance of the literacy teachers were measured through the evaluation conducted by SEMEC, rewarding those who attained "the minimum of 90% of their students with a grade equal or superior to six" (SEMEC, 2008, p.32).

About this time, the 56,390 enrollment figure registered in 2004 in the municipal school system already represented 43% of the total in Teresina's elementary schools, even though it had 25% of the establishments but benefited from political continuity in local government management. The Literacy Professor program continued, and so were the partnerships with the Alfa and Beto and Ayrton Sena Institutes. So as to strengthen school autonomy, strategic planning was introduced by FUNDEscola through the school's PDE.

The partnerships with the Alfa and Beto and Ayrton Sena Institutes with the "universalization of the Metaphonic Method of literacy in all beginning (reading and writing skills, literacy) classes" (SEMEC, 2007: 43) enabled the system, whose literacy rate was 82.51% in 2003, to increase to 92.69% in 2009 (SEMEC, 2010). Also counting, especially with the technologies of the Ayrton Sena Institute, through the "Se Liga" (Get Connected) and "Acelera" (Speed up) Projects, the age/class distortion index was reduced from 19.86% in 2004 to 6.30% in 2008 (SEMEC, 2010).

The school became the "central axis of the educational policy" onto which "all the efforts and actions of the agents of" the Council and the Secretariat (SEMEC, 2007, 32) converged, as FUNDEscola was already helping with the "need to strengthen their ability to function and teach" (SEMEC, 2006, page 7). For this reason, the Development Plan of 74 schools was financed with resources from the Municipal Treasury and the National Fund for Educational Development. Strategic planning was also extended through training (Rocha & Costa, 2008, p.7-8).

The "School Performance Bonus", introduced in 2002, was replaced by the "School Performance Award", established by Law No. 3.514/2006, which maintained the previous criteria, but went on to award schools (Lustosa, 2013). In addition, in compliance with Law No. 11,738/2008 and the PDET (SEMEC, 2003), the national minimum salary for teachers and other professionals in basic public education was established.

About the same time, the municipal school system had more than a third (35%) of its schools located within the municipality and 50% of enrollments in elementary school and early childhood education. There was also a 164% increase in the number of schools, from 67 in 2004 to 177 in 2009, and 318% of enrollments in day-care centers, from 1,665 in 2004 to 6,952 in 2009. Similarly, pre-schools also had a growth of about 160% during the same period, going from 5,593 to 14,519 units according to SEMEC (2015).

This growth really began in 2007, when FUNDEB was constituted by Constitutional Amendment No. 53/2006, which, in contrast to the FUNDEF that it replaced, had a broader scope, covering all basic education (kindergarten, primary and secondary schooling, as well as youth and adult education). With this, there is a " 100% of municipalization of the state's Kindergarten Nursery network and the incorporation of almost all the philanthropic and community preschools in agreement with the extinct Municipal Secretariat for Children and Adolescents, (Secretaria Municipal da Criança e Adolescente, SEMCAD) according to SEMEC, (2015, p.20). As early as 2013, 96% of children aged 4 to 5 years and 34.7% of children aged 0 to 3 attended school, surpassing in both cases Brazil (81.4% and 23.2%), the Northeast (87 and 19.2%) and Piauí (93.9 and 16.1%), according to data from the panel "Situation of planned targets", from the website "PNE in motion" of the Ministry of Education.

The substitution in 2010 of the Brazilian Social Democratic Party (PSDB), in the municipal government since 1993, by the Brazilian Labor Party (PTB) resulted in changes in educational policies. The School Performance Award, which was created in 2006, was replaced through Law No. 4,019 of 2010, by the School Team Award – 100%, which, according to Lustosa (2013, p.60), awarded "all school staff professionals" (director , deputy director, teachers, pedagogues, secretaries, secretarial assistants, custodians, lunch attendants, concierge agents, those in activity or not, and trainees) cash amounts established by Decree 10.671 of August 23, based upon the results of the Teaching Unit from the Literacy Teacher Award or on the Basic Education Development Index, (Índice de Desenvolvimento da Educação Básica, IDEB.

Law No. 4,274, dated May 17, 2012 amended Law No. 3,513, of May 19, 2006 about the election of school principals. Under the new law, the terms, which were four (04) years, were reduced to 03 (three) years (article 5); elections take place in all schools, and those with less than six (6) classes are only allowed as candidates for director (article 3); a teacher's vote has a "weight" of 50% and that of service workers or students only 25% each. Teachers also require only a minimum of 3 years of effective teaching to be a candidate (SEMEC, 2006; 2012).

However, candidates were required to sign a Management Contract with clauses "pre-established regarding competences in administrative, pedagogical and financial management, in addition to others based upon exercising the responsibilities attached to the position". In the case of re-election, a document of the results of the performance evaluation based upon the previous Management Contract will be signed (SEMEC, 2006; 2012).

In this period, compared to 2009, the number of elementary schools decreased by 0.7% and enrollments by 3.3% (SEMEC, 2015). However, the Municipal Network remained with more than 50% of the enrollments in

primary education. In pre-school education, although the number of establishments was maintained, enrollments in day-care centers were increased (from 6,952 in 2009 to 10,634), compensating for the reduction in preschool (from 14,519 to 13,504) and reflecting adjustments in the Network in order to optimize resources.

With the return of the PSDB to the municipal government in 2013, a Pluriannual Plan covering 2014-2017 entitled "A city for the people" with commitment to the quality of education was elaborated. Education was made a priority so as to improve learning and, consequently, recover the level of the Basic Education Index, lowered from 5.2 in 2011 to 5.0 in 2013 in the initial years of elementary education, and from 4.4 to 4.3 in the final years (INEP, 2015).

In order to achieve this, in 2014 the Learning Evaluation Group of the Secretariat, created in 1996, was transformed into the Educational Evaluation System of Teresina, Sistema de Avaliação de Aprendizagem de Teresina, SAETHE. Through SAETHE, SEMEC, in partnership with the Center for Public Policy and Educational Evaluation of the Federal University of Juiz de Fora (CAEd/UFJF), coordinates the execution of external evaluations like the census and transversal types for students of the municipal system in Portuguese (Reading and Writing) and Mathematics.

In addition to the evaluation system, Laws 4,499 of December 20, 2013 and 4,668 of December 22, 2014, instituted the Program for Merit Recognition within the Teresina Public Schools, primary school and early childhood education. Its purpose in the elementary school, according to art. 2 of Law 4,499 (2013), is "to motivate teaching professionals to improve teaching practice, contribute to the professionalization of teaching, as well as to raise students' academic performance". In early childhood education, according to art. 2 of Law no. 4,668 (2014), the reason is "to recognize and value collective work, considering the skills developed by the students [of] the 2nd Period of Early Childhood Education, regarding reading and writing."

The prizes, an annual bonus, are awarded to a director, deputy director, assistant director, pedagogue, teachers effectively teaching and those in teaching practice. The performance of the school on the IDEB for elementary schools, and the development and progress in reading and writing of those in early childhood as measured through External Achievement Evaluation.

In this way, the more than 80 thousand students in the 300 schools of the municipal network are systematically followed, with diagnoses that subsidize policies for continuing education and actions aimed at improving learning such as those arising from partnerships with the Alfa and Beto and Ayrton Sena Institutes. These actions also include those outside the school. Standing out among these, is the "Olympian Educational City" Program, which, according to the Annual Activity Report for 2015 (SEMEC, 2016,

p.24), between 2013 and 2014 "benefited 150 elementary school students with high academic skills" and resulted in "more than 50 achievement medals won nationally".

This Program, though similar to the one of 1996, is also different because students prepare to compete with other public schools at the state and national levels. Thus, as many of the actions developed by the Teresina municipal education system, while the Program in question continues, it establishes a tradition and innovates at the same time.

Since becoming a federal entity, the Teresina municipality has used the prerogatives granted by the 1988 Constitution to carry out its duties as regulated by the LDBN with support first from FUNDEF, and then FUNDEB. These institutional conditions favored the universalization of elementary and pre-school education and expanded services in day-care centers. All fortified school permanency, improvement in performance, school management, and the Municipal System as a whole. The actions aimed at improved school performance included the qualification and continued professional preparation of the teachers for the systematization of their pedagogical activities. Acquisition of better reading and writing skills, teaching strategies for literacy and effective learning, especially for students with age/class distortions, and encouragement to study specific subjects like Portuguese Language and Mathematics with the promotion of several competitions among which the Knowledge Olympics stand out.

The management of the school, as '*locus* of teaching and learning', had improved upon the process of choosing principals through the combination of democratic practices (direct elections and voting by the school community) and meritocratic criteria (training, qualification and a signed management contract). School councils (boards), strategic planning, transfer of funds for routine expenses, as well as those defined in the School Development Plan (PDE-Escola) and work plans approved by the school councils were instituted. An integral part included the systematic monitoring by the Secretariat and continuous performance evaluation.

Regarding the management of the System, introduced from then on, along with the constitution of the democratic instances required by the Municipal Council of Education and the Ministry of Education for the transfer of funds (Councils for FUNDEB, FUNDEF, School Feeding Program, among others), the focus was also on strategic planning, merit recognition and evaluation. Strategic planning, introduced by the FUNDEscola Program, was integrated with management to direct annual actions as well as the evaluation of results, guiding the Secretariat in the organization of management and performance evaluation. The valorization of merit was evidenced by the institution of prizes awarded to individual teachers, sometimes to all the teachers of the school, sometimes to the school team on participating in

competitions or to the students or even the school as a whole. Evaluation, the guiding principle of school management, has been improving since the first experience, introduced even before the LDBN (1996) both in terms of the administrative structure (first as a nucleus, then as an evaluation system), and methodological and technical questions, following the innovations in the field and using the advice of institutions with proven experience.

Thus, it is perceived that what the municipality of Teresina did so that its schools would register one of the best results in the country, despite its perceived poverty, involves a set of continuously improved pedagogical and administrative actions.

Conclusion

This study examined Teresina's education, focusing on what was done since it became a federal entity according to the 1988 Constitution so that its schools would have one of the best performance results in the country, despite having more than a quarter of its population (27.6 %) made up of poor people. The path followed before the approval of the LDBN in 1996 to the present day was outlined, giving special attention to the most significant actions, their meanings, connections and results at different times during this period.

Since the Constitution of 1988, the educational activities of the Teresina City Hall, the municipality's administrative center, has benefited from the legacy of the continuity of administrative and pedagogical actions developed since the return to direct elections for mayor in the capitals in 1988. This made it possible that the initiatives of an administrator are continued, widened, deepened and sometimes remodeled, but never abandoned by their successors. Such initiatives, under the auspices of the legal framework, were strengthened by FUNDEF's management model and the financial resources it made available. So was the universalization of elementary education and, with this, the inclusion of the quality of education in the public agenda. Also included was the establishment of mechanisms for more democratic management practices. On the one hand, the municipal administration implemented measures so that no child between the ages of 7 and 14 years would remain out of school, and took care of educational quality by dividing elementary education in two stages; one consisting of two blocks of two years and automatic promotion; and the other, with four classes (series). A new management model was also inaugurated.

To this end, it created and implemented the social control of democratic management in schools and in the System, elaborated the first Ten-Year Plan, established measures to ensure the autonomy of school units (pedagogical projects and curriculum defined by the school community, allocation of treasury funds), organized the network's institutional evaluation system, created the Municipal Education System and joined the FUNDEscola

partnership. While one expressed the autonomy conferred by the Constitution; the other, the administrative model put into place, one and the other, profoundly altering the management of municipal education in Teresina.

These innovations were not only consolidated but they left a legacy that forged the choices and, mainly created a new paradigm for managing Teresina's education system. FUNDEscola and the preparation of decennial plans were continued; as well as the system of institutional evaluation was expanded, associating it with the reward for performance and the introduction of other agencies for social control (Municipal Council of Education and School Feeding Council).

The fight against illiteracy, especially among those attending school, drop-out, retention and age/class (grade) distortion rates, were tackled through a number of strategies, and the most innovative at the time were the partnerships with non-governmental organizations such as the Ayrton Sena and the Alfa and Beto Institutes and awards for good practices both from the school and from teachers, notably from literacy teachers. As the management model took hold, especially with the search for results, the administration established quality education as the new agenda, albeit using previous initiatives such as FUNDEscola, different partnerships; awards for performance, altered in their designs and scope. Most importantly was the managerial model of administration, now, applied to the whole System.

This System, which already controlled 50% of elementary school enrollment, with the FUNDEB in 2007 and the expansion of compulsory education for children from 4 to 5 years old, also began to offer a large part of the kindergarten education that was municipalized with the incorporation of those assisted by the state as well as by philanthropic and assistance-based organizations. Besides, it emerged as a System of Quality in INEP's evaluations, presenting in the 2009 IDEB evaluations, score of 5,2 for students in the initial years, only surpassed by Palmas with 5,6, Belo Horizonte (5,3) and Curitiba (5,7). For students in the final years the score of 4.7 was surpassed by Campo Grande with 4.8. In 2011, this performance was taken to task with the maintenance of 5.2 in the initial years and the reduction to 4.4 in the final years, and falls in both segments in 2013, with scores of 5.0 and 4.3, respectively.

These results coincided with the change of the governing group of the municipality which consequently, can be said to be responsible for the educational administration that designed anew, several of the already existing actions, such as awards for school performance, election of school directors and better rationalization of the system.

In fact, with the return of the PSDB political group to managing the municipality, rather than resume the same course of action as before, including preserving some changes introduced by the predecessor, such as the

systematic election of school principals and the rationalization of school supplies, old lines of action and new procedures were broadened and intensified. Among the extended projects, were those for continuous training, the use of the educational technologies of the Alfa and Beto and Ayrton Sena Institutes, offering ways of learning outside the school context and the performance evaluation. Among the innovations, the Teresina Educational Assessment System and the institution of Merit Valorization Award Programs within the Teresina public elementary school system should be highlighted. It is true that, both are heirs of a long tradition in the Network, what we innovate is, first the scope, second, the design.

As such, factors that can be said to account for the Teresina municipal schools to have achieved some of the best results in the country, despite its poverty included continuation and articulation of actions, programs and projects, adoption of a management model based on the search for results and efficiency, as well as individual-system evaluations, merit valorization, measured and recognized in various ways. In fact, the educational actions of the municipality seem to follow a previously elaborated script in which each manager/director appropriates the actions of predecessors, giving them continuity, improving upon them, expanding them; in summary, the public policies of each government conditioned the policies of its successors.

The mainstay of this is the longevity of the municipal management by the same political group, responsible for most of the initiatives for elaborating and implementing educational policies; responsible for the ideas and practices that characterize the municipal school system and account for the performance reported. Therefore, attending to the objective conditions offered by the new institutional framework, in conjunction with the subjective elements present, expressed through continuity of a political party in power, constitute the best explanations for understanding why the schools of the municipality of Teresina have become "a success story".

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Aplicación De Un Modelo Basado En La Gestión Del Conocimiento Para Mejorar El Nivel De Aprovechamiento De Las Tic. Estudio De Caso En Una Pyme Mexicana

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Abstract

A very dynamic environment and constant technological advances are surrounding small and medium-sized enterprises (SMEs) in their commercial activities. The business context is becoming increasingly complex, as there are continually numerous aspects related to the application of knowledge, both financial, legal, organizacional and technological. In relation to the application of information and communication technologies (ICT), SMEs need to acquire and apply knowledge correctly to obtain the best use of these technologies in their business processes. Taking this scenario into account, the objective of this paper is to present the case study on the application of a conceptual model based on knowledge management (KM) to improve the level of use of ICT in the business processes of mexican SMEs. The model was applied in an SME of the commercial sector. The results obtained are exposed, as well as the conclusions and future perspectives of the work developed.

Keywords: SMEs, ICT, Knowledge Management

Resumen

Un ambiente muy dinámico y avances tecnológicos constantes están rodeando a las pequeñas y medianas empresas (PYMES) en sus actividades comerciales. El contexto empresarial se torna cada vez más complejo, ya que continuamente se requieren numerosos aspectos relacionados con la

aplicación de conocimiento, tanto financiero, legal, organizacional y tecnológico. En relación con la aplicación de las tecnologías de la información y comunicación (TIC), las PYMES necesitan adquirir y aplicar acertadamente el conocimiento para obtener el mayor aprovechamiento de estas tecnologías en sus procesos de negocio. Tomando en cuenta este escenario, el objetivo de este trabajo es presentar el estudio de caso sobre la aplicación de un modelo conceptual basado en la gestión del conocimiento (GC) para mejorar el nivel de aprovechamiento de las TIC en los procesos de negocio de las PYMES mexicanas. El modelo se aplicó en una PYME del sector comercial. Se exponen los resultados obtenidos, así como las conclusiones y las futuras perspectivas del trabajo desarrollado.

Palabras Clave: PYMES, TIC, Gestión del conocimiento

Introducción

Las pequeñas y medianas empresas (PYMES) representan un papel importante en el contexto socioeconómico por su aportación a la generación de empleos y por sus contribuciones a la economía nacional (Alderete, 2013), por lo que es relevante conocer y abordar su problemática la cual suele ser muy diversa. En lo referente al uso práctico de las tecnologías de información y comunicación (TIC), la mayoría de los estudios suelen enfocarse en experiencias de las grandes organizaciones, donde la alineación estratégica es un factor clave en relación al éxito de la inversión y el provecho obtenido de las TIC. En cambio, debido a que las PYMES funcionan normalmente sin especialistas dedicados en tecnologías de información, esto propicia que no se obtenga el máximo potencial de estas tecnologías (Wilkin, 2012).

En la emergente economía basada en el conocimiento, la gestión del conocimiento (GC) se está difundiendo rápidamente en los círculos académicos y en el mundo de los negocios. La gestión eficaz del conocimiento es vital para la supervivencia y la prosperidad de una empresa (Park *et al.*, 2013). La GC brinda un enfoque amplio y multidimensional, cubriendo la mayoría de los aspectos de las actividades de la empresa. La experiencia demuestra que para ser competitivo y tener éxito, las empresas deben crear y mantener un capital intelectual equilibrado (Wiig, 1997). Para muchas empresas, esto implica la necesidad de afinar y optimizar sus procesos de negocio (Niedermann, 2015). La capacidad de adaptar continuamente sus procesos de negocio es una habilidad crucial para que las empresas logren sobrevivir en el dinámico mundo empresarial actual. (Radeschütz *et al.*, 2015).

Considerando el escenario anterior donde se involucran los procesos de negocio, la GC y la aplicación de las TIC en las PYMES, el propósito de este trabajo es presentar un caso de estudio de la aplicación de un modelo conceptual basado en la GC para mejorar el nivel de aprovechamiento de las

TIC en los procesos de negocio de las PYMES en el contexto mexicano. La aplicación del modelo se realiza en una PYME del sector comercio del ramo ferretero. La estructura de este trabajo contempla un marco de referencia donde se presentan conceptos importantes relacionados con este estudio. En la siguiente sección se presenta la metodología realizada explicando cada etapa en la aplicación del modelo propuesto. A continuación se presentan los resultados obtenidos, y finalmente se presentan las conclusiones y las futuras perspectivas del trabajo desarrollado.

En comparación con las grandes corporaciones, la mayoría de las PYMES perciben las barreras de implementación de TIC en sus operaciones comerciales como una iniciativa costosa, con riesgo y un procedimiento complejo (Chong, Chan & Ooi, 2012). Por tal razón, muchas PYMES debido a la falta de recursos internos, incluyendo la falta de conocimientos y habilidades en sistemas de información, recurren a consultores externos para obtener ayuda en los procesos de fortalecimiento tecnológico (Bradshaw, Cragg & Pulakaman, 2012). Sin embargo, es importante considerar que muchas organizaciones fracasan en las inversiones en TIC, lo cual es especialmente cierto en las PYMES, ya que la gestión de las TIC se basa a menudo en una visión de corto plazo y prácticas informales en la toma de decisiones (Rantapuska & Sore, 2011). Debido a esto, se vuelve un factor importante para la gestión de TIC tener en cuenta su eficacia operativa, así como promover su aplicación estratégica para apoyar los procesos de negocio internos (contabilidad, inventarios, compras, ventas, recursos humanos), y los externos (proveedores, clientes, gobierno, socios, etc.) alineando la aplicación de las TIC con la estrategia del negocio con el propósito de maximizar sus beneficios (Pedraza, Guerrero & Lavín, 2011), ya que los activos basados en el conocimiento crean valor, haciendo de la gestión del conocimiento también una fuente de ventaja competitiva (Fey & Furu, 2008; Wang & Noe, 2010).

Las TIC y la GC en el entorno empresarial

Existen algunos elementos que influyen en la capacidad de adopción de TIC como son la estructura organizativa, la actitud hacia las TIC y la familiaridad con las mismas por parte del propietario o del gerente general de la empresa, que afectan fuertemente las posibilidades de incorporar estas tecnologías. (Scupola, 2009; Huaroto, 2012). De acuerdo a la complejidad y al campo de utilización de las TIC, los efectos sobre el desempeño en las empresas serán muy distintos, ya que se pueden clasificar las aplicaciones según las áreas de trabajo donde se utilicen, puede ser en áreas aprovechables para la empresa en su conjunto como es el caso del uso de sistemas de información ERP (por sus siglas en inglés “Enterprise Resources Planning” o “Planificación de Recursos Empresariales”) e Intranet, así como también orientadas a las relaciones entre empresas como como son el uso de Extranet

(Miyazaki, Idota & Miyoshy, 2012). Por otro lado, se tiene que la presión competitiva y la relación con clientes y proveedores pueden influenciar positivamente la intención hacia la incorporación y utilización de TIC en las empresas (Chinedu & Chen, 2014).

En el contexto empresarial, la GC y la innovación se consideran estrategias importantes para mejorar la capacidad de una organización para responder a los requisitos cambiantes de la tecnología y poder mantener un desempeño competitivo en el entorno empresarial (Al-Sa'di *et al.*, 2017). La aplicación efectiva del conocimiento se manifiesta entonces en nuevas formas de valor para la organización, incluyendo nuevas ideas, productos y procesos. (Dahiyat, 2015). En la literatura se ha encontrado algunos factores que han impedido que las PYME adopten prácticas de GC, como son la escasez de recursos tanto humanos como financieros. Por otra parte, las TIC están disminuyendo el peso de estos factores, reduciendo las barreras humanas y financieras que impiden su adopción (Cerchione *et al.*, 2015).

Metodología

La metodología consiste en aplicar el modelo propuesto (ver figura 1), siguiendo cada una de las etapas que lo conforman, con el fin de mejorar el nivel de aprovechamiento de las TIC en los procesos de negocio. El modelo se aplicó en una PYME ubicada en el noroeste del estado de Sonora, México. Esta empresa se dedica a la compra-venta de productos del ramo ferretero, cuenta con 30 empleados, los cuales realizan ciertas actividades relacionadas con los procesos básicos del negocio como son ventas, compras, cuentas por cobrar, cuentas por pagar y control del inventario. Como apoyo a estos procesos se utiliza un sistema de información ERP comercial, que se encuentra instalado en red para el procesamiento de la información. Cabe destacar que el sistema ERP es de código semi-abierto, lo cual permite realizar adecuaciones personalizables a los procesos requeridos por la empresa. Se contactó a programadores certificados que tuvieran los conocimientos y la experiencia que permitieran implementar soluciones para resolver las necesidades planteadas por la empresa. Las respuestas a las preguntas en la tabla 1 se tomaron como base para seleccionar al proveedor de TIC.

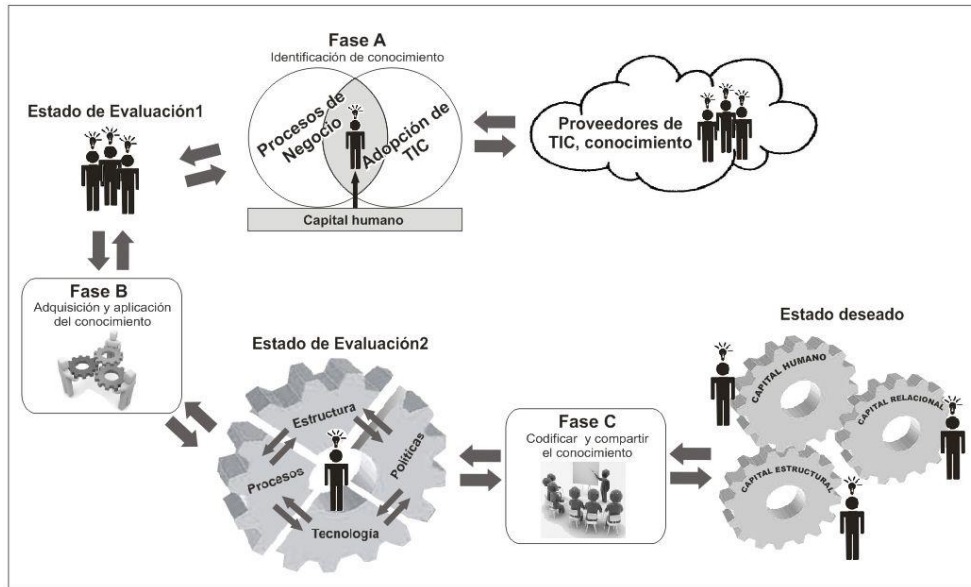


Figura 1.- Modelo conceptual propuesto basado en la GC para mejorar el nivel de aprovechamiento de las TIC.

Fase A: Identificación del conocimiento.

Esta fase consiste en determinar el estado actual, identificar el conocimiento existente y las necesidades de conocimiento de la PYME en relación a las TIC y sus procesos, así como su relación con proveedores externos que estén en condiciones de asesorar a la empresa. Para ello se plantearon preguntas relacionadas con los proveedores, tecnología, procesos, capacitación, recursos humanos, costos, tiempo de implementación, así como al cumplimiento de objetivos tomando en cuenta las preguntas relacionadas con ¿Quién? ¿Cuál? ¿Dónde? ¿Cómo? ¿Por qué? ¿Cuándo? ¿Cuánto?

El proceso seleccionado para la aplicación del modelo fue el proceso de compras de productos. Este proceso es de vital importancia, ya que es por medio del cual se ponen a disposición los productos que la empresa debe vender para satisfacer las necesidades de sus clientes. En la tabla 1 se muestra una serie de preguntas en relación con el grado de conocimiento sobre el proceso de compras y la aplicación de las TIC. Estas preguntas fueron planteadas por el gerente general, el asistente del gerente, el encargado de compras y el auxiliar del almacén.

Tabla 1.- Algunas preguntas relacionadas con el proceso de compras y la aplicación de las TIC.

Análisis previo del proceso de compras en relación con la aplicación de las TIC	
Proceso de negocio Nombre del proceso: COMPRAS	Aplicación de TIC (Evaluación del perfil del proveedor TIC)
¿Cuál es el propósito de este proceso? ¿Cuáles son las actividades involucradas? ¿Quién realiza el proceso? ¿Cuándo se realiza el proceso? ¿Cuánto tiempo toma el proceso y como se realiza? ¿Con que frecuencia se realiza el proceso? ¿Cuáles otras áreas se relacionan con el proceso? ¿Cómo se mejorará el aprovechamiento de las TIC en este proceso?	¿Se tiene conocimiento de cómo aplicar las TIC en este proceso? ¿Se ha identificado quienes pueden brindar la tecnología y el conocimiento adecuado para aplicarse al proceso? ¿Qué ventajas se obtendrían con la aplicación de las TIC? ¿Cuál es el presupuesto requerido y cuánto tiempo toma la implementación de TIC? ¿Se cuenta con personal para el uso de las TIC en este proceso?

Fuente: Elaboración propia.

Estado de evaluación 1

Consiste en dar respuesta y evaluar todos los puntos establecidos en la fase A. En este caso el personal de la empresa involucrado en el proceso de compra brindó las respuestas a las preguntas relacionadas con este proceso. Del mismo modo se hicieron las preguntas y se aplicó la evaluación a tres posibles proveedores, de los cuales uno de ellos mostró un perfil adecuado en relación a los conocimientos necesarios para implementar las TIC en el proceso de compras de esta empresa. A continuación se muestran las respuestas a las preguntas relacionadas con el proceso de compras:

En relación al proceso de negocio

¿Cuál es el propósito de este proceso?

Adquirir los productos necesarios para ponerlos a la venta para satisfacer las necesidades de los clientes.

¿Cuáles son las actividades involucradas?

- 1.- Conocer cuáles son los productos faltantes en el inventario.
- 2.- Identificar quienes son los proveedores de esos productos.
- 3.- Elaborar la orden de compra para el proveedor.
- 4.- Enviar la orden de compra al proveedor.
- 5.- Mantener comunicación con el proveedor para dar seguimiento a la orden de compra.
- 6.- Surtir la orden de compra cuando llega la mercancía.

¿Quién realiza el proceso?

El encargado del área de compras

¿Cuánto tiempo toma actualmente realizar el proceso y como se realiza?

Toma aproximadamente entre 30 y 50 minutos realizar una orden de compra. Se hace de manera manual en un formato impreso, después se escanea el documento y se envía el proveedor por correo electrónico.

¿Cuándo se realiza el proceso?

Cuando se detectan faltante de artículos para cubrir pedidos de los clientes. Esto suele suceder ya cuando al cliente se le dice que no se cuenta con el artículo solicitado después de realizar una búsqueda en el almacén, en consecuencia se pierde la venta para la empresa.

¿Con que frecuencia se realiza el proceso?

Es un proceso que se realiza diariamente en promedio para 10 proveedores

¿Cuáles otras áreas se relacionan con el proceso?

El proceso de compra tiene relación con:

- a) El control de inventarios, ya que las compras realizadas afectan el nivel del inventario al registrarse las entradas de mercancía.
- b) El departamento de pagos, ya que la compra puede ser contado o de crédito, afectando el estatus de las cuentas por pagar.

¿Cómo se mejorará el aprovechamiento de las TIC en este proceso?

Con la información capturada de los productos y los proveedores de mercancía, se puede utilizar para evitar la recaptura de los mismos datos y disminuir el tiempo para elaborar la orden de compra. El objetivo que se pretende alcanzar es conocer que artículos hay que comprar, a quien comprar y a qué precio comprar, así como aprovechar la conexión a internet para enviar automáticamente el documento de orden de compra al proveedor por correo electrónico. Con esto se aprovecha totalmente la aplicación del intercambio electrónico de datos entre las diferentes etapas que conforman el proceso de compras.

Fase B: Adquisición y aplicación del conocimiento.

En esta fase se siguieron las sugerencias del proveedor/asesor seleccionado para complementar algunos datos relacionados con el proceso de compra que involucra a los proveedores de mercancía, el catálogo de productos de la empresa y el proceso de elaboración de la orden de compra.

En constante comunicación con el personal involucrado en esta fase se abordaron los siguientes puntos:

Situación de la empresa en el uso del ERP actual

La situación de la empresa acerca del uso del sistema informático actual se encuentra en un nivel bajo de aplicación en relación con el proceso de compras, ya que no se conoce en totalidad las funciones con las que cuenta el sistema para complementar este proceso.

Información que presenta el sistema actual de la empresa

Existen tres elementos que están relacionados con el proceso de compras: los proveedores, los productos y el proceso de elaboración de la orden de compra. A continuación se describe brevemente cada uno de estos elementos y su relación con el proceso de compras.

Proveedores

El catálogo de proveedores con los que cuenta la empresa es el contacto directo para realizar la petición los artículos. Se realizó un análisis de los tipos datos que se presentan para conocer cuáles son requeridos con otros procedimientos para aprovechar la conexión con las TIC que se requieran implementar. Si es necesario se deben definir nuevos tipos de datos, y especificar cuál es la función que tendría en las adecuaciones que se vayan a realizar para aprovechar el intercambio electrónico de datos en las diferentes actividades realizadas en el proceso, ya que con esto se ahorraría tiempo y se evitaría cometer errores en su captura.

Productos

El catálogo de productos es también un elemento muy importante, ya que se relaciona con la principal actividad de la empresa que es vender, pero también tiene relación relevante con el proceso de compras, ya que es la información principal que detalla en que consiste la compra que se está realizando y quienes son los proveedores. También se analizó cada uno de los tipos de datos que contiene, así como su función en el proceso de compras y otros procesos relacionados.

Elaboración de orden de compra

La orden de compra se define como el contenedor de la información relacionada con los proveedores y los artículos. En ella se detalla los artículos y las cantidades que son solicitadas, se puede llevar una relación de fechas cuando se realizan los pedidos así como los costos relacionados con la mercancía. Se analizó su estructura para saber cuáles tipos de datos son los adecuados para lograr que este documento tenga interacción entre las

diferentes etapas del proceso de compra desde que se formule la petición hasta que se concluya con la adquisición de la mercancía y se efectuó la entrada al inventario. De acuerdo a la adquisición del conocimiento de parte del proveedor/asesor, en esta fase se llegó a la conclusión que la aplicación del conocimiento adquirido, requirió incorporar algunos de datos en las tablas de información de los artículos, de los proveedores y de las órdenes de compra, con el fin de establecer una relación adecuada durante la ejecución del proceso de compras. En la figura 2 se presenta la relación entre estos datos.

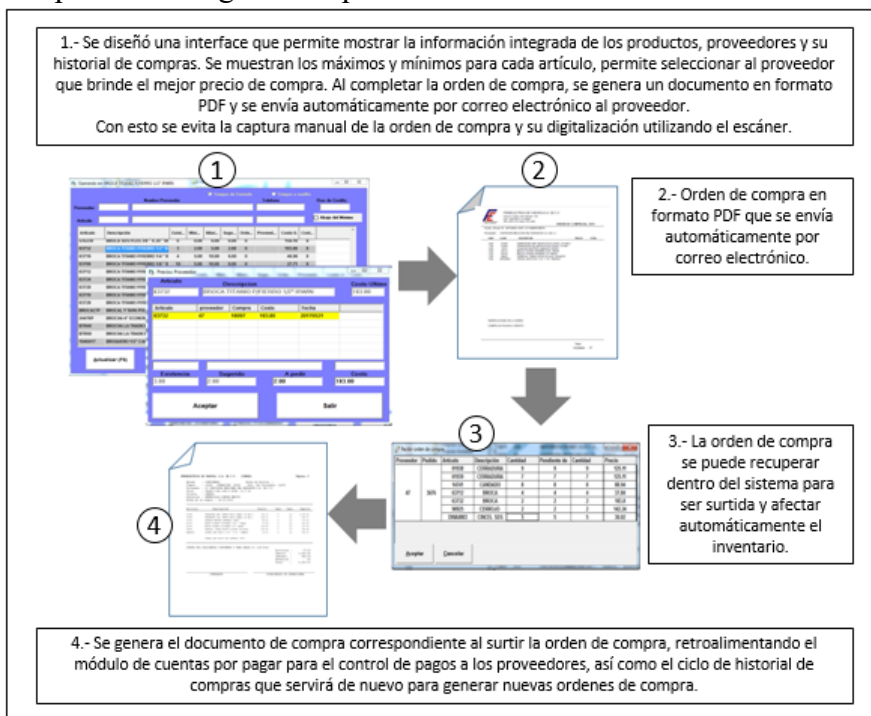


Figura 2.- Descripción de la solución implementada aplicando el modelo.

Estado de evaluación 2.

En este estado de evaluación la interrelación de los elementos del capital humano (conocimientos, destrezas, habilidades) permitió evaluar si la aplicación del conocimiento es favorable. En este punto se plantearon las siguientes preguntas relacionadas con la aplicación del conocimiento:

¿La aplicación de TIC está acorde al proceso de negocio analizado?
 ¿El proceso de negocio está apoyado por una estructura organizacional adecuada? ¿Las políticas de la empresa están soportadas adecuadamente por la estructura organizacional así como por los procesos y la tecnología aplicada? ¿El personal involucrado cuenta con los conocimientos y habilidades necesarias para la aplicación de TIC? En este caso, como las respuestas a estas preguntas por parte de la empresa fueron todas afirmativas,

significa que se logró establecer en primera instancia un buen nivel acoplamiento entre los elementos del capital estructural. En caso de que este estado de evaluación no brindara resultados satisfactorios, se debe reforzar la fase B y analizar en consecuencia el estado de evaluación 1, lo cual podría llevar de regreso a reiniciar con la fase A, esto con el fin de avanzar a las etapas subsecuentes satisfactoriamente, o regresar entre fases y estados de evaluación anteriores como se considere necesario para lograr que se cumpla con el propósito de cada etapa del modelo.

Fase C: Codificar y compartir el conocimiento.

En esta fase se codificó el conocimiento, es decir, se documentó todo lo relacionado con el conocimiento aplicado de las TIC en el proceso de compras, así como las personas y las áreas de trabajo involucradas en dicho proceso. Se elaboró un manual de procedimientos describiendo los pasos necesarios para realizar el proceso de compra. El documento fue guardado en un archivo de procesador de texto en una carpeta específica para facilitar su almacenamiento y recuperación. Una vez codificado el conocimiento, la empresa ya cuenta con una fuente de conocimiento que puede consultar y actualizar de acuerdo a los cambios que se vayan presentando, logrando con ello mejores condiciones para compartir adecuadamente el conocimiento.

Estado deseado

Con la aplicación de este modelo, el estado deseado que se pretende es mejorar el nivel de aprovechamiento de las TIC en los procesos de negocio, y lograr al mismo tiempo la integración equilibrada de los tres factores del capital intelectual (capital humano, capital estructural y capital relacional). Con el fin de conocer el desempeño sobre la aplicación del modelo en el proceso de compras de la empresa, se dejó pasar un tiempo de 30 días trabajando con el nuevo proceso de compras. Se tomaron en cuenta 8 indicadores para elaborar un cuestionario y se aplicó a todas las personas relacionadas con este proceso. El cuestionario midió la percepción de las personas referente al mejoramiento del proceso de compras antes y después de aplicar el modelo. Se utilizó una escala de 1 a 5 (1 corresponde al nivel más bajo y 5 al nivel más alto de percepción). En la tabla 2 se muestran los promedios obtenidos del total de cuestionarios aplicados. En general las personas involucradas percibieron una mejora bastante significativa a la manera de cómo se realizaba el proceso de compra antes de aplicar el modelo. El puntaje acerca de la percepción del mejoramiento del proceso de compras aumentó positivamente en 179%. Esto significa que todas las personas que participan en dicho proceso consideran que se ha mejorado sustancialmente el nivel de aprovechamiento de las TIC en el proceso de compras.

Tabla 2.- Resultados de aplicación de modelo para mejorar el nivel de aprovechamiento de las TIC en el proceso de compras

Indicadores a evaluar	Promedio antes del modelo	Promedio después del modelo	Diferencia Antes-Después
Facilidad para integrar la información de artículos y proveedores	2	4.5	2.5
Facilidad para seleccionar el mejor precio de compra	1	5	4
Tiempo de elaboración de la orden de compra (OC)	2	5	3
Tiempo de revisión y autorización de la OC	2	5	3
Tiempo para enviar la orden de compra por e-mail	2	5	3
Tiempo de respuesta por parte del proveedor	2	4	2
Facilidad para el surtido de la OC	1	5	4
Nivel de aprovechamiento de TIC en el proceso de compras	2	5	3
Promedio	1.71	4.79	3.07
Promedio %			179%

Fuente: Elaboración propia.

Discussion

De acuerdo a los resultados obtenidos de los indicadores establecidos se puede observar un mejoramiento considerable en el proceso de compras de la empresa (ver tabla 2). Con la aplicación del modelo se han realizado los procesos de la GC que se relacionan con la implementación de las TIC, y con los estados de evaluación correspondientes contenidos en el modelo se ha logrado mejorar el nivel de aprovechamiento en el proceso de negocio relacionado con las compras. Esto lleva a establecer que las TIC representan una gran oportunidad para que las PYMES mejoren su nivel de competitividad enfocándose en los procesos de negocio, pero su aplicación debe estar basada en medidas de eficiencia y productividad (Maldonado, García, Martínez, Aguilera y González, 2010). En consecuencia, la aplicación del modelo propuesto pone en práctica los procesos de la GC para avanzar sistemáticamente en la implementación de las TIC, mostrando evidencia de que las PYMES haciendo uso del conocimiento adecuado obtendrán mejores resultados en sus procesos de negocio logrando un buen equilibrio entre el capital humano, capital estructural y capital relacional, que aquellas PYMES que tengan TIC pero carecen del conocimiento para su implementación, y solo cuentan con un enfoque meramente de adquisición tecnológica y no basan su

aplicación en la GC. Por tal razón debe quedar claro que el uso de las TIC no genera beneficios por el sólo hecho de adoptarlas, sino que sólo traerá beneficios a la empresa cuando se complemente con capacitación del capital humano, por ser el principal factor del cual depende la capacidad de absorción y la puesta en práctica del conocimiento (Rohrbeck, 2010).

Conclusion y perspectivas futuras

En consecuencia se puede observar que el aprendizaje continuo y la habilidad para desarrollar nuevas competencias en la aplicación de las TIC, las convierten en herramientas facilitadoras para las actividades empresariales. Aunque intervienen muchos factores en su implementación, el principal factor en que se debe sustentar es el capital humano, que en proporción a sus conocimientos, destrezas y habilidades hacen posible que surjan las ventajas de la incorporación de las TIC en las empresas en todos sus ámbitos como son gestión interna, comunicación con clientes y proveedores, sistemas de ventas, marketing, producción y recursos humanos.

En el escenario mexicano las PYMES representan una amplia área de oportunidad de mejoramiento en la implementación de la tecnología informática, por lo que se puede considerar para futuros trabajos aplicar este modelo en otros procesos de negocio en otras PYMES de diferente giro comercial y analizar su desempeño, con el fin de observar la adaptabilidad para implementar un enfoque sistémico en la aplicación de las TIC relacionándolas con la mayoría de los procesos de negocio de las empresas.

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Effects of Teachers' Participation in Management of Physical and Material Resources on Their Motivation, Kenya

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Abstract

Motivation is one of the many factors that contribute to employee performance. Teachers' motivation in public secondary schools has been highlighted as one of the factors that contribute to employee performance (Matoke, Okibo & Nyamongo, 2015). There is however a dearth of literature on the effects of teachers' level of participation in management of physical and material resources on their motivation. The purpose of this study was to investigate the effects of teachers' levels of participation in management of physical and material resources on teachers' motivation in public secondary schools in Kiambu, Machakos and Kajiado Counties, Kenya. The study sought to establish whether there was a significant relationship between the teachers' level of participation in management of physical and material resources on teachers' motivation in secondary schools. The study used Kurt Lewin change management model (1951) and Herzberg Motivation Hygiene Theory (1959). Correlation design was adopted with a sample size of 58 principal and 345 subject teachers. Data was collected using questionnaires for the teachers and principals and self-administered observation guide. Stratified random sampling technique was used to get the sample size of the respondents. Validity was established through expert consultation and reliability determined using cronbach alpha. Means were computed to compare the teachers' and principals' opinions on the teachers' level of participation in management of physical and material resources. Mean of below 2.00 was considered low level, mean between 2 to 3.5 was moderate whereas as mean above 3.5 was regarded high level. Independent t-test was used to establish whether there was a statistical mean difference between the teachers and school principals' opinion on the teachers' level of teachers' participation in management of physical material resources. Simple regression analysis was carried out in order to establish the effect of teachers' participation in the management of physical and material resources on their motivation. The study

established that teachers were moderately involved in management of physical and material resources. The independent sample t-test results shows that there was a significant difference in the mean difference between the means of principals' and teachers' views on teachers' participation in management of physical and material resources $t(377) = -6.073, p = 0.00$. The study revealed a statistical significant relationship between teachers' level of participation in the management of physical facilities and their motivation ($\beta = .399, p\text{-value} < .01$). There is need to embrace participative structures that encourage teachers' participation in management of physical facilities and material resources. Through such ventures the teachers will highly be motivated to work and consequently improving the quality of education in Kenya.

Keywords: Teachers' participation, management, physical facilities, material resources, commitment, and motivation, secondary schools

Introduction

Over the last decade, research shows that the major problem in provision of education has always been attributed to lack of physical and learning resources in school environment. Many schools in developing and developed countries indicate lack of adequate physical and material resources which has detrimental effects on motivation (Olatunji, 2013; Isaiah 2013; Akinfolarin 2015). Vanbaren (2010) defines teacher motivation as a process of encouraging and inspiring teachers to perform their duties effectively. Teacher's participation in management of physical facilities and material resources is a critical aspect because knowledge, skills and values are learned at school. According to Freeman, Greene, Dreibelbis, Saboori Muga, Brumback, Rheingans (2011) school facilities and materials comprises of sanitation, hygiene and water reservoirs. They argue that students and teachers in developing countries spend most of their time absent from schools due to diseases contracted within the school environment. The evidence of inadequate facilities suggests the need for greater infrastructural investment in most institutions. Leithwood and Jantzi (2006) carried out a study on teacher working conditions as evidence for change. The study established that teachers' motivation is associated with positive attitudes, optimistic views, and enthusiasm whereas low motivation is associated with cynicism and feelings of despair. Further, he found out that behaviour associated with low morale included less effective teaching performance, absenteeism, turnover and resistance to change.

Duran (2008) *examined the extent to which the availability of adequate infrastructure affected the achievement of educational goals in Zimbabwe. The study used qualitative design comprising of 20 students and 32 teachers. The study findings indicated that teachers did not participate in provision of*

school infrastructure. Further, the study revealed that equipped school were more functional and presented better learning opportunities. It is however not known how teachers participation in management of physical and material resources affects teacher's motivation thus this study sought to establish the effect of teacher in management of physical and material resources in Kiambu, Machakos and kajiado Counties. *The study recommended school managers and policy makers should take note of the positive impact that a functional, clean and attractive school building can make on education.* Earthman (2004) argued that building features such as ventilation, lighting, acoustical control, design classification and overall impression have effect on teachers' motivation. According to Dorman (2008), physical and materials resources comprises of textbooks, laboratories, chemicals, tools and equipment, teaching aids, stores and offices. He reported that factors affecting teachers' motivation included the nature policies on the use of the physical and material resources and working conditions. Sergiovanni (2009) stated that school managers needed to recognize the importance of teachers' participation in management of school facilities and material resources. He asserted that effective schools strived to motivate teachers by providing adequate learning resources. A study by Bush, Joubert, Kiggunduand, Rooyen (2010) examined the significance of participative management in enhancing instructional and learner outcome in South Africa. The study used case study design. The study revealed that most of the schools lacked teaching-learning materials and teachers were poorly motivated.

Devos, Tuytens, & Hulpia (2014), conducted a study on the relationship between principals' leadership styles and teachers organizational commitment. Data were collected from 1495 teachers in secondary schools. The study used structural equation model. The findings indicate the principals' leadership style and teachers' commitment was as a result of distributed leadership (deputy principal, teacher, participative decision making, and collaboration). The path model revealed satisfactory model fit results $\chi^2 = 231.41$ (df=27; $p < .001$) TLI = .925, AGFI = .938, RMSEA = .071. The principals' leadership style explains 20% of the variance in teacher leadership; 36% of the variance in participative decision making; 44% of variance in teachers' commitment was attributed to distributive leadership and principals' leadership. However, the direct influence of the principal leadership on teachers' commitment was rather weak. This study focused on relationship between principles' leadership styles and teachers' organizational commitment while the current study focused on the effect of teachers' level of teachers' participation on their motivation.

Lewin (2008) states that teachers' participation in the management of physical and material resources comprised of maintaining, procuring equipment and learning materials. Slaouti and Barton (2007) argued that lack

of ICT facilities and mentors, poor time management and lack of opportunities for apprenticeship had negative effects on motivation. The focus of the current study is the level of teachers' participation in management of physical and material resources using regression analysis.

Korkmaz, İhsan, Yıldız and Fikret (2011) undertook a study to investigate the effect of 12-weeks recreational activities on university students' self-esteem. The sample consisted of 40 students from Duzce University. Experimental group consisted of 20 students while group comprised of 20 students. Descriptive statistics, independent sample t-test, paired sample t-test and Pearson's correlation analysis were used to analyze the data. Level of significance was 0.05. Recreational activities consisted of football, volleyball, swimming facilities among other facilities. Post-test applications were made after 12 weeks. There was no significant difference between pre-test and posttest for control group ($p > 0,05$), pre-test and post test scores of experimental group significantly differed ($p = 0.05$), a significant difference appeared between post-test self-esteem points of experimental group and control group ($p = 0.05$). As a result, recreational facilities and activities positively affected self-esteem of university students. The study by Korkmaz, İhsan, Yıldız, Fikret focused on effect of 12-weeks recreational activities on university students' self-esteem yet this study attempted to establish the effect of teachers' level of participation in management of physical and material resources on teachers' motivation.

Abdul and Isaac (2016) carried out a study the state of academic facilities and its influence on teachers' job stress in Tamale polytechnic. The study adopted a case study approach in a tertiary institution in Ghana. Accidental sampling technique was used to select the study size. A questionnaire was used for data collection. Cronbach's Alpha and KMO was used to test sample reliability which yielded coefficients ranging from 0.734 to 0.755. Data were analyzed using inferential statistics (Pearson Product Moment Correlation and multiple regressions. Results revealed a significant statistical relationship between the status of facilities and teachers' motivation. It was concluded that inadequate academic productivity exerted pressure on teachers. The study focused on the effect of recreational activities on teachers' motivation. However the current study focused on the teachers' level of participation in management of physical facilities on motivation.

Ali, Naeimeh, Javad and Hatam (2015) examined the relationships between teachers' perceptions of organizational commitment and school health in Turkish primary schools. The sample comprised of 323 randomly selected teachers from 20 primary schools. Results indicated that teacher compliance and commitment was negatively related to both identification and internalization. School health facilities, institutional integrity, principal professional leadership and morale negatively predicted teacher commitment

based on compliance. Professional leadership was the only school health dimension that was significant in predicting identification commitment. Moreover, school health, academic emphasis and resource support were not significant predictors of teachers' commitment. The study examined the relationships between teachers' perceptions of organizational commitment and school health while the current study focused on the level of teachers' participation in management of physical and material resources on their motivation.

Jasper and Le, Bartram (2012) carried out a study on water and sanitation in schools in relation to health and educational outcomes. The goal was to establish the impacts of water and sanitation the school environment. Water shortage had negative effects of attendance, physical, social and psychological aspects. The study also revealed higher rates of absenteeism from schools during menses due to poor sanitation facilities. Furthermore, there was decrease in diarrheal and gastrointestinal diseases with increased access to adequate sanitation facilities. Easy access to safe drinking water and hygienic toilets that provided privacy to users had positive impact on students' and teachers' health which influenced motivation. The study by Jasper, and Le Bartram focused on provision of water and sanitation in relation to health and educational outcome however the current study was on the effects of participation on teachers' motivation.

A study by Garipagaoglu (2013) revealed that lack of physical facilities and poor salaries affected had negative effects on teachers' commitment and motivation. According to Ayeni and Adelabu (2012) lack of teachers' participation in management of facilities (furniture, ventilation, incinerators, urinals and audio-visuals) resulted into low morale among teachers. They also stated that teachers' participation led to creativity and commitment while absence of such facilities led to poor performance of duties (Osei, 2006). These authors had focused more on teachers' work performance and therefore a gap existed in relation to effects of teachers' participation in management of physical and material resources on their motivation.

Gouri, Pravat and Soumen (2012) carried out a study on assessment of school infrastructure at Primary and Upper Primary Level: A Geospatial Analysis. The study focused on infrastructure accessibility, type and conditions of the classrooms. Moran's I statistics was used to estimate the spatial distribution of infrastructure. The facilities comprised of toilets, drinking water, library, electricity, ramps, perimeter wall, playground, and kitchen and computer facility. The facilities were assigned weights based on Saaty's analytical hierarchy. The thematic areas were integrated in GIS software based on multi-criteria approach in Oder to provide educational development infrastructure index. Mean values were categorized into eight groups whereby: 1 to 1.5 was regarded poor; 2 to 3.5 moderate; 4 to 5.5 good;

6 to 7.5 very good; 8 to 9 excellent. Four different zones were delineated very good, good, moderate and poor. The study concluded that Geo-informatics technology was significant and useful in identification of infrastructure development. The study did not establish the effects of the teachers' level of participation in management of physical facilities and material resources which is the purpose of this study.

In Ghana, Salifu (2014) carried out a study on barriers to teacher motivation for professional practice in the education sector. The study used the qualitative approach method. The findings revealed frustrations and stress in the teaching profession as a result of poor working conditions. Further, he argued that the size of the classes, working hours, management styles and the school location were some of the factors which affected teachers' motivation. The study did not look at participation in relation to motivation which is the focus of this study. In Zambia, Wadesango (2012) reported that teachers' participation in management of physical facilities resulted into low morale and stressful school governance. He observed that teachers' participation in management of physical facilities improved the working conditions. However, Wadesango failed to indicate the level of participation and the nature of the relationship.

Ayeni and Afolabi (2012) carried out a study on teachers' instructional task performance and quality assurance of students' learning outcomes in Nigerian secondary schools. The findings indicated that teachers' instructional work entailed delivery of lessons, evaluation of learning outcome, classroom management, and feedback. Apparently, this study was conducted in a secondary school setting and captured performance of teachers' instructional work. However the study did not focused on the level of teachers' participation in management of physical and material resources on their motivation.

Ayele (2014) carried out a study on Teachers' job satisfaction and commitment in general secondary schools of Hadiya Zone in Nigerian secondary schools. The study focused on the internal and external factors of teachers' job satisfaction and level of teachers' commitments, a total of 159 respondents comprising of 119, eight (8) principals, 16 deputy-principals, 8 supervisors and eight (8) education office expertise. Questionnaire and interview were the main instruments of data collection. The analysis of the quantitative data was carried out by using mean, standard deviation and Pearson product correlation coefficient. The findings indicate a significant and positive relationship between teachers' job satisfaction and commitment ($r = .77$, $N = 105$), ($r = .71$, $N = 30$). Higher levels of teachers' job satisfaction were associated with higher levels commitment. The study recommended provision of adequate facilities, equipment and material such as staff housed, waters, electricity, transport, working conditions and refreshments. Moreover,

the study did not show the effects of the relation which is the purpose of this study.

Further, Kimutai and Kosgei (2012); Ayeni and Afolabi (2012) argued that quality of teachers' work had a significant impact on pupils' academic achievement. The two authors focused on teachers' work performance and therefore the existing gap was to establish effect of teachers' participation in management of physical and material resources on their motivation. Mwangi (2013) argues that teachers lack enthusiasm and were unable to teach effectively to achieve the instructional objectives. Ayele (2014) reported that teachers had negative attitudes toward towards the teaching profession due to poor performance of students in national examinations. Apparently a gap existed to determine the effect teachers' participation in management of physical and material resources on their motivation which was not focused in the study.

King'oina, Kadenyi and Ngaruiya (2015) carried out a study to investigate the effect of teachers' morale on standard eight pupils' academic achievement in public primary schools in Marani Sub-County, Kenya. The study utilized ex-post facto design. Simple random sampling technique was used to select a sample of sample size was 100 teachers. Questionnaire was used in data collection. Data was analyzed using frequencies, percentages and means and Pearson coefficient correlation. All null hypotheses tested at 0.05 alpha level were rejected and led to affirmation that there was a significant relationship between teachers' morale and pupils' academic achievement. Based on the results, the study recommended school managers to teachers' participation in internal quality assurance programmes. Educational stakeholders were encouraged to supported and motivate teachers in order to improve academic performance in schools. The study investigate the effect of teachers' morale on standard eight pupils' academic achievement leaving a gap on effects of teachers participation on their motivation.

Ireru (2015) carried out a study on the influence of motivation on employee performance in Non-governmental Institutions in Kenya. The study focused on the influence of compensation, promotion, recognition and supervision on employee performance among the employees of Kenya Tenri Society. The study adopted a descriptive research design. Data was collected using a questionnaire. The data was analyzed using frequencies, means and Pearson's co-efficient correlation. The findings indicated a significant statistical difference between compensation, promotion, recognition and supervision on employee performance in the four aspects. The study recommended the NGOs to develop and implement payment clear promotion structures, career advancement policy, communication channels and to enhance employee recognition with financial rewards that attract competent employees. It was however not known how teachers' participation in

management of physical and material resources affected teachers' motivation which is the purpose of this study.

Momanyi (2015) carried out a study on factors affecting teacher motivation in public secondary schools in Marani sub county, Kisii County. The study focused on the effect of job satisfaction, reward system, training and development, work situational factors on teacher motivation. Descriptive research design was used for the study. Random sampling technique was used to select teachers while purposive sampling technique was used to select the principals. The sample size consisted of 126 respondents constituting 112 teachers and 14 principals. Questionnaires were used to collect data from teachers while interview schedules were used to collect data from principals. Data was analyzed using means, standard deviation, frequencies and percentages. Content analysis was used to analyze qualitative data from the interview with the principals. The findings indicate a close association between of job satisfaction, reward system, training and development and work situational factors had effects of teachers' motivation. However the study used descriptive statistics and did not establish the effect of participation and motivation which is the purpose of the current study using regression analysis.

Matoke, Okibo, and Nyamongo (2015) carried out a study on determinants of teacher motivation in public secondary schools in Masaba South Sub-County. He used regression analysis to establish the effect of working conditions, work-load and teaching resources on motivation. The study established that physical and material resources had a significant (p-value of .041) effect on teacher motivation. The standardized beta value of .764 indicated that an increase in participation in management of physical and material resources by 1 unit increased teachers' motivation. The study was carried out in Masaba Sub-County while the current study was done in Kiambu, Machakos and Kajiado Counties, Kenya. In addition, Juma (2011) revealed that teachers' participation in management of change relating to the provision of classrooms, laboratories, libraries, playing fields and textbooks had positive effects on teachers' motivation. The study did not use inferential statistics.

Statement to the Problem

In Kenya, the education system places school principals in a position to make all major decisions with little participation of teachers (Republic of Kenya, 2012). This was attested by Mualuko, Mukasa, and Achola (2009); Momanyi (2015); Ireri, (2015) who argued that most school principals often applied non-participatory management styles which hindered teachers' participation in management of physical and material resources hence affecting their morale. Due to this low participation of teachers in management

of physical and material resources, there was need to carry out a study of this nature in order to establish the effect of teachers' level of participation in management of physical and material resources on teacher's motivation in Kajiado, Kiambu and Machakos counties, Kenya.

1. The study sought to investigate the following objectives:
 - i) To establish whether a statistical significant mean difference existed between teachers and principals' opinion on the level of teachers' participation in management of physical material resources in public secondary schools.
 - ii) To determine the effect of teachers' participation in management of physical facilities on levels of teachers' motivation in public secondary schools.

Hypothesis

H₀₁: There is no significant relationship between the views of teachers and school principals' on the level of teachers' participation in management of physical material resources in public secondary schools.

H₀₂: There is no significant relationship between teachers' level of participation in the management of physical facilities and material resources and teachers' motivation in public secondary schools.

2. Theoretical Framework

This study was guided by Kurt Lewin change management model (1951) in Stephen, Todd, Kenneth (2015). The change theory is based around a 3-step process (Unfreeze-Change-Freeze) that provides a high-level approach to change. It gives a manager or other change agent a framework to implement a change effort, which is always very sensitive and must be made as seamless as possible. Unfreeze is the diagnostic stage which involves identifying the status quo (problems) and breaking down the existing status quo before building up new ways of operating. It explains why the existing way of doing things cannot continue. Unfreezing is dissatisfaction with the present existing practices. Moving to the new state requires identifying the resisting and the driving forces thus reducing the impediments while enhancing driving forces. Using the analogy of a building one examines the preparedness to change the existing foundations as they might not support add-on otherwise the building may risk collapsing. However, the transition does not happen overnight as some may take much longer time to recognize the benefits in order to be highly connected to the organization throughout the transition period. Unfortunately, some are genuinely harmed by change particularly those who benefit strongly from the status quo.

After the change has been put into operation, a process of refreezing (consolidation) becomes necessary. The signs of refreeze include a stable

organization, consistent job descriptions, new roles, new organization structure, new work methods, constructive amendments. The refreeze stage helps people and the organization to internalize (institutionalize) the changes. With a new sense of stability, they may feel confident and comfortable with the new ways of working. Care should be taken to avoid getting caught up in a transition trap where nothing ever gets done to full capacity. Lewin's (1951) theory has been criticised by several scholars, for instance Dawson, (1994); Dent and Goldberg, (1999); Kanter et al., (1992) argued that the theory is outdated, unfashionable and simplistic. Others argue that Lewin's planned approach is too simplistic, mechanistic and therefore not appropriate for open-systems that are subject to uncertain and turbulent environments (Dawson, 1994; Kanter et al., 1992; Pettigrew, 1990a, 1990b; Wilson, 1992). Despite the criticism, some scholars support the theory by advancing that the theory is more relevant to incremental and isolated change projects which are often the cases for Australian local government (Dawson, (1994). Lewin's contribution to explaining individual and group behaviour during the change process is still relevant in local government context (Burnes, 2004a). The model is also considered to be more appropriate for organisations such as city councils school that are based on traditional top-down, command-and-control style of management, with segmented, small units and slow change timelines. Therefore, Lewin's (1951) models are more appropriate for a top-down, management-driven approaches to change, which is similar to the change management processes employed in city councils (Dawson, 1994; Kanter et al., 1992; Wilson, 1992)

For this study the model is considered appropriate because schools in Kenya are models in a top-down management driven approach. This is as evidenced Basic Education Act, (2012) which indicates that the education system in Kenya places school principals in a position to make all major decisions with little participation of teachers. Mualuko, Mukasa, and Achola (2009) further alludes that most school principals often applied non-participatory management styles which hindered teachers' participation in school change management hence affecting their morale. As a result of the head teachers enjoying the monopoly of managing schools, teachers feel demoralized to work. Hence need to apply change management theory which will allow teachers to be involved in the change management of school in areas such as curriculum, physical activities, students and teachers activities, school finance and community relations.

The study was also guided by Herzberg Motivation Hygiene Theory (Herzberg, Mouser & Snyderamn, 1959) in Tan, Teck Hong and Waheed, Amna (2011) which elaborates the factors that cause satisfaction and dissatisfaction among white-collar workers. The theory was later used by among other Schermerhorn (2003); Hunsaker (2005) to elaborate factors that

lead to motivation and demotivation of the workers. They argued that workers who are not involved in change management of the organization are highly demotivated hence affecting their performance.

According to Herzberg, Mouser and Snyderamn (1959) factors that produce satisfaction are very different from those leading to dissatisfaction. One concern might produce satisfaction but absence of it would not necessary produce dissatisfaction. Further, they identified extrinsic and intrinsic factors. The extrinsic factors included salary, working conditions while intrinsic factors were the motivators. The hygiene factors (extrinsic factors) included the company policies and administration, supervision, interpersonal relationships, working conditions, salary, status and security. These extrinsic factors caused workers to be dissatisfied while their presence consequently failed to increase job performance. On the other hand motivators make workers to work hard and they are associated with job context or what people actually do at work. They include: achievement; recognition, work-itself, responsibility, and growth or advancement. They are based on a person's ability to achieve and maintain a positive attitude towards their organization and career.

Kurt Lewin deals with change and states that change is a motivator and it is inevitable. This change can either be from within or from outside. Externally, the Teachers Service Commission (TSC), Ministry of Education (MoE), Bill of rights, Kenya vision (2030) exert pressure on the teachers to do things differently in order to accommodate the changing circumstances. From within, there is need to set a social environment where teachers see their personnel needs as being satisfied for motivation purposes. If these personal needs are satisfied it promotes teachers' self-esteem and motivates them to improve the performance of leading to job satisfaction. Change itself is a motivator and therefore the Kurt Lewin model and Herzberg's theory complement each other. The study thus contents that the schools as organizations are concerned with maximizing production and performance while at the same time ensuring that the teachers concerns are catered for in an attempt to achieve the institutional goals. Hence the modern management practices in schools emphasize the need for teacher participation in the management of education change and its effects on teacher motivation.

Methodology

The study used proportional stratified random sampling techniques to select a sample size 58 school principals and 345 teachers. Data were collected using questionnaires for subject teachers and principals and an observation guide. The study was anchored on Kurt Lewin change management model (1951) and Hertzberg Motivation Theory (Herzeberg, Mouser & Snyderamn, 1959). Lewin change management model is three-step process (Unfreeze-

Change-Freeze) which provides change agents a framework to implement change. Herzberg Motivation Hygiene Theory elaborates the factors that caused satisfaction and dissatisfaction among white-collar workers. Correlation design was adopted with a sample size of 58 principal and 345 subject teachers. Stratified random sampling technique was used to get the sample size of the respondents. Validity was established through expert consultation and reliability determined using cronbach alpha. Data was collected using questionnaires for the teachers and principals and self-administered observation guide. Teachers were expected to indicate their responses on a five Likerts's scale whereby: 5 represented a greater extent 4: To some extent 3: Not sure 2: To a little extent and 1: Not at all. According to Bademo and Ferede (2016), the mean value below 2.00 was deemed low level, mean of 2 to 3.5 was moderate whereas mean above 3.5 was regarded high level. Mean of each internal consistent item and total mean for new recorded variable was computed. Participation in management of physical and material resources comprised of budget preparation; advising on the specific departmental needs; procurement and accounting. Summation score of the five Likerts scale items for each and every respondent was computed in order to make comparisons on the teachers and principal views. A t-test was used to establish whether there was a statistical significant difference between the means on the opinion of the teachers and the school principals. Simple regression analysis was run to determine the effect of the teachers' levels of participation in management of physical materials on teachers' motivation.

Research Findings and discussion

Distribution of principals and teachers by gender

The study revealed that majority 36(64.3%) of the school principals in school management were aged between 41-50 years and that 125(38.6%) subject teachers were less than 30 years. The results indicate that teachers who were not in school management were younger compared to school principals who were a bit older indicating that the older the respondents the higher chances of holding positions in school management. Gender of a principal may affect teachers' motivation because teachers of same gender may feel more satisfied working under the leadership of a preferred gender. For example female principals may influence the motivation of female teachers as a result of their successful leadership.

3. Teachers' level of Participation in Management of Physical and material resources

The study sought to determine teachers' level of participation in management of physical and material resources. The study was guided by the research question: What is the teachers' level of participation in management

of physical? The means on the views on views of subject teachers and school principals were computed in order to make comparisons. The descriptive analysis of teachers' responses indicated that highest mean of (mean = 2.87) for school strategic plan to address emerging issues and (mean = 2.65) moderate participation in requisition and procurement of facilities and equipment. The total cumulative mean (2.53) teachers indicate moderate level. This means that teachers' level of participation in management of physical and material resources was moderate according to the views of teachers. Consequently, cumulative analysis of principals' response on teachers' participation in management of physical and material resources indicated moderate level (3.49). Despite the mean differences, they fall within the range of 2 to 3.5 which is considered to be moderate participation according to Bademo and Tefera (2016).

This is an indication that subject teachers and school principals' responses on indicated moderate level of teachers' participation in management of physical facilities and material resources. Even though the teachers and principals responses on the level of teachers' participation on management of physical material resources indicated that there is moderate participation, the collaborated results through the observation schedule shows that there is little participation. This was evidenced by the observation check list which indicated that teachers did not have inventory of equipment and supplies. This shows that teachers did not fully participate in decision making relating to inventory of equipment and supplies in the departments. Further, the observation guide shows that teachers did not have records on maintenance and servicing of the facilities; classrooms, laboratories and library and revised framework on emerging issues. This shows that most of the teachers did not participate in maintenance and servicing of the facilities; classrooms, laboratories and library and revised framework on emerging issues an indication that most of the schools do not adhere to regulations that they must have such documents to promote transparency in schools. Generally, the observation guide confirms that teachers participated in management of physical facilities and there were documents to support such activities.

T-test on the difference between the means of principals and teachers views on teachers' participation

In order to establish whether there is a statistical mean difference between the teachers and school principals' opinion on the level of teachers' participation on management of physical material resources, a t-test was computed. The results is presented in Table 1

Table 1: Independent Sample t- Test on teachers and principals views on teachers' participation in management of physical and material resources

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	T	Df	Sig. (2-tailed)
Physical Facilities	Equal variances assumed	5.624	.018	-6.073	377	.000
	Equal variances not assumed			-6.912	82.833	.000

The independent sample t-test results show that there was a significant difference between the teachers and school principals' opinion. (M=2.53, SD=1.13) and principals (M=3.49, SD=0.94) conditions; $t(377) = -6.073$, $p = 0.00$. This indicates that mean difference between the responses from the school principals and the teachers on the level of teachers 'participation in the management of physical and material was statistically significance.

Regression analysis on the effect of the teachers' level of participation on motivation

In order to establish the effect of teachers' participation in the management of physical and material resources on motivation, a regression test was conducted. This generated a model summary Table and ANOVA results as presented below.

Table 2: Simple regression model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.429 ^a	0.184	0.181	0.985741388

a. Predictors: (Constant), physical facilities

As presented in Table 2 it can be deduced that 18 per cent of the total variability in the motivation is explained by teachers' participation in the management of school physical facilities. The results show that the adjusted r^2 is 0.18, which implies that teacher's participation in management of physical and material resources accounts for 18% of the variance in teachers' motivation. The value of adjusted r^2 which is 0.18 implies that the that teacher's participation in management of physical facilities predicts teachers' motivation.

The Analysis of Variance (ANOVA) table was also generated with the aim of establishing whether teachers' participation in the management of physical and material explains the variation in teachers' motivation. The ANOVA results were presented in Table 3

Table 3: ANOVA results on effect of teachers' participation in the management of physical and material resources on motivation

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	55.824	1	55.824	57.45	.000 ^b
	Residual	246.808	254	0.972		
	Total	302.632	255			

a. Dependent Variable: motivation

b. Predictors: (Constant), physical facilities

Table 3 shows that teachers' participation in the management of physical and material resources had high explanatory power on variation in teachers' motivation. This is as attested F Statistics which has value $F(1, 234) = 57.45$, $p < .001$ suggesting that the model has high explanatory power hence acceptable for the regression equation

To establish the effect of teachers' participation in the management of physical and material resources on motivation, a simple regression test was run. This appears in Table 4

Table 4: Regression on teachers' participation in management of physical and material resources on motivation

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	2.288	0.159		14.42	0.000
Physical facilities	0.399	0.053	0.429	7.58	0.000

a. Dependent Variable: motivation

Table 4 shows that teachers' participation in the management of physical facilities has effect on teachers' motivation. This is as shown by (p value < 0.001). The results also show that the coefficient of teachers' motivation is positive (2.28) which implies that, the slope "a" is statistically significant. The intercept of the regression line is $Y = 0.39X + 2.29$, meaning that when teachers participation in management of physical and material resources increases by 1 unit teachers motivation increases by 22%.

The regression equation is expressed as follows:

$$Y = a + bX,$$

Whereby Y is teachers motivation, X is teachers' level of participation in management of physical material and physical resources and "b" is the slope (gradient) of the line (the amount Y increases for each unit increase in X) while "a" is the intercept. This generally implies that the more the teachers are involved in the management of physical and material resources the more they are motivated.

The regression results of this study indicate that there is a significant relationship between teachers' participation in management of physical resources and teachers motivation as evidenced by P-value < 0.005. The findings concur with the Ali, Naeimeh, Javad, Hatam (2015); Lewin (2008) who established that teachers' level of participated in management of water, hygiene, and sanitation, procurement of equipment, learning materials was an important aspect of management. He added that teachers' participation in budget preparation, repairs and maintenances of classrooms, laboratories, toilets had effects on teachers' motivation. Similarly, Jasper, Le, Bartram (2012) revealed higher rates of absenteeism from schools during menses due to poor sanitation facilities. Teachers required an environment where they felt their needs were being met. The study is in line with the findings of Afshari, Bakar, Luan, Samah, and Fool (2009) who also found that teachers 'participation in ICT integration in educational programmes was a factor of motivation. Also the results concurs with the work of Matoke, Okibo, & Nyamongo (2015) who established that participation in provision of physical and material resources had a significant statistical effect (p-value of .0126) on teacher motivation. Similarly, Chimombe (2011) reported that provision of physical facilities created an environment that promoted effective teaching and learning. Participation in management of facilities and resources is an important aspect due to the social and health influences in relation to motivation.

Conclusion

The study established that teachers were moderately involved in management of physical and material resources. There was a significant difference in between the principals' and teachers' views on teachers' participation in management of physical and material resources $t(377) = -6.073$, $p = 0.00$. The study revealed a statistical significant relationship between teachers' level of participation in the management of physical facilities and their motivation ($\beta = .399$, $p\text{-value} < .01$). Therefore, the null hypothesis "there is no relationship between teachers' level of participation in the management of physical facilities and material resources on teachers' motivation" was rejected. This means that teachers' participation in management of physical and material resources has significant effect on teachers' motivation. There is need to embrace participative structures that encourage teachers' participation in management of physical facilities and material resources. Through such ventures the teachers will highly be motivated to work and consequently improving the quality of education in Kenya.

Recommendations

Institutions should put in place mechanisms where teachers are involved in management of school physical facilities and material resources. Such facilities cater for teaching-learning, social and health purposes and therefore teachers should be at the forefront in various aspects of management in educational institution. This could enhance their motivation leading to effectiveness in performance of duties.

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The Impact of Remittances on the Import Demand Function in Jordan: An ARDL Bounds Testing Approach

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Abstract

The present study investigates the short- and long-run relationships between Jordan's aggregate import demand function and its macroeconomic determinants, in addition to remittances. The study employs the autoregressive distributed lagged (ARDL) model to estimate the import function over the period 1975–2016. The preliminary statistical tests, the ADF test, confirmed that none of the variables is integrated of order 2, while the bounds testing provided evidence of the existence of a long-run equilibrium relationship between the included variables. Moreover, the diagnostic tests showed that the estimated model is free of the statistical problems. The long-run results indicated that remittances, inflation rate, and investment have a direct relationship with imports, whereas the import price index and FDI have a negative relationship. Based on these results, the study suggests that policymakers implement inflation reduction policies, increase the level of economic activities, and promote remittances inflows since they are mostly directed to investment.

Keywords: Remittances, imports, ARDL, Jordan, cointegration

Introduction

According to the geographical distribution of Jordanian imports, it is clear that China, Saudi Arabia, the United States of America, Germany, the United Arab Emirates, and Italy are the major market sources of imports, which constitute of about 46.6 percent of total imports in 2016 and around 46.7 percent in 2015 (CBJ, Annual Report, 2017, PP: 70). In terms of the share of imports by commodity in 2016, the share of crude materials and the intermediate goods make up 47.8% of total imports, while the share of consumer goods was about 34.6% and the share of capital was 16%. Hence, as these imports are very vital for economic growth, it is crucial to analyze the determinants of the import demand function in Jordan; moreover, the analysis

is crucial for policymakers in many areas, especially with regards to trade deficit (Yi-Hsien, 2012).

The objective of this study is to estimate the import demand function for Jordan by using the most modern estimation methods as well as recent data. Analyzing the import demand function is vital to any country, especially in terms of trade balance status. Among many factors affecting imports is the flow of workers' remittances to their home countries. The concern with this factor stems from its impact on the consumption of durable and non-durable imported goods. This effect is reflected in the trade balance and later in the balance of payments of the home country. Yet, to the author's best knowledge, few existing research studies have examined the role of remittances in determining the import demand function in Jordan. For example, applying the ARDL and the bounds testing approach to cointegration over the period 1980–2015, Mugableh (2017) found that income has positive and significant impacts, while relative prices exert negative impacts on Jordan's imports; moreover, the long-run elasticities are greater than unity. Ziad (2014) estimated the price and income elasticities of the import demand function for Jordan over the period 1980–2012 by employing the Johansen cointegration approach. He found that income and prices elasticities of imports are greater than unity. Adel and Othman (2013) estimated the import demand function for Jordan over the period 1976–2008 using multiple linear regression models. The finding indicated a direct relation between imports and GDP, CPI, and REM, whereas it is negative with relative prices and exchange rate and, in addition, they are all inelastic. Al-Hazaimeh et al. (2011) found that GDP, investment, and exports are major determinants of the import demand function for Jordan. They employed the multiple regression method for the period 1976–2008. Kreishan (2007) estimated the import demand function for Jordan over the period 1972–2004 employing the Johansen cointegration approach. The finding indicated that the aggregate import volume is price and income inelastic. As for remittances, the results show they have a positive significant impact on aggregate imports and act as a source for financing imports. Majeed (2007) estimated the traditional import demand function for Jordan over the period 1980–2004 using the dynamic OLS method. His findings revealed that relative price and income elasticities were -0.55 and 0.84, respectively. Only Adel and Othman (2013) and Kreishan (2007) investigated the role of remittances in the import function.

The current paper contributes the following. First, it analyzes the influence of on Jordan's import demand function. Second, it uses one of the most recent modern estimation techniques, the ARDL approach, which avoids the problem of spurious regression, statistical problems, and estimation problems. Third, it utilizes up-to-date and longer time series data.

The rest of the paper is organized as follows. Section 2 presents a review of the literature on import demand function. Section 3 illustrates the econometric model specification and data. Section 4 analyzes the estimation results. Finally, Section 5 is the conclusion and suggests some policy implementation remarks.

2. Literature Review

The import demand function has been estimated by numerous applied research studies for both developed and developing countries. A large number of economic and non-economic variables were included in the model specification of the determinants of import demand function. The majority of the applied research estimates the traditional import demand function using economic activity, relative prices, real effective exchange rate, final consumption, FDI, foreign reserves, exports, and financial development among other macroeconomic variables. For example, Abdulsalam (2015) for Libya; Aldakhil and Nourah (2002) for Saudi Arabia, Al-Khulaifi (2013) for Qatar, N'guessan and Yue (2010) for Cote D'Ivoire, Khurram and Syed (2012) for Pakistan, Nazif and Jaehyuk (2015) for Turkey, Emmanuel and Mooya (2013) for Namibia, Ibrahim and Ahmed (2017) for Sudan, BigBen (2016) for Nigeria, Zhou and Dube (2011) for CIBs countries, Sulaiman and Saba (2016), and AbdulRashid and Tayyaba (2010) for Pakistan. All the above-mentioned studies use different estimations methods indicating a positive association between imports and income, and a negative association with relative prices and real effective exchange rate.

Following the scope of the current study, this section reviews the most recent studies to select the appropriate and relevant factors to estimate the import demand function for Jordan, whereas the emphasis is on the impact of remittances on imports.

Chantha et al. (2018) estimated the long-run and short-run import demand function for Cambodia over the period 1993–2015 by employing the ARDL model. Their empirical finding showed that inflation and the exchange rate have negative impacts, whereas exports have a positive impact. Using the standard OLS regression approach over the period 1988–2015 for Saudi Arabia, Abdullah Almounsor (2017) found that GDP, government expenditures, private consumption, and investment have positive and significant impacts, while the real effective exchange rate exerts a negative impact. Applying the ARDL model to data over the period 1973–2013 for Pakistan, Sulaiman and Saba (2016) found that consumption, exports, and investment have a positive significant impact; final consumption expenditure, and government consumption expenditure showed negative and significant impact. Ahmed et al. (2014) examined the short-run and long-run relationships between imported goods and workers' remittances in Pakistan over the period

2008–2012 employing Johansen cointegration and Granger causality. The finding showed a positive and significant impact of remittances on imports. However, Granger causality indicated a unidirectional causality runs from imports to remittances. M. Sayed (2014), applying the vector error correction (VECM) model to annual data over the period 1991–2011 for Egypt, found that remittances exert a positive and significant impact on imports as indicated by the unidirectional causality runs from remittances to imports. Dewan et al. (2013) applied the Johansen cointegration approach to monthly data over the period 2005–2011 for Bangladesh. The finding showed that remittances have an insignificant impact on imported goods, and a unidirectional causality runs from imports to remittances. Guna (2013), applying cointegration and a VECM model to monthly data over the period 2001–2011 for Nepal, found that remittances exert a significant positive impact on imported merchandised goods and services, where the unidirectional causality runs from remittances to imports. Karan and Sanjanya (2013), employing the OLS method and Granger causality test for Nepal over the period 2001–2009, found that remittances Granger-cause imports. Soana and Olta (2013) adapted a VECM model using monthly data over the period 1999–2011 for Albania. The finding showed that GDP and remittances exert positive impacts on imports, while real effective exchange rate and average tariffs have negative impacts. Yi-Hsien (2012) applied the ARDL approach for data over the period 1992–2011 for China. The finding indicated that GDP has a significant positive impact, whereas real effective exchange rate was negative and insignificant. Using the OLS method, Munir et al. (2007) estimated the import function for Pakistan. The finding showed that remittances and GDP have positive and significant impacts on imports, while real effective exchange rate was negative. Khair and Nazakat (2005) applied the OLS method using quarterly data over the period 1975–2004 in Pakistan. The findings indicated that remittances have a positive and significant impact on imports.

The surveyed literature pointed out the positive impact of remittances on aggregate imports and that the impact size differs among receiving countries depending on the estimation methods and data span. Table (1) summarizes the findings of the surveyed literature.

Table (1): Most Frequent Used Variables in the Literature Survey

Variable	Positive	Negative	Insignificant
GDP	Yi-Hsien (2012), Zhou and Dube (2011), Soana and Olta (2013), Munir et al. (2007), Soana and Olta (2013), AbdulRashid and Tayyaba (2010), Ibrahim and Ahmed (2017), Khurram and Syed (2012), Aldakhil and Nourah (2002)		BigBen (2016)
RP	Yi-Hsien (2012) Zhou and Dube Karan and Sanjanya (2013) Emmanuel and Mooya (2013) Khurram and Syed (2012)	Chantha et al. (2018), Nazif and Jaehyuk (2015), AbdulRashid and Tayyaba (2010), N'guessan and Yue (2010)	Dube. (2011), Ibrahim and Ahmed (2017), BigBen (2016)
REMIT	Soana and Olta (2013) Ahmed et al. (2014 Karan and Sanjanya (2013) Dewan et al. (2013) M. Sayed (2014) Gunna (2013) Khair and Nazakat (2005) Munir et al. (2007) Soana and Olta (2013)		BigBen (2016)
REER	Abdulah (2017) Munir et al. (2007) Soana and Olta (2013)	Soana and Olta (2013) Chantha et al. (2018) Yi-Hsien (2012)	Ibrahim and Ahmed (2017)
FDI			Chantha et al. (2018) NS Sulaiman and Saba (2016)
CONS	Karan and Sanjanya (2013) Sulaiman and Saba (2016) Emmanuel and Mooya (2013) Nazif and Jaehyuk. (2015) N'guessan and Yue 2010		Chantha et al. (2018)
INVEST- MENT	Karan and Sanjanya (2013) Sulaiman and Saba (2016) Emmanuel and Mooya (2013) Nazif and Jaehyuk. (2015) N'guessan and Yue 2010		
EXPORT S	Sulaiman and Saba (2016) Nazif and Jaehyuk (2015) N'guessan, and Yue. 2010		Emmanuel and Mooya (2013) (-) Al-Khulaifi. (2013)
INFLATI ON	Aldakhil and Nourah (2002)		

3. Methodology: Data and Model Specification

This section addresses the econometric methodology and the data sources adapted in the current study to estimate the import demand function in Jordan. Moreover, it illustrates the model specification in terms of the variables to be included in the model.

3.1 Model Specification

Chantha et al (2018) indicated that the traditional import demand function is based on the imperfect substitution theory, which focused on the role of the importing country's income, the price the imported goods, and the import substitute goods. The current study utilizes the previous reviewed literature which shows different forms of the import demand function based on single-country, groups-countries, and various econometric approaches to estimate the import demand function to choose the relevant variables relevant to Jordan's economy case. Accordingly, the functional form of the import demand function in Jordan is as follows:

$$IM = f(Y, CPI, IPI, REM, FDI, GFCF) \quad (1)$$

Where IM is the import demand; Y is the real gross domestic product measured at constant prices (\$2005=100); REM is the volume of formal remittances; CPI is the consumer price index (2005=100) proxy for the inflation rate; IPI is the import price index; GFCF is gross fixed capital formation proxy for investment; and FDI is the stock of foreign direct investment. It is expected that the real GDP to exert positive impact on imports, since the increase in the real GDP stimulates private consumption of imports. As for the rate of inflation, the model expects a positive impact on imports; as domestic inflation rate increase, people shift to imports which are cheaper. Remittances are expected to have positive impact on imports. Remittances can be used either for consumption or investment activities, which increases the demand for goods including imported ones. The import price index is expected to have negative impact; while GFCF is expected to exert positive impact. FDI can have negative or positive impact on imports. The long-run import demand function for Jordan in is expressed in logarithmic form.

3.2 Data Description

The required data for the estimation process were obtained from various sources, the UNTCAD, the Central Bank of Jordan publications, and the World Development Indicators (WDI).

3.3 Econometric Analysis: ARDL bounds testing

The objective of the current study is to estimate the long-run and short-run relationships between the variables of the import demand function for

Jordan over the period 1975–2016. There is numerous applied works investigating the long-run relationship between import demand and suggested determinants, as mentioned in literature review earlier. Specifically for Jordan, Mugableh (2017), Ziad (2014), Adel and Othman (2013), Al-Hazaimeh et al. (2011), Kreishan (2007), Majeed (2007) investigated the import demand function. However, only Adel and Othman (2013) and Kreishan (2007) included remittances in the model.

The study employs one of the most widely used econometric methods in time-series analysis, the autoregressive distributed lagged (ARDL) model bounds testing approach to cointegration introduced by Pesaran, et al. (2001) to estimate the long-run and short-run relationships between Jordan's aggregate import and a set of explanatory variables. The analysis involves examining the degree of integration of the series via the unit root test, the cointegration test to examine the existence of long-run equilibrium relationships, and the Granger causality test within a VECM framework. There are many advantages for adapting such approaches over other procedures proposed by Johansen (1990, 1991) and Engle (1987). First, it is suitable irrespective of the order of integration of the variables; either I(0) or I(1), as long as it is not I(2); therefore, this would avoid the stationarity problems (Zhou and Dube, 2011). Second, in the case of using small samples, the approach is more appropriate than other cointegration approaches.

Generally, the first step is to test for the stationarity properties of all variables before proceeding with the ARDL bounds testing to ensure that all time series are either I(0) or I(1) but not I(2). Therefore, the ARDL bounds testing approach is employed to estimate equation (2) using OLS to test for the presence of a long-run equilibrium relationship among the variables

$$\begin{aligned} \Delta IM = & \alpha_0 + \sum_{i=1}^n \alpha_{1i} \Delta IM_{t-1} \\ & + \sum_{j=0}^s \beta_{2i} \Delta Y_{t-i} \\ & + \sum_{j=0}^p \beta_{3i} \Delta CPI_{t-j} \\ & + \sum_{j=0}^p \beta_{4i} \Delta REM_{t-j} + \sum_{j=0}^p \beta_{5i} \Delta IPI_{t-j} + \sum_{j=0}^p \beta_{6i} \Delta GFCF_{t-j} \\ & + \sum_{j=0}^p \beta_{7i} \Delta FDI_{t-j} + \delta_1 IM_{t-1} + \delta_2 Y_{t-1} + \delta_3 CPI_{t-1} \\ & + \delta_4 REM_{t-1} + \delta_5 IPI_{t-1} + \delta_6 GFCF_{t-1} + \delta_7 FDI_{t-1} + \varepsilon_t \quad (2) \end{aligned}$$

Where Δ is the first different operator; α_0 is the intercept; p is the maximum lag length; i is the number of lags; $\beta(i, p = 1, \dots, 7)$ indicates the short run coefficients; $\delta(i, p = 1, \dots, 7)$ shows the long-run coefficients; and (ε_t) is the white noise error term.

The hypothesis to test the presence of long-run relationship among the model variables is set as following:

$$H_0: \delta_1 = \delta_2 = \delta_3 = \dots = \delta_7 = 0$$

$$H_1: \delta_1 \neq \delta_2 \neq \delta_3 \neq \dots \neq \delta_7 \neq 0.$$

The null hypothesis was tested by performing an F-test for the joint significance of the coefficients of the lagged levels of the variables against the critical values introduced by Narayan (2005). If the F-statistic is greater than the upper bound critical value, then the null hypothesis of no cointegration can be rejected.. Conversely, if the F-statistic is less than the lower bound critical value, then we cannot reject the null hypothesis of no cointegration. However,, when the f-statistic is within the two bounds, then the test is inconclusive. The optimal lag-length of the ARDL model is selected using the Akaike information criteria (AIC).

If there is evidence on the existence of long-run relationship between import demand and its determinants, the next step is to examine the short-run dynamic coefficients and the ECT_{t-1} coefficient. The ECT_{t-1} coefficient measures the speed of adjustment from short-run towards long-run equilibrium among variables (Chantha et al., 2018). Then, the short-run relationship for Jordan’s import demand can be expressed as following in equation (3):

$$\begin{aligned} \Delta IM = \alpha_0 + \sum_{i=1}^n \alpha_{1i} \Delta IM_{t-1} + \sum_{j=0}^p \alpha_{2i} \Delta Y_{t-j} \\ + \sum_{j=0}^s \alpha_{3i} \Delta CPI_{t-i} \\ + \sum_{j=0}^p \alpha_{4i} \Delta IPI_{t-j} \\ + \sum_{j=0}^P \alpha_{5i} \Delta REM_{t-j} + \sum_{j=0}^P \alpha_{6i} \Delta FDI_{t-j} \\ + \sum_{j=0}^P \alpha_{7i} \Delta GFCF_{t-j} + \lambda_1 ECT_{t-1} + \varepsilon_t \end{aligned} \quad (3)$$

Where Δ is the first different operator; α_0 is the constant; p is the maximum lag length; i is the number of lags; $\alpha(J, i = 1, \dots, 7)$ indicates the

short run coefficients; and λ is the coefficient of the lagged error term, ECT_{t-1} , and it should be negative.

3.4 Diagnostic stability tests

Diagnostic statistics are adapted to ensure the validity of the estimation results. For that reason, the Lagrange multiplier (LM) test of residual serial correlation, Ramsey's RESET test for functional form misspecification, normality test, and White's test for heteroscedasticity are employed.. To test for structural changes, the stability of the estimated short-run and long-run coefficients was examined by employing the cumulative sum of recursive residuals (CUSUM) and cumulative sum of squares of recursive residuals (CUSUMSQ) tests proposed by Brown et al. (1975).

4. Estimation results and discussion

4.1. Unit root test (Stationarity test)

According to Pesaran et al. (2001), the first step before proceeding with the ARDL bounds testing is the determination of the order of integration to ensure that the time series are either I(0) or I(1) but not I(2). Table (2) reports the results of the augmented Dickey-Fuller (1979) unit roots test. The ADF test results indicate that all variables are stationary at their first-differenced integrated of order one, I(1).

Table 2: Results of unit roots tests

Variable	ADF results (level)			ADF results (differenced)		
	Constant	Constant & Trend	None	Constant	Constant & Trend	None
LIM	-0.3 (0)	-2.28(1)	1.56(6)	-4.26(0)	-4.3(0)	-4.12(0)
IPI	0.14(0)	-2.26(3)	1.69(0)	-4.73(0)	-4.86(0)	-1.96(2)
LFDI	-1.37(0)	-2.02(3)	-0.8(0)	-5.13(0)	-5.028(0)	-5.19(0)
LY	-1.49(1)	-1.83((1)	2.56(1)	-2.89(6)	-3.97(0)	-2.01(0)
CPI	0.89(0)	-2.45(2)	5.74(6)	-4.45(0)	-4.53(0)	-1.73(1)
LRMIT	-1.24(0)	-3.92(4)	2.97(7)	-3.87(6)	-3.89(6)	-4.9(0)
GFCF	-3.69(0)	-3.92(6)	-1.66(0)	-5.25(9)	-5.43(0)	-5.48(9)

(*), (**), (***) significant at 1%, 5%, and 10% respectively, lags numbers are in Parenthesis

Adapting the ADF results moves the analysis to the next step, which is testing for the existence of long-run equilibrium relationship among variables.

4.2 Diagnostic and stability tests

The statistical tests of the ARDL (2, 3, 2, 0, 3, 3, 1) estimation results are necessary to ensure that the model is free of statistical problems. Diagnostic tests for serial correlation, functional form, normality, and heteroscedasticity have been conducted and the results are presented in Table (4). The LM Serial correlation test, in addition to DW test (2.16) indicates that

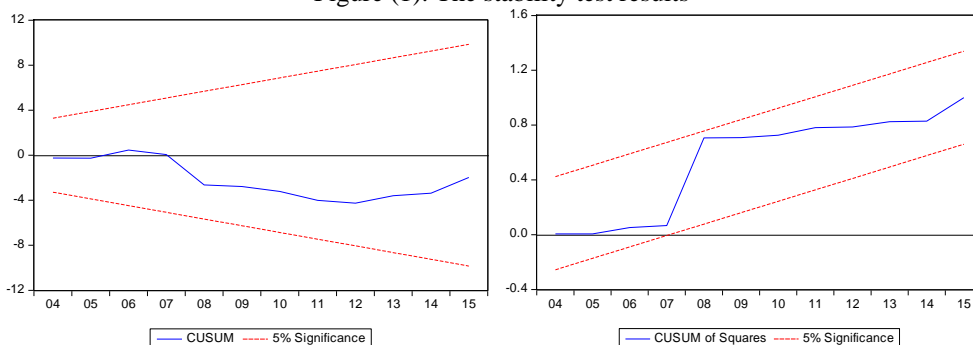
the model does not suffer from the problem as it is shown by the insignificant value of LM F-statistic test (1.15), therefore, one may accept the hypothesis of no serial correlation. Additionally, the Breusch-Pagan-Godfrey heteroscedasticity test of the insignificant F-statistics test (0.42) indicates the absence of this problem; and Ramsey's RESET of Functional form test is insignificant. Finally, Jaque-Bera's normality test statistic is insignificant (0.809), revealing that error terms are normally distributed. Based on these test results, the model is free of econometric problems; and the estimation results are valid for meaningful interpretation.

Table (4): Diagnostic tests

Test	F-statistics	P-Value.
Serial Correlation	2.8	0.108
Functional Form	066	0.59
Normality	0.70	0.702
heteroscedasticity	0.42	0.6

The study applies the cumulative sum of recursive residuals (CUSUM) and the CUSUM of the square (CUSUMSQ) to ensure the parameters' stability. Figure (1) shows that the plots of the CUSUM and CUSUMSQ statistic fall with the critical bands of the 5 percent confidence interval of parameter stability. Therefore, the results confirm the existence of the stability in the parameters over the study period.

Figure (1): The stability test results



4.3 Cointegration results

The next step is to examine the existence of the long-run relationships between model variables by applying the bounds testing approach to cointegration. As Table (5) shows, the calculated F-statistics of 4.02 is greater than the upper bound critical value of 4.01 provided by Pesaran (2001) at the 5 percent level, and hence, one can reject the null hypothesis of no cointegration. The result from bounds testing approach to cointegration provides evidence on the long-run relationship between the variables.

Table (5): Bound Test: (LIMPORTS/Y, IPI, CPI, GFCF, LFDI)		
F-statistic:	4.02*	
Critical Value Bounds		
	I(0) Bound	I(1) Bound
10%	2.45	3.52
5%*	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

4.4 Short-run estimation results

Based on the cointegration results, we can estimate the VECM model for the cointegrated equation. Table (6) contains the short-run estimation results of the ARDL (2, 3, 2, 0, 3, 3, 1) model. It indicates that the majority of the first-differenced of all variables as well as their lagged periods are significant in the short-run. These results indicate that these variables have a short-run effect on the import demand function in Jordan.

Table (6): Short-run Cointegrating Results for Selected Model: ARDL(2, 3, 2, 0, 3, 3, 1)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOG(IM(-1))	0.412124	0.237354	1.736326	0.1081
DLOG(Y)	3.066670	0.677223	4.528300	0.0007
DLOG(Y(-1))	1.953987	0.913596	2.138786	0.0537
DLOG(Y(-2))	-1.915532	0.302432	-6.333766	0.0000
DLOG(REM)	0.227843	0.143270	1.590309	0.1378
DLOG(REM (-1))	0.295041	0.174395	1.691798	0.1165
D(CPI)	0.012202	0.003128	3.900847	0.0021
D(IPI)	0.002770	0.000864	3.205518	0.0076
D(IPI(-1))	0.000813	0.000900	0.903085	0.3843
D(IPI(-2))	0.001459	0.000314	4.650469	0.0006
DLOG(GFCF)	0.236315	0.159154	1.484821	0.1634
DLOG(GFCF(-1))	-0.434197	0.258588	-1.679104	0.1190
DLOG(GFCF(-2))	0.453068	0.152968	2.961846	0.0119
DLOG(FDI)	-0.011923	0.016648	-0.716191	0.4876
CointEq(-1)	-1.557629	0.226066	-6.890148	0.0000
CointEq = LOG(IMPORTS) - (1.4024*LOG(Y) + 0.2186*LOG(REMIT) +				
0.0078*CPI -0.0006*IPI + 0.4968*LOG(GFCF) -0.0337*LOG(FDI) -8.2727)				

The important feature of these results is the error correction term which turned out to be negative and significant at the 1% level. This result provides evidence of the presence of a long-run causality runs from explanatory variables to (IM). The coefficient of the error correction term is (-1.56) indicating that 1.56% of short-run shock is corrected in each year, and it takes less than a year to restore long-run equilibrium.

Table 7 reports the long-run estimation results of ARDL (2, 3, 2, 0, 3, 3, 1). The table shows that the economic activity (GDP) is positive and statistically significant at the 1 percent level with elasticity equal to 1.4%. The result indicates that a 1% increase in the GDP increases imports by 1.4%. The result of economic growth or economics activity is in line with Yi-Hsien (2012) for China, Zhou and Dube (2011) for CIBs, Soana and Olta (2013) for Albania, Munir et al. (2007) for Pakistan, Abdul Rashid and Tayyaba (2010) for Pakistan, Ibrahim and Ahmed (2017) for Sudan, Khurram and Syed (2012) for Pakistan, and Aldakhil and Nourah (2002) for Saudi Arabia who found a significant positive impact of GDP (income) on the import demand function. On the other hand, in the Nigerian case, BigBen (2016) found an insignificant impact of GDP. As for Jordan, Mugableh (2017), Ziad (2014), Adel and Othman (2013), and Al-Hazaimah (2011) found a direct relation between GDP and imports. The results indicated that remittances have a significant positive impact on imports, where the elasticity of imports with respect to remittances is inelastic. The elasticity is 0.218, hence, an increase of remittances by 1% leads to an increase in imports by 0.218%. The remittances result is in line with Soana and Olta (2013) for Albania, Ahmed et al. (2014) for Pakistan, Karan and Sanjanya (2013) and Dewan et al. (2013) for Bangladesh, M. Sayed (2014) for Egypt, Gunna (2013) for Nepal, Khair and Nazakat (2005) and Munir et al. (2007) for Pakistan, Adel and Othman (2013) and Kreishan (2007) for Jordan, who all found a significant positive impact; whereas BigBen (2016) found insignificant impact of remittances on imports for Nigeria. The price level exerts a very low positive and significant impact and is inelastic as well. An increase in the price index by 1% leads to a 0.007% increase in imports. The price index result is in line with Aldakhil and Nourah (2002). The import price index has a negative but insignificant impact on imports; in addition, the influence is very weak (-0.0006). Therefore, a 1% increase in the imports price index leads to a 0.0006% decrease in imports. The import price index result is in line with Aldakhil and Nourah (2002) for Saudi Arabia. The investment level measured as the gross fixed capital formation (GFCF) has a significant positive impact on imports, and it is inelastic. A 1% increase in GFCF increases imports by a 0.49%. This result is in line with Karan and Sanjanya (2013) for Nepal, Sulaiman and Saba (2016) for Pakistan, Emmanuel and Mooya (2013) for Namibia, Nazif and Jaehyuk (2015) for Turkey, and N'guessan and Yue (2010) for Cote D'Ivoire, whose results supported the significant positive impact of investment on imports.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(Y)	1.402447	0.177544	7.899148	0.0000
LOG(REM)	0.218553	0.090634	2.411372	0.0328
CPI	0.007833	0.001601	4.893540	0.0004
IPI	-0.000649	0.000490	-1.325146	0.2098
LOG(GFCF)	0.496825	0.083142	5.975650	0.0001
LOG(FDI)	-0.033711	0.012871	-2.619108	0.0224
C	-8.272741	1.475380	-5.607195	0.0001

Finally, the foreign direct investment (FDI) has a significant negative impact on imports as well as inelastic. A 1% increase in FDI decreases imports by 0.034%. This result contradicts the insignificant impact found by Chantha et al. (2018) for Cambodia and Sulaiman and Saba (2016) for Pakistan.

5. Conclusion and Policy Implication

The present study is an attempt to examine the impact of remittances along with other macroeconomic variables on the imports of Jordan over the period 1976–2016. It adapted the most recent estimation technique, the autoregressive distributed lagged (ARDL) model, which has many advantages over other techniques. The estimation results support the existence of the long-run equilibrium relationship between them. The ECM coefficient is negative and significant indicating that the causality runs from the explanatory variables to imports and, in addition, the magnitude of the coefficient (1.56) shows that it takes less than one year to restore the long-run equilibrium after a short-run shock. The long-run results show a significant positive influence of remittances, level of income (economic growth), investment, and price level on imports; meanwhile, the import price index and FDI have negative and significant impacts on imports. In addition, all variables are inelastic except remittances. This pointed out the important role of remittances on stimulating imports, and the ultimate effect depends on the type of imported goods—durable (capital) or non-durable (consumption). The current study suggests some policy recommendations that are expected to help policymakers adapt some policy measures to reduce the trade balance consequences. First, reducing the price level would help reduce imports and increase exports, and hence, improve trade balance. Second, increasing the level of economic activities and economic growth would increase capital goods for investment.

The literature on the import demand function contains a considerable number of macroeconomic variables that are expected to influence the import demand function. The present study utilized selected macroeconomic variables that are thought to be crucial to import demand function. Therefore, the study recommends that future research on the import demand function by

investigating new variables, different estimation method, and data to compare the present results

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Transformational Leadership Practices in Curriculum Implementation (Environmental Education) in Secondary Schools in Siaya County, Kenya

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Abstract

Leadership practices promote accomplishment of goals in organizations. This paper focuses on the application of transformational leadership practices: Idealized influence, Inspirational motivation, Intellectual stimulation and Individualized consideration in curriculum implementation, Environmental Education (EE). The sample consisted of 183 teachers randomly selected from 30 secondary schools in Siaya County. A questionnaire was used in a descriptive survey research. The findings using the selected indicators were that head teachers: strived towards the collective goal of fulfilling a vision and were positive role models; had trust of teachers' ability; made decisions all the time; encouraged students to work hard; and organized meetings with other schools to achieve subject objectives.

Keywords: Leadership practices, curriculum implementation, Environmental Education, Kenya

1.0 Introduction

For any educational programme to succeed, there must be effective leadership and instruction. The instructional leadership functions include setting academic standards, providing incentives for learning, and providing incentives to teachers. The head teachers promote teachers' sense of efficacy, sense of community, professional interest and development, and instructional improvement. Good education leaders keep students' learning at the centre of their work no matter what task or activity they undertake (Association for Supervision and Curriculum Development (ASCD), 2002). Instructional Leadership and curriculum development is the core function of the head teacher (Hallinger & Murphy, 1986; Edmonds, 1979). Head teachers determine how to implement standards and decide on what to emphasize and what to omit (Wolf, Borko, Elliot, & McIver, 2000).

Studies have been carried out to investigate leadership behaviour that enhances academic achievement and curriculum implementation. In the 1990s, leaders were expected to bring about transformational leadership which was seen as a superior mode of leading. This article presents transformational leadership theory as a basis for effective implementation of curriculum (Environmental Education, EE) in secondary schools. Although EE is infused in other subjects in secondary school curriculum, it is important that the essence of keeping a healthy environment for sustainable development is upheld (KIE, 2002).

1.1 Transformational Leadership

Transformational Leadership Theory refers to a process of change in individuals. The term was first used by Downton in 1973 and later advanced by Burns in 1978 as a leadership approach. According to transformational leadership theory, the leader and followers engage in a mutual process of raising one another to higher levels of morality and motivation (Burns, 1978). By raising appeal to higher ideals transformational leadership theory, transformational leadership enables the leaders and followers to focus on intangible qualities such as vision, shared values and ideas which provide common ground for the change process. Transformational leadership is based on personal values, beliefs, and qualities of the leader which include charisma. According to Bass (1985), followers are influenced to trust, admire, and respect the leader.

1.2 Weaknesses of Transformational Leadership Theory

Unlike alternative leadership practices, the use of charisma in educational institutions may evoke strong emotions causing concern about moral and ethical issues of the leader (Bass, 1985). Dependence on the leader's abilities as the yardstick by which followers measure their own performance is deceptive and has a high potential of being abused or causing leadership derailment (Daft & Marcic, 2006). Transformational leadership can be undemocratic and elitist, but Bass and Avolio (1993) argued that transformational leaders can be participative. Transformational leadership is interpreted as a personality trait and fails to occur along a continuum as it covers many parameters (Northouse, 1997). This implies that it is dependent on one individual, the principal of the school.

1.3 Strengths of Transformational Leadership Theory

Transformational leadership model grounded on moral foundations would result in idealised influence, inspirational motivation, intellectual stimulation, and individualised consideration required in an effective instructional leader. Daft (2008) contends that transformational leadership brings about significant

change in both followers and the organisation. The followers are inspired through increasing awareness of task, focusing on team goals, and activating the higher order needs. Transformational leadership in a school set-up develops followers such as teachers into leaders, elevates followers' concerns from lower level needs to higher needs, inspires followers to go beyond their self interest for the good of the community, and points a vision of a desired future state and communicates change well.

Transformational leadership is widely researched and conforms to society's belief that leaders should provide a vision. Transformational leadership focuses attention on needs, values, and growth of followers; hence, it values the commitment and capacities of organizational members (Leithwood, Jantzi, & Steinbach, 2000). Transformational leadership shows a marked departure from a top-down management approach, including deeper targets for more sustainable change and a shift from managerial or transactional relationships with the staff (Hallinger, 2003). This approach realigns managers to involve employees in decision making and creating partners which promotes positive attitudes and superior desires leading to acceptance of leaders and lowering of absenteeism. The advantages of transformational leadership out-weigh the disadvantages and are associated with effective instructional leaders. Daft and Marcic (2006) and Northouse (1997) opined that transformational leadership is the basis for modern learning organisations in both business and schools.

2 Application of Theory

2.1 Application of Transformational Leadership Theory to Instructional Leadership

As an instructional leader, the head teacher is the pivotal point within the school who affects the quality of individual teacher instruction, the height of student achievement, and the degree of efficiency in school functioning (Silins, Mulford & Zarins, 2002; Leithwood & Jantzi, 1999; 2000; Hallinger & Murphy, 1986; Edmonds, 1979). Darling-Hammond (2003) stated that transformational leadership style helps to develop a positive school culture in which teachers become interested in the interactions at their schools as they participate all the time.

The head teacher represents a master teacher who primarily increases the level of student achievement. As the immediate supervisor, the head teacher ensures punctuality and effective performance of duty by fostering selection, development, use, and evaluation of appropriate Environmental Education instructional materials and processes. According to Berends, Bodilly, and Nattaraj (2002), effective and supportive principal leaders were most likely to increase and deepen the implementation of school improvement initiatives.

The instructional leader needs to be good at traditional management functions such as planning and budgeting, and to focus on the impersonal aspects of job performance (Okumbe, 2007; Everard, Morris, & Wilson, 2004). Teachers and support staff should receive rewards for enhancing environment, whereas the leader benefits from meeting Environmental Education tasks. Though researchers Edmonds (1979) and Flath (1989) stressed the importance of the instructional leadership responsibilities of the head teacher, the consensus in the literature indicate that it is seldom practiced (Flath, 1989). Stronge (1988) found that 62.2 percent of the elementary head teacher's time is focused on school management issues, whereas only 6.2 percent of their time is focused on programme issues. Wafula (2007) found that teacher's records were checked by some Heads of Department.

Flath (1989.20) categorises instructional leadership activities as goal emphasis, coordination and organization, power and discretionary decision-making, and human relations which apply to Environmental Education. The leader is sensitive to working with teachers, and members of the public (Baskett & Miklos, 1992). According to King (2002), head teachers would assist Environmental Education implementation by hosting meetings for teachers to discuss any gaps they may find in Environmental Education teaching and learning. The forum for teachers and administrators help to identify problems with the technology of education as a foundation for considering how to move forward and how to deal with the gaps identified.

The head teachers invite outside experts to provide teachers an overview of the research about Environmental Education teaching and learning so that they can contextualize the situation in their school within a larger framework. This allows teachers to come to grips with Environmental Education challenges confronting them in a way that they can better deal with these challenges. The head teachers assist teachers to focus more intently on their work by organizing peer visits as well as data gathering. In this way, teachers develop a data base for benchmarking the current Environmental Education situation and to assess progress or lack thereof.

King (2002) stated that collaboration of the teachers, head teacher, and administrators build leadership density in schools and provide the conditions which facilitate the development of teachers as leaders in the areas of curriculum, learning, and teaching. Barth (2001) notes that success in these endeavour positions teachers to make decisions in many areas that were once reserved to the head teacher. These include: choosing textbooks and instructional materials; shaping the curriculum; setting standards for student behaviour; designing professional development and in-service programmes; and deciding school budgets. According to Smylie and Conyers (1991), teachers are instructional experts and the head teacher should encourage the development of their instructional leadership to improve instruction quality.

Checkley (2000) asserted that by promoting a forum for professional discourse, head teachers as instructional leaders construct a school culture through which teachers redefine curriculum, teaching and learning, translating it into new classroom practices as they build relationships characterized by mutual trust, risk taking, and experimentation. Hence, this all takes place in a supportive and professionally challenging environment.

2.2 Application of Transformational Leadership Theory to Instruction of EE

Transformational Leadership Theory is applied to instructional leadership in the implementation of EE because transformational leaders bring change in attitudes, skills, and knowledge among teachers and students for environment protection. Transformational leadership is a conscious leadership regardless of the situation. Its goal is to change institutions and not simply to have things done. Transformational leaders have ways to make followers trust their performing behaviours that contribute to achievement. Due to leaders' charisma, their vision of how good the environment could be if protected is well communicated through their own excitement that induces followers to support their vision. However, they have high levels of self confidence and esteem which cause followers to respect and admire them (Daft & Marcic, 2006). The leader also widens the needs of the followers and supports them to achieve higher needs (Antonakis, Cianciolo, & Sternberg, 2004). The students and teachers are likely to view environment issues differently, making them feel some degree of responsibility to solve problems, for example, picking and placing litter in a correct place. According to Fullan (1991), head teachers influence the extent of implementation by playing a direct active role than leaving the implementation process to individual teachers. Although they may not be experts in the area, they provide leadership by familiarising with the general nature of the 'subject' and through working with staff to become effective.

Ross and Gray (2006) found that transformational leadership behavior is positively correlated with high academic performance in schools. The high performance was due to the head teachers' building of teachers' professional commitments and belief in their collective capacity, and motivating them to go beyond self-interest and embrace organizational goals. Transformational leadership, therefore, influences teachers' commitment to school's vision, professional community, school norms of collegiality, collaboration, and team work. It implies that such leaders have the tendency to inspire teachers to think beyond their own interests and focus on organizational and national objectives.

According to Okoth (2008), the relationship between Transformational Leadership practices, Teacher Commitment and School Outcomes can be

conceptualized as an Input-Process-Output (IPO) Model based on Bass theory of 1985 as follows: **Input** is the head teacher's leadership practices. The first is the idealized influence, where the leader acts as a role model; the second is the inspirational motivation, where the leader usually evokes enthusiasm and a team spirit of shared purpose; the third being intellectual stimulation which challenges all to explore options and innovative approaches; and finally the individualized stimulation which lends value to all individuals within the organization (Bass, 1998).

Process is the instructional role of teachers who are encouraged to be enthusiastic, to exhibit awareness of task & need for personal growth; and commitment of teachers to school system over personal interest. According to Bass (1985), the leader induces followers to support their vision and put aside self interest for the sake of the organisation. It means head teachers take responsibility for helping to solve problems as they grow in the process. The leader's energetic, enthusiastic, and oral communication helps people to understand real life issues. It is assumed that the head teacher is a professionally qualified teacher with the pedagogic skills to implement Environmental Education. Bass (1985), Hallinger and Murphy (1986), and Leithwood and Jantzi (2000) provided variables used; for example, the head teacher projects him/herself as a role model, and strives towards the collective goal of fulfilling a vision.

Output are the outcomes which include positive EE attitudes, EE knowledge and skills, institution enthusiastic about EE issues, and positive behavior.

Over the years, work on transformational leadership has focused on other variables. According to Kouzes and Posner (1989; 2007), five common practices of transformational leadership are: model the way, which involves clarifying values and setting the example; inspire a shared vision, which involves envisioning the future and enlisting others; challenge the process, which involves searching for opportunities, experimenting, and taking risks. Through these, teachers are stimulated to achieve more for themselves and their students as they aspire higher levels of performance. In 1996, Leithwood came up with six specific principals' behaviour which are: Identifying and articulating a vision, providing an appropriate model, fostering the acceptance of group goals, providing individualized support, providing intellectual stimulation, and holding high performance expectations (Jantzi & Leithwood, 1996). Therefore, the objectives based on Bass Transformational Leadership Model are:

- i. To establish how Charismatic/ idealized influence affects principals' curriculum implementation (EE) in secondary schools;
- ii. To determine influence of Inspirational motivation on principals' curriculum implementation (EE) in secondary schools;

- iii. To establish how Intellectual stimulation influence principals' curriculum implementation (EE) in secondary schools;
- iv. To determine the extent to which Individualized consideration of principals affect curriculum implementation (EE) in secondary schools.

3. Methodology

A descriptive survey design was used. The sample consisted of six boys, six girls, and 18 mixed schools obtained by stratified random sampling. A total of 183 teachers were obtained by random sampling from the selected 30 schools. (Kothari, 2008; Mugenda, 2008). The Teachers' questionnaire was administered in person after obtaining a permit from National Council of Sciences, Technology and Innovation (NACOSTI). Validation was done by pre-testing the instruments in a pilot study and reviewed by experts in educational administration. Reliability was determined using test-retest method resulting in $r = 0.8$.

Indicators of Leadership Practices

Idealized Influence: Strive towards the collective goal of fulfilling a vision and role model;

Inspirational Motivation: Trust of teachers' ability to deal with obstacles;

Intellectual Stimulation: Make decision all the time; and

Individualized Consideration: Encourage students to work hard, be present in school, and organize meetings with other schools.

4. Findings and Discussions

4.1 Idealized Influence

i. Leaders are expected to identify and articulate a vision, and to foster the acceptance of group goals. The teachers were asked to rate the head teachers' efforts towards the collective goal of fulfilling a vision. The results show that majority of the teachers agreed (strongly agree 43.2 percent and agree 38.4 percent), while those with no opinion was 10.9 percent. Those who disagreed that heads strive to achieve goals were at 3.8 percent, and the least 2.7 percent strongly disagree. As leaders, head teachers strive towards the collective goal of fulfilling a vision.

ii. Positive role modelling has been cited as the best method to influence others by practising what they see. Authentic leaders build their practice outward from their core commitment, making them role models for enhancing environmental education. Teachers rated how they perceived their heads as role models. The results show that most of the teachers 45.3 percent strongly agree and 39 percent agree that the head teachers acted as role models.

However, 6.0 percent teachers strongly disagree and 3.8 percent disagree that head teachers act as role models, while 6.0 percent had no opinion.

4.2 Inspirational motivation

Leaders often inspire those under them by being enthusiastic about what they do. Teachers can be motivated through attending seminars which empowers them in various ways. They may acquire specific skills which would inspire them and develop positive attitudes. Teachers were asked to rate head teachers' belief that teachers could deal with obstacles they came across while implementing curriculum. The findings show that majority of the teachers 43.2 percent agreed, and 41 percent strongly agreed. The rest, 6.0 percent, disagreed and 3.8 percent strongly disagreed that head teachers believed in teachers' ability to deal with obstacles. Another 6.0 percent had no opinion.

4.3 Intellectual Stimulation

The transformative leadership practices made leaders to encourage workers to explore options and come up with innovative approaches to solve problems. This would make teachers to explore methods of teaching that would enhance retention of knowledge and application of skills learnt. It also helps in the decision making process whereby teachers makes use of best methods and resources while teaching. The teachers were asked about the ability of the head teacher to cope with decision making. The majority of teachers 52.5 percent agreed and 36.6 percent strongly agree. Thus, the data illustrates that majority of the head teachers are capable of making decisions regarding curriculum (Environmental Education), but there is room for improvement for 4.4 percent who disagree, 1.8 percent who strongly disagree, and 6 percent who had no opinion. Although the heads may not know the details of the syllabus, they still guide teachers as they consult subject experts (Fullan, 1991).

4.4 Individualized Consideration

Individual attention paid to workers makes them feel valued. The individualized consideration lends value to all individuals within the organization and is a source of job satisfaction. There are three items in this section: encourage students to work hard, discussing with teachers from other schools, and heads' presence in school.

i. The results on whether the head teachers encourage students to work hard in Environmental Education showed that most teachers agreed (36.1 percent strongly agreed and 32.2 percent agreed). Meanwhile, 8.2 percent disagreed, 4.9 percent strongly disagreed head teachers encourage their

students, and 18.6 percent had no opinion. The results suggest that head teachers encourage students to work hard but more needs to be done.

ii. Benchmarking is important as it makes people learn from others at the same level. Teachers were asked about head teachers organising meetings with other schools for Environmental Education. The results show that majority of teachers agree (44.8 percent strongly agree and 28.4 percent agree) that head teachers organise meetings with other schools. This could be in view of joint examinations previously done in the districts as well as sports. However, 9.8 percent teachers disagree and 7.7 percent strongly disagree that head teachers ever organise meetings with other schools, while 9.3 percent had no opinion. Kouzes and Posner (1989) and Checkly (2000) commended such meetings for the improvement of the working culture in the schools; enable others to act by fostering collaboration and strengthening others; encourage the heart by recognizing others' contributions and creating a spirit of community.

iii. The teachers were asked about the importance of the head teachers' presence in the school. The results showed the highest proportion of teachers: 36.1 percent said they agree, 31.7 percent strongly agree, 17.5 percent had no opinion, 9.8 percent disagree, and 4.9 percent strongly disagree. The results indicate 67.8 percent teachers perceive that the presence of the head teacher in school is important. Mbiti (2007) concurs that the head teacher's presence in school is significant.

5. Conclusion

Applying idealized influence, head teachers strive towards the collective goal of fulfilling a vision and acting as role models. Applying Inspirational motivation, head teachers trust teachers' ability to deal with obstacles in curriculum. Intellectual stimulation prompts the head teacher to make decisions even through the practice of consultation. For Individualized consideration, head teachers encourage students in person to work hard and they also organize meetings with other schools.

6. Implications and Recommendations

i. The Head teachers should be encouraged to use transformation leadership practices as they improve on curriculum implementation and management. The Teachers Service Commission (TSC) and Ministry of Education (MoE) should ensure that aspiring and practicing head teachers receive continuous training as a policy.

ii. Kenya Education Management Institute (KEMI) should design curriculum for leadership development for head teachers to apply transformational leadership practices. This is the institution mandated by MoE for teacher development.

iii. Leaders should strive towards the collective goal of fulfilling a vision so that they can personally be enthusiastic to accomplish objectives.

iii. Head teachers should develop positive attitudes about the teachers' abilities on curriculum instruction and decision making while they provide support.

iv. Head teachers should encourage teachers and students in person to work hard and benchmark with other schools.

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Supply Chain Management Control of Fish Canning Industry in Morocco

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Abstract

Management control is increasingly adapted to the changes taking place at inter-firm level of business exchanges. By taking the form of an inter-organizational control, the latter aims to reduce uncertainty, avoid opportunism and seek to make the most of an exchange relationship between two organizations. This article analyses some of the main studies dealing with inter-organizational control in the context of supply chain. We present literature review on this type of control, its typology and its approaches and theories.

Thanks to its marine biological heritage, Morocco is a world exporter of sea products. The fish preserve sector occupies an important place in the Moroccan economy with a large turnover. This paper presents an exploratory study of this sector where we try to explain the functioning within the canneries of the Souss Massa region in terms of logistic management, the management control function, the management of transport and costs and finally the performance management methods. Based on 12 interviews with managers of canneries in the region, the results of this exploratory study will form the basis on which we will base our main study.

Keywords: Inter-organizational management control, Inter-firm relationships, Supply chain, Canning fish industry.

Introduction:

Management control research has not yet taken into consideration new practices of inter-organizational cooperation. Several authors have emphasized the urgency of studying this field of research, which was the cause of publication of a number of works in this area. Previous research have focused on dyadic relationships that link two actors involved in an inter-organizational relationship without trying to approach management control in

a broader and multi-stakeholder inter-organizational context such as supply chains.

Management control as a classic theory focuses on the internal part of organizations. The management tools offered by management control system (cost management, planning, and performance control) are used vertically. However, many managers and researchers recognize the need to manage vertical as well as horizontal relationships, because organization's performance is influenced by what happens internally as well as externally. What poses a critical problem is to understand how to manage relationships with different actors and how to convince them knowing that they are not under the hierarchical obligation. We are talking about inter-organizational control. These external actors are supply chain partners.

The objective of this study is to describe logistic activity operation, the scope of the responsibilities delegated to the logistic manager, the cost management, as well as the performance management methods in fish canneries in Morocco. And in order to study inter-organizational control and its contribution to the management of the supply chain in the Moroccan context, we must first explore the sector studied or rather the state of its supply chain. And that is the most important point of this qualitative study.

Research problem

Over the years, many researchers in marketing and social sciences have shown the role of relationships in organizations (Morgan and Hunt 1994, Ricard and Perrien 1996, Ganesan 1994, Nogatchewsky 2004, Nogatchewsky and Donada, 2005).

Hopwood 1996 emphasized the necessity of investing this field of research. The author has strongly expressed the claim that control research has probably not yet taken the measure of new practices of inter-firm cooperation, according to the researcher planning, budgeting, and control processes move from one organization to other organizations in order to create greater awareness of the interdependence of actions and the role that joint action can play in the success of companies, then more explicit attention has been paid to the coordination of actions within organization networks which has resulted in creating concerns about quality, cost, and delivery time in supply chain management.

Several management control tools have been introduced to integrate the inter-organizational aspect to the function and to be able to answer the requirements posed by the management of inter-firm relations. Among these tools, we find the inter-firm prospective scorecard (Kaplan and Norton, 2006), strategic value chain cost analysis (Shank, 1989, Govindarajan and Shank, 1992) and open book accounting (Kajüter and Kulmala, 2005).

Our article presents an exploratory study which is part of a research work, where we are interested in management control mechanisms in the inter-organizational management of a supply chain, is there a control exerted on partners? Or supply chain actors of fish canning field? If so what are the types of control that exist? Is there a relationship between management control and logistics within the canned fish companies in the Souss Massa region? If yes, what is the type of this relationship? How do these two functions work together?

The research question we are trying to answer is therefore: To what extent does inter-organizational management control affect supply chain performance?

This study aims to explore the sector in question (canneries in Souss Massa region), its organization and its management, in order to answer the questions above in our future main research. This paper is composed of two parts, a theoretical part where we will discuss the subject of the inter-organizational management control, and approaches on which it relies, furthermore the problems posed to the stakeholders. A second part presents a qualitative exploratory and descriptive study, carried out using the semi-directive interview.

Literature revue of inter-organizational management control Supply chain management

The concept of supply chain is defined as “the network of organizations that are involved, through upstream and downstream linkages, in different processes and activities that produce value in the form of products and services in the hands of the ultimate consumer” (Christopher, 2005, p.13). According to Simchi-Levi et al. (2009) Supply Chain Management represents the set of methods used to effectively integrate suppliers, producers, warehouses and stores so that products are manufactured and distributed at the right quantities, in the right place and at the right time for the purpose of minimizing costs while ensuring that requirements are met.

Supply Chain Management is "a key strategic factor for increasing organizational effectiveness and for better realization of organizational goals such as enhanced competitiveness, better customer care and increased profitability" (Gunasekaran et al., 2001, p. 71). According to Stewart (1995), supply chain management aims to minimize non-value-added activities, minimize investment and operating costs, increase customer responsiveness and supply chain flexibility, and improve performance and cost competitiveness.

Supply chain performance

According to Beamon (1999), supply chain's performance analysis only takes place after the implementation of the appropriate performance measures in order to achieve the objectives of supply chain. The author has shown that a supply chain performance measurement system must include three types of performance measurement; measuring costs, measuring customer service and measuring flexibility.

For Gunasekaran et al. in 2001, there are two reasons for having a performance measurement system and indicators in a supply chain; a lack of a balanced approach (between financial and non-financial measures) and a lack of clear distinction between measures at the strategic, tactical and operational levels.

Supply chain performance refers to supply chain activities to meet final- customer requirements, in terms of product availability, on-time delivery, and all the inventory and capacity required of a supply chain in order to provide the performance of the latter in a receptive manner (Hausman, 2004).

A supply chain performance measurement system aims to improve the supply chain efficiency and effectiveness, to capture the relevant aspects of the company's performance and to provide elements and information to assist decision-making for management (Holmberg 2000, Gunasekaran et al., 2004).

Theoretical foundations of inter-organizational control

According to Nogatchewsky and Donada (2005), the three most widely cited theories in inter-organizational relationships are the transactional approach, the relational approach and the power and dependency approach. Our revue of literature revealed a more specific theory to consider, which is Morgan and Hunt's theory of commitment and trust (1994) that was further developed by marketing researchers as well as relational approach.

- Trust and commitment theory:

Inspired by marketing theology, Morgan and Hunt founded the theory of commitment and trust in 1994 after noticing the collaborative aspect in business exchanges being neglected by researchers. Through this theory, these two authors show that there is a close link between trust and commitment.

The authors believe that relational marketing can only be successful if relational commitment and trust is established. They have started from an analysis of successful, productive and efficient business exchanges to those who are unproductive and ineffective, in order to conclude that commitment and trust are the keys to success, not power. When these two elements - not just one or the other - are present, they produce results that promote efficiency and productivity (Morgan and Hunt, 1994).

According to the authors, these two factors are keys as they encourage marketers to; firstly, preserve relational investments by cooperating with trading partners, secondly to resist attractive alternatives in the short term in favor of long-term benefits and thirdly to consider that high-risk stocks are cautious because of the belief that their partners will not act in an opportunistic way.

The authors defined the relational commitment by the situation where the partners of an exchange think that the relationship is so important and that it must continue in spite of the maintained efforts. Commitment and trust are involved in creating cooperation within an exchange, and cooperative behavior is the key to successful relationship marketing.

- Transactional approach:

Oliver Williamson in 1975 developed transaction costs theory; he created the foundation of this theory and deduced different ways of governance that can exist for companies to control their transactions. Williamson has designated three control modes; control by the market (price system), hierarchy (within the organization) or hybrid forms (contracts). The author started from an initial analysis of the market and the company as much as two institutions of the economy in 1975, then bringing up the hybrid forms in 1985-1994 in order to be able to answer the critics on his first analysis.

The transaction cost theory states that exchanges between economic agents generate costs that are necessary for the development and maintenance of an exchange relationship and therefore diminish performance. These costs, called transaction costs, vary according to these transactions type, the level of assets and investments employed and the degree of opportunism and rationality of the players. For Williamson, lowering these costs as well as seeking protection from partners' opportunistic behavior of inter-firm relationships is among the most essential objectives of organizational management.

Williamson studied the three categories of contracts that Macneil (1973) proposed; conventional contracts, neoclassical contracts and relationship contracts. According to Williamson, Macneil thinks that any type of contract has the objective of facilitating exchanges. He also specified the right type of contract for each type of governance and transaction.

- Relational and social approach:

The relational approach has been developed by marketing researchers to meet the demands of the consumer and manage the relationship with customers, because for Crozier and Friedberg (1977) the consumer is a strategic player. This approach is subsequently adapted by researchers to all

inter-organizational relationships even in a supply chain perspective (Donada and Nogatchewsky 2005, 2007 and Dekker et al., 2013).

For Larson (1992), relational-based exchanges are initially based on the success of past relationships and on reputations that will reduce uncertainty and set expectations and thereby improve cooperation. Thus a control system is needed for new relationships which are the result of the growing trust and the evolution of reciprocity norm; afterwards the exchange actors have become more operationally integrated and strategic. So instead of assessing costs and establishing legal contracts, effective control and coordination took place, so that opportunism was avoided and all for the purpose of maintaining trust and reputation. Larson (1992) believes that cooperation brings out explicit duties (communication and information sharing) and other implicit ones (transparency, honesty, fairness and reciprocity).

- Power and dependence approach:

Among the researchers who founded the power and dependency approach, Richard M. Emerson (1962) focused on the ambiguities between power, authority and legitimacy. He focused his attention on the properties of equilibrium in mutual power-dependency relationships. Nogatchewsky and Donada state that: "researchers in this approach understand exchange relationships according to the mutual dependence of their actors, which is inversely proportional to their power" (Nogatchewsky and Donada, 2005, p. 9).

The resource dependence theory of Pfeffer and Salancik (2003) represents the basis on which the power and dependence approach is based. According to this theory, inter-firm control is the strategic solution to situations of uncertainty and dependence.

The performance of inter-organizational relationships according to the power and dependency approach is based on efficiency, the objectives of exchange parties are to exercise their power, reduce uncertainty and avoid to be influenced by others. Moreover, the means of control in inter-firm relationship are often more or less coercive strategies of influence (Donada and Nogatchewsky, 2007).

Ouabouch and Akrich (2016) believe that the recording of control modes of an inter-firm exchange in a relational logic makes it possible to minimize the uncertainties induced by the business-partner relationship.

The foundation upon which inter-organizational control rests is built first by the precision of control objectives in terms of reducing uncertainty, convergence of goals and the exercise of power (Donada et al., 2012).

Supply chain management control

According to Fiore and El Kartit (2016), management control action plan has been influenced by several changes in supply chain management. Among the changes cited by the authors; the downstream integration of the logistics chain, a strong informational dimension of logistics systems, the integration of supply systems and a consideration of strategic dimension of external relations upstream with suppliers but also downstream with customers.

The impact of supply chain management evolution on the general organizational field of application and on management control in particular is manifested in the transition from an inter-organizational management control to a supply chain management control (Fiore and El Kartit 2016). According to these two authors, a supply chain management control system is different in the way that it takes into consideration specific problems; it is most often accompanied by the mobilization of management tools and devices that favor inter-firm collaboration and information sharing.

A supply chain management control system is a set of institutional, functional and instrumental elements intended to support supply chain management in inter-organizational flows management and control of material, information and finances as well as different parts of the supply chain (Horch, 2009).

Methodology

For this work we have used the semi-directive interview given the exploratory and qualitative aspect of this study.

In the light of data saturation assumption (Glaser and Strauss, 1967, Bertaux, 1980, Savoie-Zajc, 2000) which confirms according to Pourtois and Desmet (2007) the credibility and transferability of research. Our sample was set in 12 interviews with managers from various canneries in the targeted region (5 director managers, 3 logistics managers, 2 accounting and finance directors, 1 export-import manager, 1 production manager).

These interviews deal with logistics and management control within the canning factories, as well as the used methods of improving performance and control procedures.

Presentation of study results conducted on the fish canning field of Souss Massa region in Morocco

The coast of Morocco spread over 3500 km and constitutes a rich diversity of fish in a good quality. In spite of that we observe from time to time a decline in the turnover of activity which is due to purchase irregularity of fresh fish. In order to be able to answer market's demand canneries are always in need of fresh fish as raw material. This lack causes the decrease in

production, which may involve conflicts with foreign partners about the failure to meet deadlines.

The fish canning sector is an evolving sector with strong export potential. According to Ministry of Agriculture, Fisheries, Rural Development, Water and Forests, the canning fish industry in 2012 generated an export turnover of 4.3 billion Dirhams, 39% of Moroccan canned fish is destined for European market and 43% for African market. This industry has a production capacity of more than 3000 tons per day, and offers thousands of jobs between permanent and seasonal.

Study results and discussion

- Logistics

Logistics within canneries has a large-scale place, encompassing any other activity that is part of the company's managing processes including production and products delivery. This function is also responsible for linking all external actors.

The logistics manager has a direct relationship with the general direction, that aims to learn about all field's news, in the national and international markets. Logistics manager is part of decision-making process; they are aware of predefined objectives and ensure that they are achieved.

For fish canneries, logistics management has changed in recent years trying to adapt to developments, this change is mainly due to the desire to expand business by following international standards in terms of safety and quality products as well as management. We also observe a partial change when acquiring or setting up new equipment as much as when establishing a new partnership.

- The connection between management control and logistics

The link between management control and logistics does not appear to be highly developed in Moroccan canneries. "Taking into consideration the necessity and the interest of this connection, the negligence of this coordination between these two functions is not satisfactory for us," says the manager of one of the canneries targeted. Managers are aware of this problem, but the constraints of time, budgets and lack of qualified personnel (logistic management controller, supply chain management controller) are the causes of this problem.

The only link between management control and logistics seems to be in terms of cost and inventory management. There is a kind of partial coordination between these two functions; "management control ensures to provide adaptable solutions for implementing and managing logistics, it contributes to logistic performance measurement by checking if the defined logistics objectives are reached or not" confirms one of our respondents.

Budgets are drawn up annually and budgets management is carried out periodically, logistics costs distribution is sometimes difficult to perform except for outsourced services, which for logistics managers as well as management controllers an obstacle in accounting.

Logistics dashboard is a tool used by management control function, it brings together all the information that is useful and dispersed concerning logistics.

- Performance practices

Metrics are defined for the purpose of measuring performance; furthermore financial performance is the most evaluated periodically. Quality evaluation and improvement is an important part of canning organization, hence the use of quality control ratios. Companies always trying to ensure the good quality of materials received from suppliers. In addition to that, managers make sure that staff being recruited is qualified and well trained.

Logistic costs are calculated by accounting, they are distributed according to a distribution key or calculated in full as well as a service according to need, as mentioned by one of our respondents, "the calculation method used differs according to the request of the general management".

The choice of outsourcing partner is based on the three criteria; the price, the quality and the respect of the deadlines, we observe in this direction a focus on price and delay dimensions at the expense of quality. Regarding logistics performance, it is not always evaluated because of the high level of outsourcing of logistics services.

According to one of our interviewees, "The variety of canneries structures reduces the possibility of a complete comparison of performance between competitors, which is why we use benchmark by comparing with our previous results". Benchmarking practices are therefore reduced to historical comparisons, the elements compared are mainly costs, turnover and production volumes.

Supply chain management is not yet a concern in canneries management, a supply chain management system is only established in the large exporting firms located in the region or those with subsidiaries set up in the said region, this system is always used and manipulated at the level of the parent company, and which according to the manager of one of our canneries targeted: "consists in improving the flows over the extended chain that spreads from the first supplier to the final consumer while minimizing the costs and unnecessary activities".

- Transport management

Most companies use external contractors, land transport and shipping are the most used. The choice of carriers is based on prices, image and deadline

compliance. Conditions such as: temperature monitoring, ventilation and impact resistance are also taken into consideration. Companies always aim to select carriers that are able to meet their requirements.

Canneries in Souss Massa region have a traceability system, especially exporting companies. In terms of product safety, this system verifies procedures application, compliance with the rules and expected quality. In terms of transport, traceability aims to keep track of products transport or storage, one of our interviewees confirmed that "a tracking system of maritime cities is essential to keep and guarantee the flow of goods from factory to customer, and vice versa, in the case of a withdrawal or recall of a specific product. Therefore traceability gives the intention to surveillance in order to know the position of the company in the chain as well as the origin and the destination of each product. This system is used to perform an audit in terms of application of procedures.

Failure to meet deadlines is in itself a cost generator, given the fact that this aspect is taken into account in the quality of seafood. As one of our respondents mentioned; "In term of choosing and evaluating suppliers, we give a lot of importance to the respect of delivery times of fresh fish. It represents one of the first criteria in choosing our fresh fish deliverers, especially for this raw material, hence the factor of quality".

Conclusion and research perspectives

Our study is purely exploratory. It represents the basis on which we will conduct our main study. Our work is a work in progress that will eventually be finalized by a quantitative study that will be part of a positivist paradigm using hypothetico-deductive method. In this paper, we try to cover the literature around inter-organizational control, the theoretical approaches on which it is found and the problems posed to actors by this control. We conclude by presenting features of management in fish canning industry of Souss Massa region in Morocco.

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Opportunities for Parallel Import in China (Shanghai) Pilot Free Trade Zone: Evidence from the Automobile Industry and the Pharmaceutical Industry

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Abstract

Parallel import, as a pattern of international trade, is often under criticism because of infringement of intellectual property. However, the establishment of China (Shanghai) Pilot Free Trade Zone has contributed to the rapid development of parallel import, which has existed in the “grey zone” in China for a long time. Generally speaking, parallel import not only minimizes damages to related intellectual property owners, but also maximizes flow of goods and promotes formation of a unified market, which is beneficial to free trade and economic integration as well as the welfare of consumers. This paper investigates two industries most affected by parallel import, namely the automobile industry and the pharmaceutical industry. Two cases, “Peugeot Unfair Competition” and “Compulsory Licensing of the Indian Pharmaceutical Industry”, are analyzed. This paper draws the conclusion that the general welfare of society must be considered and a clear boundary of intellectual property rights should be established in the development of trade policies on parallel import. Effective use of parallel import can ultimately promote social development.

Keywords: Parallel Import, Intellectual Property, Parallel Import Cars, Pharmaceutical Industry

1. Introduction

With low political risk, rapid economic growth, a high degree of openness to international trade and abundant natural resources, China has a positive environment for FDI (Mele and Quarto, 2017). From 1990 to 1999, China increased the stock of FDI from less than \$19 billion to over \$300 billion. Therefore, according to the stock of inward FDI, China was ranked first among all developing countries in the world (Graham and Wada, 2001).

Parallel import, a new form of FDI, has recently emerged in China. Meanwhile, the establishment of China (Shanghai) Pilot Free Trade Zone provides favorable policies for parallel import. Therefore, it is imperative to investigate the opportunities for the development of parallel import in China.

Parallel import, more often than not, is considered infringement of intellectual property. The establishment of China (Shanghai) Pilot Free Trade Zone greatly promotes parallel import. Parallel import has been in China for a long time. Its status remains in the “grey zone”. To what extent does parallel import damage intellectual property? What are the advantages of parallel import? How does parallel import influence the market and the welfare of consumers? This paper attempts to answer the abovementioned questions by investigating two industries most affected by parallel import, *i.e.*, the automobile industry and the pharmaceutical industry. Two cases, “Peugeot Unfair Competition” and “Compulsory Licensing of the Indian Pharmaceutical Industry”, are analyzed.

A great deal of literature pertains to whether parallel import has more advantages (benefit to importing countries) or disadvantages (damage to intellectual property holders). For China, a developing country with the largest market in the world, should parallel import be allowed?

Price differences of the same product at home and abroad and the monopoly of individual enterprises are both obstacles to economic development. Abuse of the rights of intellectual property may aggravate non-tariff barriers - the deterioration of trade barriers of intellectual property. If parallel import functions in an orderly way, it can help break the monopoly of patents and copyrights, and ultimately lead to enhancement of social welfare of a nation. The social goal of economic globalization is to save resources and improve economic efficiency. Parallel import can exploit comparative advantages of nations, so that resources can be allocated efficiently in the world market and improve economic efficiency (Gao, 2007).

With reference to *Agreement on Trade-Related Aspects of Intellectual Property Rights* (TRIPS), *Anti-Counterfeiting Trade Agreement* (ACTA), *Exhaustion of Intellectual Property Rights*, and *principle of territoriality*, this paper investigates parallel import in the automobile industry and the pharmaceutical industry. This paper explores the influence of the two agreements and the two principles of parallel import. In addition, this paper discusses the current situation and the future development trend of parallel import in the China (Shanghai) Pilot Free Trade Zone. This paper proposes policy implications according to theories and case analysis.

The remaining part of this paper is organized as follows. Section 2 reviews related literature. Section 3 introduces institutional background and theory. Section 4 analyzes the case of the automobile industry. Section 5 is

devoted to the case of the pharmaceutical industry. Section 6 proposes policy implications. Section 7 concludes the paper.

2. Related Literature

Parallel import is the result of expansion and restriction of intellectual property rights and the choice of national trade policy. Nations choose appropriate principles of intellectual property according to their own interests. Yan (2012) points out that it is suitable for nations against parallel import to use *Domestic Exhaustion of Intellectual Property Rights* or *Principle of Territoriality* to prevent parallel import, while nations that support parallel import use *International Exhaustion of Intellectual Property Rights* or *Principle of Universality*. The application of these principles is related to intellectual property law. Nevertheless, the real determinant of the application of these principles is the strategy of national intellectual property protection and international trade. Zhang (2004) insists that *Domestic Exhaustion of Intellectual Property Rights* is not the only basis on which whether parallel import infringes intellectual property is judged. The government's economic policy, trade policy, and relevant laws and regulations are more important factors. In other words, whether parallel import infringes intellectual property is related to a nation's weighing of interests, and *Domestic Exhaustion of Intellectual Property Rights* can only serve the practice. Liu (2006) reasserts that *Domestic Exhaustion of Intellectual Property Rights* is the theoretical foundation of legalizing parallel import while *Principle of Territoriality* is the theoretical basis against parallel import. Parallel import can be regulated by two measures. One is to allow restricted access to parallel import through *Principle of Territoriality*. The other is to regulate parallel import through *Anti-Unfair Competition Law*.

Li (2010) states that legislation of parallel import should first consider national conditions, and refer to previous legislative experience and international trend at the same time. Legislation should proceed step by step on the basis of respecting the interests of intellectual property owners and protecting a nation's economy and its technical and cultural industries. Zou (2003) argues that China is a developing and export-oriented country on which parallel import cannot have a great impact for a long time. Therefore, China should adopt an eased attitude towards parallel import and promote its export and circulation of commodities.

The automobile industry and the pharmaceutical industry are two industries which are most affected by parallel import. Qing (2014) insists that the launch of the China (Shanghai) Pilot Free Trade Zone and the "three guarantees" of the automobile market are valuable. However, future development of parallel import cars depends on reform of national laws and systems. Standardized operation of parallel import cars is beneficial to pushing

the price system of imported cars to drop further so that the monopoly of import automobiles can be breached. Nevertheless, parallel import cars mainly rely on scattered orders from overseas distributors, who decide that the market scale should not expand much. Yan (2015) believes that the survival basis of the existing price system of import automobiles is the current *Automobile Brand Sales Management Approach*. Parallel import can only play a role in adjusting the price system of import automobiles. In order to break down the monopoly in the automobile industry, competition mechanism should be introduced. However, this means that the system of total dealer, which goes against the *Approach*, would be cancelled. In this situation, the proper introduction of parallel import becomes a breakthrough in breaking the price monopoly of import automobiles (Ke and Zhang, 2008).

Dong (2006) describes provision of compulsory licensing for medicines in China in detail. When other nations need to import medicine to treat certain infectious diseases and fulfill relevant procedures, China can issue compulsory licensing to help these nations solve public health problems. Barfield and Groombridge (1999) argue that in the conflict between free trade and intellectual property protection, it is essential for the government to allow patent holders to control parallel import. This does not only promote innovation in the pharmaceutical industry, but also enhances the material interests of consumers in developed and developing countries. According to Bordoy and Jelovac (2003), if it is allowed to import a monopolized medicine from a nation to another, the total payment level of patients in different nations is different in terms of the effect that patients get from the consumption of the medicine. On one hand, parallel import reduces total social welfare in different national health systems; on the other hand, parallel import improves total social welfare in the health care system. Maskus and Ganslandt (2001) analyze data from Sweden and find that the average price of medicines in the Swedish market has fallen due to an increase in parallel import. The price of medicines affected by parallel import decreased by 12% to 19% compared with other medicines. Naghavi and Mantovani (2014) point out that the existence of parallel import medicines is due to price differences of medicines in different nations, which lead to potential arbitrage opportunities for medicines. Parallel import is a solution to the rising price of medicines. However, the risk of patent protection and counterfeit, along with unexpected inferior medicines in the process of importing, deserve special attention. Gene and Edwin (2006) believe that if arbitrage of parallel import is tolerated, it may destroy intellectual property rights as well as preferential policies for investment in the pharmaceutical industry and other research intensive industries. Member states can implement *International Exhaustion of Intellectual Property Rights* to allow parallel import under *TRIPS Agreement*. When medicine patent law is amended or formulated, ensuring public health should be seen as the

purpose. At the same time, various measures should be taken to prevent excessive parallel import of medicines.

3. Institutional Background and Theory

Parallel import, also known as the “grey market”, is a phenomenon of the combination of intellectual property and international trade. With the development of international economics and trade activities, an intellectual property can be protected in many nations at the same time, and parallel import becomes more common.

Parallel import in China is generally defined as “unauthorized importers import products from other nations without permission of the intellectual property owner” (Dong, 2006). In United States, parallel import product is often referred as “grey market product” by those who are against parallel import. According to the American case law, grey market products are “products made out of United States and imported to United States without permission of the intellectual property owner. These products nevertheless involve effective American intellectual property (Guan, 2010).

In summary, parallel import is a behavior that unauthorized importers import and sell intellectual property goods that are legally manufactured or sold in other nations to gain profit because of price differences. As parallel import is parallel to regular import, it is called parallel import. It stands as a competitor to regular import. The relation between parallel import and “grey market” is that parallel import is a kind of behavior, while the market formed by this kind of behavior is “grey market” (Guan, 2010).

There are a variety of forms of parallel import. The first one can be identified as “re-import” or “buyback”. The intellectual property right holder D is in a high price country A. The cost of its patent product C is 60 and C is sold at a price of 100 in country A. Agent E in a low price country B is authorized to manufacture product C, whose cost is 60 while the sales price is reduced to 80. At the same time, a third party importer F (without permission) purchases product C at the price of 80 in the low price country B and sells it to the high price country A at a price of 90. In this way, in the high price country A, F competes with the intellectual property right holder D with obvious price advantages and obtains profit. In United States, the so-called “grey market product” mainly refers to product imported in this way. The number of this kind of parallel import is large because United States is a high price country (Neth, 2008).

The second form of parallel import is known as “deformation” of the first form. The intellectual property right holder D is in a high cost country A. The cost of its patent product C is 60, which is sold at the price of 100 in country A. Agent E in a low price country B is authorized to manufacture product C. The cost of product C is lowered down to 30 in country B, and the sales price

is set to 80. At the same time, a third party importer F (without permission) purchases product C at the price of 80 from the low price country B and sells it to the high price country A at a price of 90. In this way, in country A, F competes with the intellectual property right holder D with obvious price advantages and obtains profit. Here, the deformation of form two is carried out as following. The intellectual property right holder D is in the high cost country A. The cost of its patented product C is 60, which is sold at a price of 100 in country A. In the low cost country B, E is not authorized to produce product C. However, E counterfeits product G with the same effect as product C in country B. Due to the low cost of country B, the cost of product G is decreased to 30 and the price is set at 80. At the same time, the third party importer F (without permission) purchases product G at the price of 80 from the low price country B and sells it to the high price country A at a price of 90. In this way, in country A, importer F competes with the intellectual property right holder D with obvious price advantages of product G and obtains profit. This is actually the case of the practice of the Indian counterfeit pharmaceutical industry, which is illustrated in detail in Section 5.

The third form is a combination of the two forms above. The intellectual property right holder D is in a high cost country A. However, due to a series of reasons (labor cost, capital cost, production permit *etc.*), patent product C cannot be produced in country A. The intellectual property right holder D authorizes agent E in country B to produce product C whose cost is 30 and sales price is 80. The intellectual property right holder D imports product C from country B and sells it at a price of 100 in country A. At the same time, a third party importer F (without permission) purchases product C at the price of 80 from the low price country B and sells it to the high price country A at a price of 90. In this way, in country A, importer F competes with the intellectual property right holder D with obvious price advantages of product C to obtain profit.

In the three forms above, only the third one is the real parallel import. The first one is buyback while the second one is only an unauthorized import. However, parallel import is not confined to the physical sense of “parallel”. To be precise, whether an import is parallel import or not is the legitimation of the source of import products. In other words, whether it is placed in an exporting country or regional market by the intellectual property right holder or to a person that the intellectual property right holder has agreed (Gao, 2007). Accordingly, these two situations are regarded as parallel imports as well.

It is worthwhile considering interest conflicts and coordination of parallel import in intellectual property right holder’s angle and consumer’s angle. For relevant intellectual property right holders in the importing country, parallel import brings about many damages to their own interests. First of all, parallel import products take up part of the market share of the intellectual property

right holder with price advantage, which makes the market share of the intellectual property right holder shrink. Second, “free-riders” of parallel importers have led to lack of adequate returns for relevant intellectual property right holders. Such companies often invest heavily in developing products, launching products to the market, building consumer awareness and developing effective marketing networks. On the other hand, parallel import is beneficial to intellectual property right holders. First, increase in parallel import products can expand the overall sales and market share, which makes parallel import products more competitive than similar products. Second, in some cases, there would be product surplus in the market of the exporting country for some reason. Parallel import can help transfer these products quickly to importing market for sales so that the intellectual property right holders could benefit (Wang, 2011).

The most concern for consumers is the price and quality of goods. Despite low price, parallel import good is genuine and its quality is basically the same as the same product which is manufactured and sold by authorization. Consumers can easily buy parallel import goods and enjoy low price because of the extended sales channels and the increase in alternative products. This is the benefit of parallel import for consumers. The negative impacts of parallel import on consumers are that there may be quality differences or quality defects. Besides, consumers cannot get after-sales technical services, maintenance services, product upgrade services and spare parts supply so that the interests of consumers cannot be legally protected. Although parallel import has a price advantage, the entire experience may not please consumers.

It can be seen that parallel import has different advantages and disadvantages in different perspectives. Even for the same subject, there are positive and negative sides (Wang, 2011). Parallel importers emphasize on price competition resulted from parallel import, which helps meet consumer demand, and the role parallel import plays in reducing price discrimination.

4. Case Study of the Automobile Industry

On October 5th, 2005, the European Commission imposed a fine of 49.4 million euros for the case that the automobile manufacturer Automobiles Peugeot SA and its subsidiary Peugeot Nederland NV exported Peugeot automobiles to the Dutch market directly without the permission of local distributors due to its breach of Article 81 EC in “no abuse of market power” and “no cartel”.

The main basis for this sentence is that Peugeot breaches the selective and independent distribution agreement that it signs with its Dutch dealers, and causes hostility and restriction on competition. Thus, the deed of Peugeot constitutes serious infringement. The infringement act of Peugeot could be divided into two parts: one is the discriminatory bonus that Peugeot signs with

its Dutch dealers. Employees' payment is related to car sales. Such bonus has fallen sharply after parallel import in the Netherlands. The other is the pressure puts on dealers that Peugeot signs with its Dutch dealers. Regional sales cannot reach the target after parallel import, which causes loss to local dealers. Such losses may also be considered as discriminatory bonus.

It is obvious to see that this is an interest game between different individuals. The impact of parallel import could be analyzed from four angles, which are overseas head office, regional authorized dealers, parallel importers, and consumers. The first is overseas head office (the original intellectual property owner). For head office, in the parallel import process, it is necessary to take sales, brand, and possible legal issues into account. Total sales are likely to go up but not much. It is not a big deal, but the sales focus has shifted from one region to another. However, because of parallel importers' different standards of quality assurance and after-sales services, the formulation and maintenance of brand standard can be very difficult. Thus, word of mouth in the market would be affected. In addition, because the sales price is difficult to control, the competition between the company itself and its rivals in the market and the sensitiveness of the company to the market will both decrease. The difficulty in making a quick response to the market has left parallel import out of the development plan of the head office. The second is regional authorized dealers. For dealers, the market is squeezed, the brand reputation is negatively affected, and the promised welfare of the head office is reduced. These are all the situation of the Dutch dealers in the case of "Peugeot Unfair Competition". At present, the profit of 4S automobile dealers is mainly from the manufacturers' rebates. But larger profit comes from repair and maintenance services. The operating profit model of mature 4S automobile dealers is that automobile sales account for 30%, after-sales services account for 60%, and others only account for 10%. It can be seen that the automobile after-sales service market is the most stable profit source in the automobile industry, which could account for 60% to 70% of the total profit. The third is parallel importers. Free trade and open policy lead to the legitimacy of parallel import, which makes parallel importers legitimate businessmen who are protected by the policy. Those people can be regarded as speculators who use price differences between domestic market and foreign market to carry out arbitrage and usually do intellectual property import on the edge of the law based on anti-monopoly law. The fourth is consumers. For consumers, parallel import brings more alternatives, more automobile dealers, and more car models. On the other hand, if the seller's quality could not be guaranteed, consumers need to work hard to improve their judgement capability.

On January 7th, 2015, the document on parallel import cars in China (Shanghai) Pilot Free Trade Zone (*the document*) was released. Shortly after, 17 automobile companies launched sales of parallel import cars on February

10th. With an obvious price advantage, completed configuration, short pickup time, and simplified procedure, after the introduction of the new parallel import policy, parallel import cars suddenly emerge in China's market and stand against traditional 4S automobile dealers. Parallel import cars bypass sales agents and eliminate licensing costs and agency costs. The price of parallel import cars is not strictly restricted by manufacturers. Instead, it depends on the market. In addition, some of the authorized import automobiles have not been publicly released in China or the Chinese version is not configured for mass production. For some automobile enthusiasts, buying parallel import cars seems to be a better choice.

As a matter of fact, there have always been parallel import cars in China's import automobile market, but the number of parallel import cars has been at a low level due to lack of after-sales services, unavailability of "three guarantees", and restrictions on licensing in China (Ke and Zhang, 2008). However, this does not offset the actual price advantage of parallel import cars. According to surveys, parallel import cars are about 15% cheaper than imported cars in traditional 4S automobile dealers. The launch of the pilot project of parallel import cars in China (Shanghai) Pilot Free Trade Zone has gradually removed the "grey" status of parallel import cars, enabling them to compete fairly with authorized import car dealers.

At present, the third party service platform of China (Shanghai) Pilot Free Trade Zone carries out after-sales, "three guarantees", and recall services for parallel import cars. *The document* also clearly stipulates that registered car dealers in the Free Trade Zone are the main bodies responsible for the quality of parallel import cars, and they should fulfill duties such as product recall, quality guarantee, after-sales service, "three guarantees", average fuel consumption approval *etc.* (Liu, 2014). At the same time, import automobile spare parts and maintenance costs are cheaper than that of traditional 4S automobile dealers. The new policy, along with the price advantage, effectively protects the interests of consumers and promotes parallel import cars.

For the same car model, the price of parallel import cars is reduced by 10% to 30%. The quotation of parallel import product in customs is just the retail price of the product in its original market. However, local authorized dealers often take countermeasures which results in the price of cars in 4S automobile dealers even lower than that of parallel import cars.

The model of parallel import cars is estimated to be more plentiful in China. Parallel import car dealers can choose different car models for different markets, while authorized dealers can only choose the model of cars in their own market. However, car models selected by authorized dealers are often adjusted and optimized for a particular market. On the contrary, the choice of parallel import car models requires consumers' own judgement.

In terms of service, parallel importers often offer much worse services. The service cost of authorized dealer is added to the price of the car, while parallel import does not. This is just one of the reasons why parallel import prices are low. Although parallel importers can form an industrial chain alliance, the level of after-sales services is often a weakness.

5. Case Study of the Pharmaceutical Industry

The concept of “generic medicines” was initiated in United States in 1984. At that time, there were about 150 common medicines’ patents which expired in United States, and large pharmaceutical companies were unwilling to continue developing these medicines, which made these medicines unclaimed “orphan medicines”. As a result, United States issued a law according to which new manufacturers could imitate medicines as long as they could prove that the biological effects of their imitated products are comparable to the original ones. Thus, the concept of “generic medicine” was created. “Generic medicine” and “patent medicines” are totally the same in dosage, safety, effectiveness, quality, function and indications. However, the average price of “generic medicine” is only 20% to 40% of “patent medicine”. Some even have a price difference of more than 10 times.

In 1952, the Indian government still implemented the product patent law, which was from the era of British colonization to strictly control the pharmaceutical industry. European and American pharmaceutical magnates obtained patent for developing new prescription medicines by which they gained long-term monopoly profits. However, Indian companies were not able to develop new patent medicines through research and development. Therefore, consumers could only buy expensive prescription medicines from European and American companies. Ranbaxy took aim at a sedative called “benzodiazepine” of Roche Switzerland, which did not register patent in India, and started to imitate it. Later, Ranbaxy imitated the best-selling patent product of the world’s largest pharmaceutical company Pfizer. The medicine was called Lipitor. Its annual sales reached \$13 billion. Ranbaxy not only generated huge profits but also provided cheap medicines for the poor. The Indian government then decided to encourage local pharmaceutical companies after the example of Ranbaxy. The new patent law was promulgated in 1970 in India which allowed Indian pharmaceutical companies to imitate and produce any types of medicines as long as the production process is different from the patent production process of other pharmaceutical factories. This law cleared obstacles for generic medicines in India.

In 1995, India joined the WTO and amended the patent law, which grants “product patent” to medicines and provides patent protection to medicines invented or modified after 1995. Indian generics with huge markets all over the world were not willing to exit the market. Therefore, the Indian

government came up with a new approach, *i.e.*, patent compulsory licensing system for medicines. For example, the Indian Patent Office issued a compulsory license for Natco, an Indian pharmaceutical company, to produce generic versions of Sorafenib, a liver cancer medicine of Bayer, Germany. The patent of Sorafenib is valid until 2021, but Natco began imitating and selling it as early as 2000. Bayer took an infringement action to Natco in 2011, but unexpectedly met with compulsory licensing. The Indian Patent Office argued that medicines of Bayer are too expensive for ordinary people to consume.

Indian pharmaceutical companies which do not get compulsory license sell generic medicines and give patent legal battles with pharmaceutical firms at the same time. Today, Ranbaxy sells inexpensive generic medicines to 150 countries, making itself the world's fifth-largest pharmaceutical company. But Ranbaxy faces various lawsuits every year and it has engaged in lawsuit with almost as many as all famous pharmaceutical companies in the world. Novartis AG had a law war with the Indian government on patent protection. However, Novartis AG lost the lawsuit finally.

The compulsory licensing system concerning Indian generics can be interpreted that country or government directly allows other companies or individuals to invent and manufacture generic medicines without the permission of patent owner. The aim of compulsory licensing is to promote the development of science and technology and to safeguard social justice. The rapid development of the Indian pharmaceutical industry is due to loose industrial policy, the development strategy which is adapted to its own characteristics, and the positive and outgoing idea of development. First, the Indian government and the law both support generic medicines. For a developing country, economic benefits and medicine availability are the top priorities, while intellectual property is only a game rule of the international community. This is the reason why the Indian government supports generic medicines. Second, Indian pharmaceutical companies have found their own positioning. In a country with a medicine penetration rate of only one third, effective and inexpensive medicines are the mainstream medicines in the market. In fact, India has invested considerable funds in developing unpublished prescriptions to meet the needs of the society and promote the development of domestic pharmaceutical industry. In the end, India exports generic medicines to different countries with a positive and outgoing view of development, and other countries allow parallel import medicines based on "people –oriented" thought. Lower-priced medicines can meet the requirement of increasing social welfare. Developing countries have not established a comprehensive health insurance system that can withstand high price medicines. Therefore, low-cost medicines have a broad market.

As for China, on February 16th, 2015, People's Procuratorate of Yuanjiang Municipal made a non-prosecution decision on Yong Lu, who is

the first person to buy anticancer medicines as a purchasing agent according to law. Regular anticancer medicines for leukemia in China named Gleevec are imported from Switzerland, which cost RMB 23,500 yuan per box. The similar medicine made in India that Lu purchased from Japan had the same effect as Gleevec, but the price is only about 4,000 yuan per box. Later, Lu got in contact with the Indian anticancer medicine dealer, India Cyno Company, through the contact information provided in the medicine specification, and began to buy anticancer medicines directly from it. As the news spread among patients, the number of Chinese customers who purchase anticancer medicines from Cyno gradually increased. The price of the medicine decreased gradually until 200 yuan per box. Lu was called the first person to buy anticancer medicines as a purchasing agent and was prosecuted because he shared the purchase channel of the Indian anticancer medicine, which is a generic medicine of Gleevec, with thousands of others. After 36 days, Lu was officially discharged.

This case provokes people to contemplate a series of questions. Can medicines be parallel imported? Should China's market permit parallel import medicines? Can intellectual property issue of parallel import medicines be properly solved? Can China sign import contract with pharmaceutical companies to put high price anticancer medicines into medical insurance? From this, it can be seen that parallel import is not only a breakthrough in the current pharmaceutical industry, but also a breakthrough for medical insurance reform. The case of anticancer medicines just reflects the demand for parallel import medicines in China.

China has no precedent for parallel import medicines, but it does not mean that parallel import medicines are not allowed. Parallel import is less harmful to intellectual property laws than generic medicines. China is still a developing country of which health care system is not developed yet. Parallel import is the best solution to the urgent needs. In terms of parallel import medicines, China can learn two points from India. One is to study the rules of international intellectual property. Blindly following the rules and regulations is not the attitude of a developing country. The attitude of a developing country should be to achieve goals and avoid legal risks. Second, China should effectively use outsourcing to improve its capacity of independent research and development. Now that India's pharmaceutical industry has reached a level of sophistication. Parallel import medicines can be adopted directly. The development of China's pharmaceutical industry is slow, which requires fresh blood. Parallel import can drive market screening, innovation and development.

6. Policy Implications

General Administration of Quality Supervision (AQSIQ) plans to take import automobiles from non-authorized channels into *Responsibility for the Repair, Replacement and Return of Domestic Automobile Products* (three guarantees). At the same time, the scale of non-authorized import automobile dealers in China is small. Hence, taking insurance companies into the three guarantees system of non-authorized import automobiles may become a trend. The cancellation of the dealer record system and the automobile brand management is just a beginning. The establishment of a fair market order is the general trend.

The aim of the initiative of China (Shanghai) Pilot Free Trade Zone is not only to build a platform, but also to establish a set of development system and pattern to cover the overall planning of the parallel import automobile industry chain from import, logistics, customs clearance, certification, registration to dealer management, and after-sales maintenance services. The initiative also considers parts and components of parallel import automobiles. China (Shanghai) Pilot Free Trade Zone will adopt a parallel import mode for components and parts at the same time.

Meanwhile, parallel importers are also trying to combine e-commerce with parallel import automobiles to find new sales models. Some parallel import automobile dealers that have entered in the zone are benefiting from new policies and therefore trying to sell cars through e-commerce platform at the same time. It is not only beneficial to overcome the weakness of lacking sales networks for parallel import automobile dealers, but also decreasing the concerns of traditional automobile companies.

At present, China's trademark law and anti-unfair competition law do not make specific provision to parallel import medicine trademark. However, China can learn refer to United States. On the premise of necessary requirements, parallel import medicines could be permitted. It has a positive effect on both the economy and public health.

For the negative effect of parallel import or export of generic medicines, China needs extensive and in-depth exploration. For example, problems that affect the quality and safety of medicines and decrease in innovation of medicines *etc.* need immediate attention. China has noticed these negative effects. It is formulating related medical intellectual property policies to reduce these negative effects.

7. Conclusion

In general, the dispute of parallel import is a game of anti-monopoly and intellectual property protection. Its core is dispute of interests. When using parallel import, the interest balance among nations and public and intellectual property protection should be evaluated. Parallel import should be regulated

by anti-abusing of intellectual property rights, against unfair competition and antimonopoly. In this way, parallel import can be developed in an orderly manner and the goal of saving resources and improving economic efficiency can be achieved. Also, each country can exploit its comparative advantage so resources can be properly allocated. Ultimately, the national social welfare would be promoted.

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Corporate Governance in Jordan and Boardroom Diversity: A Critical Review of Literature

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Abstract

This paper focuses on critically analyzing the present literature which discusses the Corporate Governance (CG) concept in Jordan and board diversity, and the potential benefits obtained from adopting this concept in different streams like its impact on the total organizational performance. The paper also aims to present related theories and empirical literature focused on the composition of corporates' boardroom and the role of its diversity in achieving their objectives such as competitive advantage. It also aims to determine the gaps and guidance for future studies. The review shows examples of basic theories, definition, methodologies, and certain industries deficiencies in previous studies and literature which limits the generalizability of their findings in specific environment, industry, and population. Finally, the study also presents implications on implementation, theory, and the best practice of Corporate Governance.

Keywords: Corporate governance, boardroom diversity, Jordan

Introduction

Corporate governance (CG) indicates the framework of large companies and the way these companies manage their businesses to achieve their strategic objectives, which focuses traditionally on maximizing shareholder's wealth. CG basically means the board of directors who govern the whole organization; the executive levels that make essential decisions; and the lower levels of management under them that carries out these decisions in a way to achieve the organization's interests. It is a fundamental matter in the society and can be a major objective for organizations at various levels (Shailer & Greg, 2004). The governance demonstrates the rules, principles, and also distribute the rights and duties among several parties in the organizations (for instance, the board of directors, executives managers,

shareholders, employees and other stakeholders) and forms the basics and processes in making decisions (OECD, 2004). CG as well includes the methods through which organization's objectives are determined and strives in the light of social, legal, and economic environment. Governance notion in the same vein consists of controlling the activities, plans, and actions of organizations, their representatives, and influential stakeholders (Ricker, 2009).

Corporate Governance and Boardroom Diversity

There is no single definition of CG due to its several perspectives which it is interpreted from. Zingales (1998) defined CG as “allocation of ownership, capital structure, managerial incentive schemes, takeovers, board of directors, pressure from institutional investors, product market competition, labour market competition, and organisational structure which can all be thought of as institutions that affect the process through which quasi-rents are distributed (p. 4)”. The term “CG” has not been common. Few experts in the field of management have paid attention to this concept which generally characterizes the approach through which the companies are managed (O'Regan & Oster, 2002). Moreover, this term seems to be used almost globally in guidance, organizing, and supervision. Garvey and Swan (1994) underlined that “governance determines how the firm's top decision makers actually administer such contracts (p. 139)”. Shleifer and Vishny (1997) illustrate CG as “the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment” (p.737). Oman (2001) characterized CG as a technique that indicates all types of organizations, either public or private, which involves rules, laws, and the business activities which dominate the relationship amongst the top managers and stakeholders. Lee (2006) defined corporate governance as “the formal mechanisms of directing, supervision, and control put in place within a company in order to monitor the decisions and actions of its senior managers and ensure these are compatible and consistent with the specific interest of shareholders and the various other interests of stakeholders who contribute to the operations of the company” (p. 67). This definition refers to the responsibility of managers towards all stakeholders regarding directing, monitoring, and achieving organizational missions and visions. Responsibility, in this context, indicates that those managers are expected to give orderly records of their decisions and works.

Consequently, board diversity can be considered as one of the most competitive advantage sources (Cox & Blake, 1991). Different studies have proved a positive relationship between diversity of board of directors and other dimensions like organizational performance (Barney, 1991); quality, board gender diversity and corporate dividend policy (Al-Rahahleh, 2017); cash conversion cycle (Al-Rahahleh, 2016); CG and compliance of public limited

organisations (Alsharari, 2015); and CG, ownership structure and bank performance in Jordan (Al-Amarneh, 2014). However, this is because the success of the organization is directly connected with the upper level of management. The demographics of board of directors (BOD) and the variety of its members was indicated as the composition of these boards in light of various dimensions like gender, age, and educational basis and experience (Erhardt et al., 2003). Due to rapid changes and increase in the numbers of female employees, gender diversity has become an important stream for all in the organization. Board gender diversity indicates the existence of women in company boards of directors or percentage of women representation in these boards (Julizaerma & Sori, 2012). Despite the increasing concern with corporate governance recently, most of these studies were conducted in developed countries and compared to studies in developing countries which were limited (Habbash, 2010). Empirical research describes the value of presence diversified directors in regards to gender, age, and nationality in high positions in the boards who are to be responsible for many corporate outcomes. The association among gender variety, and performance, for example, has been unsaturated and still needs further research. In addition, some studies have developed a positive and significant relationship between these factors (Julizaerma & Sori, 2012).

All organizations are pursuing to obtain qualified members who have particular traits and skills in top managerial positions, such as chief executive officer (CEO), in their boards which might help in fostering their productivity. Bhagat et al. (2010) emphasized the importance of giving more attention to the educational background for board members in the hiring process. This basically is attributed to the fact that other measurements, like capabilities, may be very costly and difficult to measure. Gottesman and Morey (2006) stated that educational competences may be an evidence of brilliance, where most intelligent CEOs attempt to be the best in their field in comparison to their peers. Additionally, it is also worthy to note that outstanding management competencies does not always reflect a good level of education for managers. Latent characteristics, like leadership and creativity skills, may add a significant value. It is often noted that rapid improvement and high performance companies are controlled via people who have not acquired higher education (Gottesman & Morey, 2006).

Bantel and Jackson (1989) proposed that highly competence of CEOs have an ability to manage information and adapt with key changes in the company. A number of researchers found that qualified managers with technical competences can grant company's departments with great resources (Barker & Mueller, 2002). Similarly, Graham and Harvey (2002) opined that financial managers who hold Master of Business Administration (MBA) tends to be more effective in adopting modern plans and mechanisms while

designing new projects. In connection with the educational background of the CEOs and members of board, it is associated with the financial performance of the company. Moreover, it is highly notable that empirical studies highlight on the relationship among CEOs educational level and the performance of the company. The present empirical studies are based on the data collected from the USA, for example, Gottesman and Morey (2006) and Bhagat et al. (2010). These studies provided a poor clue that CEOs holding MBA or higher degree from a prestigious university is linked with outstanding performance. The high-level management of the organization is hired due to their superior capabilities. According to Bhagat et al. (2010), such capability includes observable advantages (educational backgrounds or job experiences) and unobservable ones (leadership or creativity thinking). They stated difficulty in measuring the unobservable characteristics. Also, the observable traits may play an essential role in raising the value of the firm. Hambrick and Mason (1984) also stated that observable characters are interpreted as valid evidence based on their ability and knowledge level, which can affect the decision-making process and managerial tactics. According to the upper-management theory, a higher degree of education is closely related with high negotiation and critical thinking skills, open-mindedness, the capability to address information, and acceptance rationally to changes (Hambrick & Mason, 1984).

Theoretical Review

The separation between management and ownership in the organization increased the value of corporate governance in the modern organizations. According to O’Sullivan (2000), corporate governance is an exercise to control the resources distribution in a certain corporate. It is a system that shows how these corporate are being guided and managed (OECD, 1999). Rabi (2010) confirmed that a growing concern has been highlighted on observing and evaluating the CEOs and high-level managers by BODs as well as shareholders through corporate governance principles.

The theory of corporate governance roots from the thesis entitled “The Modern Corporation and Private Property” by Berle and Means (1932). The study focuses on major agency problem in contemporary companies where there was segregation amongst management and capital. It was known that modern corporates were suffering from this separation between ownership and management. These corporates were managed by experts in management who are responsible for protecting shareholders’ interests. The agency theory and the resource dependency theory are some of the theories that are connected to corporate governance. The resource dependency theory highlighted the function of BOD as a provider of the company, while the agency theory asserted on the BOD function as supervising and controlling the CEOs to ensure that the company’s resources are employed for activities like increasing

investments which may increase a company's value (Hillman & Dalziel, 2003). Corporate governance was utilized largely as a tool to regulate and direct the decisions of the management. This is due to the separation between ownership and management in the organization; also, it may result in decreasing managerial transparency.

The implementation of corporate governance in companies depends on the degree of theories regarding corporate governance development such as principal-agent and stakeholder theory. The Principal-Agent Theory is the backbone of corporate governance. It assumes that managers act in a selfish manner and strive for their own interests (Jensen & Meckling, 1976). This theory is helpful in supplying "a way to explain relations between organizational actors within corporations and external stakeholders" (Coule, 2015). Principal-agent connections appear when investors give resources to corporations, the authorities give powers to corporate's board of directors, and then the boards give power to the executives (Liu, 2012). Furthermore, Stakeholder Theory supported the ideology of CG. Specifically, it defended that corporations have to bolster the social responsibilities of all stakeholders, which are divided into internal and external parties, like local community, employees, suppliers, customers, creditors, and governmental departments. The conflict among these parties may arise due to contradiction, for example, the conflicts between donors' wants and customers' requests (Rochester, 1995). The issue of corporate governance should be stated, and the actions taken according to stakeholders' wants should be involved in the governance structure which is inconsistent with stakeholder theory (Hu, 2012). Agency Theory, nevertheless, is imperfect in explaining how managers can treat indirect stakeholders' interests like politicians and what society expects from their companies (Nwabueze & Mileski, 2008). With its concentration on organizing, control techniques and managerial rules, agency theory left a gap in connection among governance and organization values through stakeholder involvement (Young & Thyil, 2009). This theory emphasized a control method to CG (Gillan & Starks, 1998) based on the opinion of corporate governance as a system of regulations, rules, and principles that monitor processes in the organization. In addition, the theory defended a collaborative model. Stewardship theory has evolved as an alternative approach to agency theory, and have obtained greater advocacy (Tian & Lau, 2001). This, therefore, is because the stewardship theory is close to stakeholder-oriented approach, whereas the agency theory converges to maximize shareholder's value.

Corporate governance encompassed the term of both governance structure and mechanisms (Ma, 2005). Governance structure allocated the rights and tasks between the parties, such as the board of directors, executives, shareholders, employees, financiers, and other stakeholders in the organization

(OECD, 2004). Meanwhile, governance mechanism comprises of the rewards and compensations given to executives and employees to work hard and achieve organizational objectives as well as supervise and control the activities, plans, and decisions. The governance structure is essential if agency problems are permanent and businesses are deficient. Thus, these mechanisms include supervision and election of the shareholders as their agents (Hart, 1995). Subsequently, corporate governance can be interpreted as a mix of solid structure and efficient mechanism (Li, 2000). Solid structure defined the principles of stakeholders and prevailing relationships (Liu, 2007), while efficient governance mechanism displayed how to choose the actions and models to support in carrying out these principles.

Critical Review of Literature

A study aimed to examine the role of board combination such as gender, age, and nationality of directors based on the level of corporate social responsibility (CSR) disclosures was carried out (Young & Thyil, 2009). The study used a content analysis technique (panel data) to examine the influence between study's variables. The findings were limited only to the period of 2007 to 2011 with several industries like financial and service sectors. The study revealed great evidence that boardroom diversity has an important role in defining the degree of CSR disclosure. The variables of board diversity consist of independent members, foreign board and woman directors, which showed a positive effect on CSR disclosure in Jordan (Young & Thyil, 2009).

A relationship between CG and other aspects was found in present literature, especially in board diversity and corporate performance (Fan, 2012). Moreover, many studies are still yet to be handled appropriately. Some of this literature identified that diversity within board members has a great impact on corporate financial performance. Also, few reviews have been conducted to show if this also measures non financial performance (creativity, employees' satisfaction, and customers' loyalty). Consequently, the majority of the studies addressed board diversity widely conducted in the developed countries which are mainly different in terms of its structure and multi-dimensional contexts from the developing countries. The results of the studies which have been carried out in developed countries may not be suitable and can't be generalized abroad due to complicated and hugely different internal structure for these environments. In a paper that investigates corporate dividend policy and how they can be affected by the quality of corporate governance and board gender diversity, the sample was non-financial firms listed on Amman Stock Exchange in 2009-2015. Three control variables were used in the study (firm size, financial leverage, and return on assets (ROA)). The results revealed that corporate governance quality and board gender diversity have a significant impact on corporate dividend policy. The low

representation of women in the boardroom was also one of the study results (Al-Rahahleh, 2017). CG quality was also a variable in another study with its influence on cash conversion cycle using industrial firms listed on Amman Stock Exchange in 2009-2013. The paper used three control variables (Sales growth, Firm size, and Net profit). The findings revealed, after using Ordinary Least Square (OLS) regression analysis, that corporate governance quality has a significant negative effect on cash conversion cycle; the study further gave an implication to industrial firms in Jordan for future studies (Al-Rahahleh, 2017).

Furthermore, some of these studies are restricted based on some of the limitations in regards to data collection and analysis like case studies and secondary data of annual reports for firms. It was recommended that the studies should be carried out with several methods like survey and primary data to beautify the results and provide a strong comprehension on the association amongst CG, boardroom diversity, and other factors. Nevertheless, a lot of previous reviews are restricted to only to companies listed in the stock exchange in a particular sector, and exclude other components of the national economy which contains vital business organizations. Empirical reviews on the relationship between board diversity and corporate performance, for example, are debatable with previous researches which demonstrated paradoxical results. Prior evidence also showed mixed and inconsistent findings.

Corporate Governance in Jordan

The idea of corporate governance involves all universal and local values and rules purposed for the useful and authentic management of an organization. Jordan has applied international codes of corporate governance by including some of these corporate governance codes. These codes involve a lot of guidance in the light of good implementation of CG internationally. The codes were connected to the OECD rules and principles of corporate governance and the directing releases by the Basel Committee to promote the corporate governance codes in national organizations. In general, the recommendations that were linked to these codes were largely supported by those adapted from OECD principles.

The code was divided into different roles and responsibilities which belong to the board of directors, committee responsibilities, disclosure, and rights of stakeholders (Shanikat & Abbadi, 2011). According to the Jordanian company's law, corporates should be managed by either a general manager or board of directors. These boards should be elected by the shareholders and should take into consideration stakeholders' interests, organization's objectives, and sustainability. The upper management should have a minimum competencies and qualifications to run the company. The law states the size

of these boards not less than 3 members in order to reinforce their decisions. Also, the CEO is required to run the company with transparency and commitment, and promote ethical and responsible decisions. The board of directors should designate two committees: audit and remuneration committee. This committee is responsible for investigating particular matters and give advice to the board. The company should disclose voluntarily an evaluation of the company's position in a timely manner. This should be done based on all the information that might have a significant effect on the decisions of its stakeholders. Also, the shareholders have voting rights based on the type and amount of shares they have. The company may provide its website or other means of communication to state the shareholders' rights in voting in the general shareholders meeting (Alsharari, 2015; Al-Amarneh, 2014).

Oman et al. (2004) debated that corporate governance in emerging economies has been lately paid much attention to because of the fragility of corporate governance systems in developing markets, which was a key reason for a group of economic collapses which has a significant impact on these markets. Developing economies tend to build improved financial systems involving central banks, local banks as well as stock exchanges. They have less developed systems of accounting, governance, organizing and other financial tools, and less dynamic markets with the most developed infrastructures. These disparities conduced major doubt and also improved the variegation possibilities for shareholders from every country in the world (Kearney, 2012). Tsamenyi et al. (2007) have debated that there were lots of challenges encountering developing countries, involving risk and ambiguity, political turmoil, weak legislative system, vast intervention of government in companies, and low concern of protection for shareholders.

In Jordan, the corporate governance has been classified into a group of segments: a legislative dimension and government surveillance, capital market, disclosure and accounting standards, transparency, dynamic controlling of the board of directors, and protection of properties and minority rights (Khoury, 2003). These classifications were demonstrated in some of the local laws like Company Law in 1997 and Securities Law in 2002. The Jordanian government, through the ministry of trade and industry, attempted to implement these principles through multiple laws and other regulations (World Bank, 2004).

Subsequently, the legislative side has played a significant role in spreading the rules of corporate governance in Jordan through a collection of laws which helps in implementing corporate governance. Also, we can summarize these laws: for example, the Company Law 1997, Securities Law 1997, Banking Law 2000, Insurance Law 1999 and others (Al-Jazi, 2007). Therefore, these laws demand companies to comply with approved

international rules and standards. Jordan have now agreed and carried out the International Financial Reporting Standards (IFRS) (World Bank, 2004). Additionally, in the 1990s of the last century, the government started a comprehensive reform based on several dimensions to encourage the private sector to be more effective in economic growth and entice more investments through selling some of the valuable assets to this sector in order to manage it (Shanikat, 2007).

The monitoring of the board of directors is of vital importance in corporate governance due to its role in supervision, directing and evaluating the decisions made by the management, and how these decisions correspond with the main objectives and visions for these companies (Gillan, 2006). Some of the law of the articles states that the board of directors is responsible for preparing plans, policies, and guiding the company management. Shareholders that have a minimum of 15% capital have the right to audit the company's financial records. If they found any corruption or mismanagement, they can sue the BOD and the top management (World Bank, 2004). In Amman Stock Exchange published in 2005 on the Code of Corporate Governance, this code has some chapters and they are divided into certain subjects that contains definitions of some concepts; an introduction of the BOD frame and duties; investors' rights; general meeting for public commission; and financial disclosure guidelines. Moreover, the code is not really mandatory.

A number of codes and rules have a crucial role to play in enhancing corporate governance such as Organization for Economic Cooperation and Development (OECD) principles and Cadbury Report (1992) (Mallin, 2007). Many countries have adopted these principles and Cadbury Report by applying several codes to achieve good practices of corporate governance. These rules attempted to carry out Cadbury Report via providing assortments of recommendation like BOD and ownership structure. Jordan, as well, has agreed and implemented these codes by including them into its own corporate governance guideline in 2006. These standards involve a variety of reference that is consistent with the best implementations in the world (OECD, 2013). However, we can't talk about corporate governance in Jordan without referring to the pivotal and central role of the Central Bank of Jordan, which can't be neglected in developing and raising the awareness on the importance of corporate governance in financial and non-financial industries. The Central Bank of Jordan published a handbook in corporate governance in 2004. In addition, they also prepared the codes of corporate governance which assisted in achieving the world corporate governance activities inside the local commercial banks in Jordan.

Conclusion

The current paper reviewed the literature which examined the structure of boardroom and its impact on corporate as a whole. The paper also highlighted some pathway for future studies. Majority of empirical studies exclusively tested the influence of board diversity on firm's financial performance. So, there was a need in the future to conduct a study that investigates the connection between the diversity of board and non-financial performance. In addition, most of the previous reviews have methodological defects like employing a cross-sectional method which are restricted in identifying the causal-effect relationship between boardroom diversity and corporate performance. Therefore, future studies should make use of longitudinal methods to handle this matter. Furthermore, a few attempts have been done in the developing countries on the linkage among board diversity; moreover, the performance of firm did not involve a sampling technique, but it largely makes use of case studies. Thus, there was a limitation in their findings in generalizing it to a wider population. Future studies may explore various studies on the importance of this diversity and its influence in several developing contexts. This review may contribute to the corporate governance stream by providing a comprehensive framework of boardroom diversity advantages. Thus, the benefits of the researchers carrying out future studies are aimed to improve corporate governance environment in national and international context. Finally, the model evolved in this study may be useful for academics purpose to repeat this review in various industries and methodologies or even samples.

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Exploring the Tensions in Organizational Theories

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Abstract

Today's organizations cannot survive through the application of old theories which are considered obsolete. However, some of these 'old theories' still maintain their relevance in the operation of businesses today. The complexity and dynamism of the world have introduced more tensions in organizational theories as some of the theories were introduced with the intention of refuting existing theories. Each new theory had its own assumptions, characteristics and hypothetical beliefs which made them attract relevance when they were first introduced because they were assumed to fill an existing gap. This paper explores some of these theories and maintains that the tensions they create is borne out of the battle for superiority when none can actually solve all organizational problems

Keywords: Organizations, Theories, relevance, assumptions, complex, dynamic

Introduction

Organizations can be referred to as goal-directed entities which are structured deliberately and coordinated in such a way that it connects with external environment (Daft & Armstrong, 2007). Aldrich (1979) defined organization as goal-directed, boundary maintaining and socially constituted systems which consists of human activities. From this definition, we can deduce three fundamental dimensions which are; goal oriented boundary maintaining and activity system. As a goal directed system, every organization is a purposive system whereby every member behaves as if there is a goal to be achieved and they work towards such objectives. As a boundary maintaining system, every organizational member can be easily differentiated from non-organizational members, likewise its activities. Thirdly, as an activity system, every organization has its processes of accomplishing work ranging from processing of raw material, people or information. According to

Liu (2007), organizations are combination of mental activities of members who have same goals.

Organizational theory on the other hand is derived from these activities and practices which occur in organizations. It is the study of the function, structure and design of organization (Zhao & Zhang, 2013). Tompkins (2005) is of the opinion that organizational theory is the study of why and how organizations behave the way they do. In other words, organizational theory covers the history, development and thoughts which describe activities going on in organizations. The tension in organizational theory can be deduced from its historical perspective to its current state. According to Scott & Davis, the study of organizations emerged in the 1940s and it has roots which span the existence of humans. Pre-historical clans built stone and dirt monoliths just like Stonehenge and the Mississippi mounds. In 3500B.C, the Egyptians could organize actions of people to build cities and societies. In these early days, workers were able to organize guilds in Rome, Greece and Egypt. The early years also witnessed the Chinese ability to produce over 125,000 tons of iron annually (Mcschane & Von Glinow, 2005). Sun Tzu in 500 BC had also provided means and strategies for conquering and controlling population. They made the world believe that there is a process of planning and organizing before every battle can be won. In the 16th century, Nicolo Machiavelli (1505), proposed how a prime can control his area of jurisdiction. Plato and Aristotle in the 3rd century had also written about persuasive communication towards business and society. However, the late 18th century witnessed the advocacy of Adam Smith towards division of labor in organization. Karl Marx also proposed the workers' paradise strategy as a means to increasing industrialization in western societies. These could be referred to as the ancient history of organizational theories.

However, these historical perspectives was replaced with the classical foundation which also gave birth to scientific management theory by Frederick Taylor, Bureaucratic theory by Max Weber as well as Administrative theory in Henry Fayol. The scientific management tried to maximize efficiency in organization through specialization and standardization. It made use of time and motion studies. Bureaucratic theory is governed by top-down rules and regulations where employees work on strictly defined responsibility to restrained powers.

Administration theory was more focused on the principles of management as well as the five basic elements of management which are planning, organizing, commanding, coordination and control.

The Neo-classical organizational theory led to other theories which began to consider human as resources rather than being assets. This theory was led by Max Weber and his team who conducted Hawthorne studies in the

1920s. Other motivational theories like theory of needs, two-factor theory, ERG theory, etc were also formed in support of human resources.

The contemporary theories have further given birth to several other theories such as the systems theory which believes that all organizations consist of three parts: components, linking process and goal (Bakke, 1959). The contingency theory which was also proposed by Lauren & Lorsch suggested that there is no best theory to direct any enterprise. This is one of the greatest tensions of organizational theories because every theory seems to be right in its own eye but not in all environment (Enyia, 2015). This tension has led to multiples theories which have made the study of organization complex and dynamic in nature.

THE MODERNIST AND SYMBOLIC INTERPRETATIVE PERSPECTIVES IN ANALYSIS ORGANIZATIONAL THEORY TENSIONS

The tensions in organizational theory can be further explained with the analyses of the modernist and symbolic interpretative perspective. According to Hatch (2006) in a summary of the tensions arising from these two perspectives of management, he was of the opinion that modernism believed that organizational theory is gained through the five senses and this can be confirmed through a replication of procedures while the symbolic interpretation perspective believe that these knowledge gained through the five senses cannot be replicated by others. Secondly, the modernist believe that truth is discovered through valid conceptualization and reliable instrument which allows testing of knowledge against an objective while symbolic interpretation believe in interpretivism which states that all knowledge is relative to the knower and can only be understood from the point of view of those involved. Thirdly, modernism perspective believe that when entities operating in a real world is well managed, their decision and actions are driven by norms of rationality, effectiveness and efficiency while symbolic interpretation perspective believes that organizations are continually constructed and re-constructed by members through symbolically mediated interaction. This means that organizations are socially constructed entities. Fourthly, modernism believes that organizations are always in search of universal laws, methods and techniques which favors rational structures, rules, procedures and practices. While symbolic interpretative perspective describes how people give meaning and order to their expression with specific context through symbolic and interpretative acts, forms and processes.

With the introduction of information and communication technology, there has been an increase on the tensions in organizational theory development and implementation because it also requires special skills to work with computer based systems. Today, data can be analyzed with the click

of the button which is quite different from the days when Abacus and mainframe computer were used. The environment we have found ourselves today has also increased the tensions in organizational theories because even the contemporary theories are getting obsolete, hence, the need for more current theories.

Conclusion

Organizational theories have developed from pre-scientific to contemporary era and all these stages have introduced validity as at the point when these theories were propounded. This study have considered the existence of theories as early as the 3500 BC which is against the proposed belief that theories of organizations emerged in the earlier 20th century. The classical era criticized the pre-scientific era because pioneers like Frederick Taylor believed in time and motion studies as a means of achieving efficiency and effectiveness. The story goes on and on as new theories tried to fill in the gaps created by previous theories. Today, these gaps still exist in more complex and dynamic manner which requires current theories to be established.

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Importance of the Use of the Internet of Things and its Implications in the Manufacturing Industry

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Abstract

The research presented in this paper is a literary analysis of 91 papers of 31 different journals of world recognition from different countries (England, Poland, Spain, China, Switzerland, Netherlands); focusing on productivity improvement inside a business through Internet of Things (IoT) in the manufacturing industry. It is essential to know the implications in the use of IoT for productivity improvement because IoT is having great influence in different context, one of them is businesses. The objective of this paper is to know the implications of the use of IoT to increase productivity, focusing on security and data privacy in the manufacturing sector. Suggestions are made regarding big data, digital manufacturing, the supply chain, cybersecurity, and monitoring and control systems for implementing IoT to improve productivity in a manufacturing industry. The use of new tools and technologies for improving productivity imply that the detailed aspects for its implementation must be analyze.

Keywords: Internet of Things, Manufacturing Industry, Productivity

Introduction:

Imagine that in a manufacturing business a problem has occurred many times in the production line, in which a piece is stuck in one of the machines, but thanks to the use of the Internet of Things (IoT) the machine automatically resolves the problem without human intervention. The IoT allows the communication between different devices in order to generate great amounts of data that have the potential of generating new knowledge through different domains (Ryu, Kim, & Yun, 2015). In the business sector, researches are being made regarding the use of IoT; one of them is the use of a framework that

helps in decision making in real time to improve the performance through the supply chain, allowing the increase in incomes and bringing stability (Rezaei, Akbarpour Shirazi & Karimi, 2017).

The IoT brings many benefits to manufacturing companies but there are great concerns regarding data privacy and security because of the storage vulnerabilities that are imply in the use of this technology (Campo, Calatrava, Perandones, Jie & Martinez, 2017). For the above, it is relevant to know the impact of the IoT inside a business environment as a tool for improving productivity.

The problem detected is that there is no certainty in data security or data privacy, although IoT provides great benefits regarding productivity improvement and response time inside a business (D'Outreligne, 2015).

The objective of this papers is to analyze the implications of the use of IoT for productivity improvement in the manufacturing sector, focusing on data security and privacy, through the analysis of relevant material; in order to better understand some of the factors that must be considered when implementing IoT as a tool for improving productivity. A comparative of 90 papers is presented with the findings and suggestions, in order to achieve the research objective.

Implications of data security and data privacy in the use of Internet of Thing

The IoT brings the innovation capacity in processes and products through the use of edge technology. It is suggested to invest in IoT with a focus on the capacity for developing relationships between players in the supply chain. The information to innovation can be achieve through the data collection and dissemination, from the above it is inferred that it is very important to secure the information (Yu, Nguyen & Chen, 2016). Researches are been done regarding an Smart Office, this implies the use of IoT to do the data collection through different devices (Ryu et al., 2015).

The risks in an IoT system are critical and represent many challenges, because the IoT includes characteristics and nonspecific parameters, it has a dynamic nature, it uses diverse hardware, it has global connectivity and a wide access. According to Alkhalil & Ramadan (2017), the principal challenges for IoT are: guarantee the security of the origin data, manage massive information that is produce, indexing origin, multiple data consumers, problems with data transformation during task, flexible tools for querying origin data and interoperability.

The IoT brings the opportunity to create new design with smart devices that allow to improve the health sector. The automation, interconnectivity and sensitive data transfer for this kind of services implies ethic questioning related to privacy and security (Bhattacharya, Wainwright & Whalley, 2017).

To prevent problems related to security, Banerjee, Lee & Choo, (2017), propose a block chain for IoT, using the registers for financial transactions which are codify and maintained for all the users; because of the necessity of the availability of public groups of data and the necessity of sharing secure groups of data.

The design privacy and the introduction of universal principles of usability have the potential of taking IoT to the next phase, as said by O'Connor, Rowan, Lynch & Heavin, (2017); they propose a practical solution that involves eConsent and the use of IoT in health systems. The eConsent refers to the virtual consent that people give regarding the use of their personal information through an online form. The proposed solution consist in the use of the privacy design principles and the universal usability principles to convert the users into partners of the process.

According to Riahi Sfar, Natalizio, Challal & Chtourou, (2017), IoT is a disruptive technology that has the potential to bring an evolution in the way technological ecosystems are being used; the majority of these challenges are based in the vulnerability of the objects inside the IoT and the parity of closeness in the physical world with the virtual world through the use of smart objects. In their work, they present a serie of guidelines that bring more security and privacy in an environment that uses IoT; among them are the standardization and the access permits.

Sahmim & Gharsellaoui (2017), present some solutions for privacy problems, mainly falling on the confidentiality of data, encryption, the dissemination of sensitive data, the use of anonymity, durable policies, platforms of reliable modules, segmentation of data, mediators reliable, identity and access management; and security administration.

The Internet of Things and productivity

The managers of the industries recognize the benefits that the IoT provides, however, only 12% are willing to invest in it. One of the studies analyzed is that carried out by Shea (2015), where 80% of the respondents mentioned that connection technologies help to increase productivity, but also that the technology is not yet mature enough and that the organizations do not have the skills to implement it.

For this reason, methodological approaches have been presented for the preventive maintenance of equipment through the use of the IoT, which allows to improve business productivity through the monitoring of data that reduces losses (Tedeschi, Mehnen, Tapoglou & Roy, 2017). The use of the IoT as part of a circular business model, manages to improve productivity in the industrial washing sector, having savings of almost 30% and reducing water consumption by about 1% (Bressanelli, Perona & Saccani, 2017). Likewise, studies have been carried out regarding automatic learning to manipulate the

information transmitted through the IoT which generates Big Data, characterized by speed in terms of time and location dependence. The key to creating intelligent applications in the IoT is the processing and analysis of Big Data. From the above it is deduced that the manipulation of information is key to improving productivity if the IoT is to be implemented (Mahdavinejad et al., 2017).

Real-time monitoring within the industrial plant, for mass production can reduce losses associated with pauses in the production line. Complemented with the monitoring of contextual information, it can provide intelligent information; to achieve this, it is necessary to use tools in a context that implements the IoT (Pease, Conway & West, 2017). Flexibility in manufacturing, together with mass customization, achieve improved quality and productivity through intelligent manufacturing; the resources to achieve this imply the use of the IoT in such a way that it facilitates the processes of manufacturing and manufacturing in the cloud (Zhong, Xu, Klotz & Newman, 2017).

It is relevant to investigate this issue because the trend in the industrial sphere is globalization and the use of new technologies (such as the IoT) to improve different processes, including productivity (Nolan, 2013).

The Manufacturing Industry

Nowadays, different analyses were done regarding sustainable development in the manufacturing industries. In the analyses made by Singla, Ahuja & Sethi (2017) was indicated that practices regarding corporate strategy, stringent implementation of government regulations and export orientation are necessary for achieving competitiveness. If a company is competitive, it can be inferred that its productivity is efficient.

Also, the Supply Change Management plays a central role in achieving productivity, because it has a significant relationship with competitive advantage. Information technology has a significant relation with competitive advantage (Matthew, 2017). For the above it is imply that IoT is conceivable a key component in achieving a competitive advantage in a manufacturing industry and with this improving productivity.

In developing countries, the manufacturing industries tend to be concentrated in a single area generating a static economy; in contrast with advance economies where the manufacturing industries are more disperse creating a dynamic economy (Avila & Sandoval, 2017). Productivity growth in a manufacturing industry might be measure by technological progress (Shee & Stefanou, 2016).

The Internet of Things in the Manufacturing Industry

If firms are able to manage the delivery mode, this can lead to improve their external operations, cost and waste reductions; making the company more flexible and meeting the clients expectations faster, ultimately achieving a sustainable competitive advantage (Al-Shboul, 2017). Transforming a business conceivably is achieved through technology innovation. Processes are being innovated more than products (Baragde & Baporikar, 2017). The success of IoT systems depends on the consumer perception of its usefulness, ease of use, and privacy risk (Dong, Chang, Wang & Yan, 2017).

IoT technologies can be used to develop and enhance performance measurement systems, as the one propose by Dweekat, Hwang, & Park, (2017) for supply chain performance measurement. Industry 4.0 through IoT can enable automated material handling, digitalized reporting and quality transactions in a manufacturing industry (Graney, 2017).

Metamodels for the integration of the IoT in a manufacturing industry are being proposed, such as the one presented by Rodríguez & Triana, (2017) where three layers were considered for its implementation, giving ground for more work regarding data security and system reliability. Also, exploratory studies for the innovation and sustainable growth in Small and Medium Size Enterprises (SMEs) using IoT enhanced the structure and process related capabilities (Shin, 2017).

Methodology:

The scope of the research is qualitative and quantitative due to the nature of it, in order to understand the implications that come to have within a company for the implementation of the IoT. It was decided to carry out an exploratory investigation based on the Okoli methodology displayed in Figure 1. The design of the research is transactional, since the papers are compared to understand their relationship in terms of the implications in the use of the IoT in productivity in the last 5 years (2014 – 2018).

According to Segal (2015), the transition to the IoT implies having an infrastructure that supports it, with cloud-based services, with updated systems and with connections to third parties through this platform. So for this research it is assumed that these elements are already available.

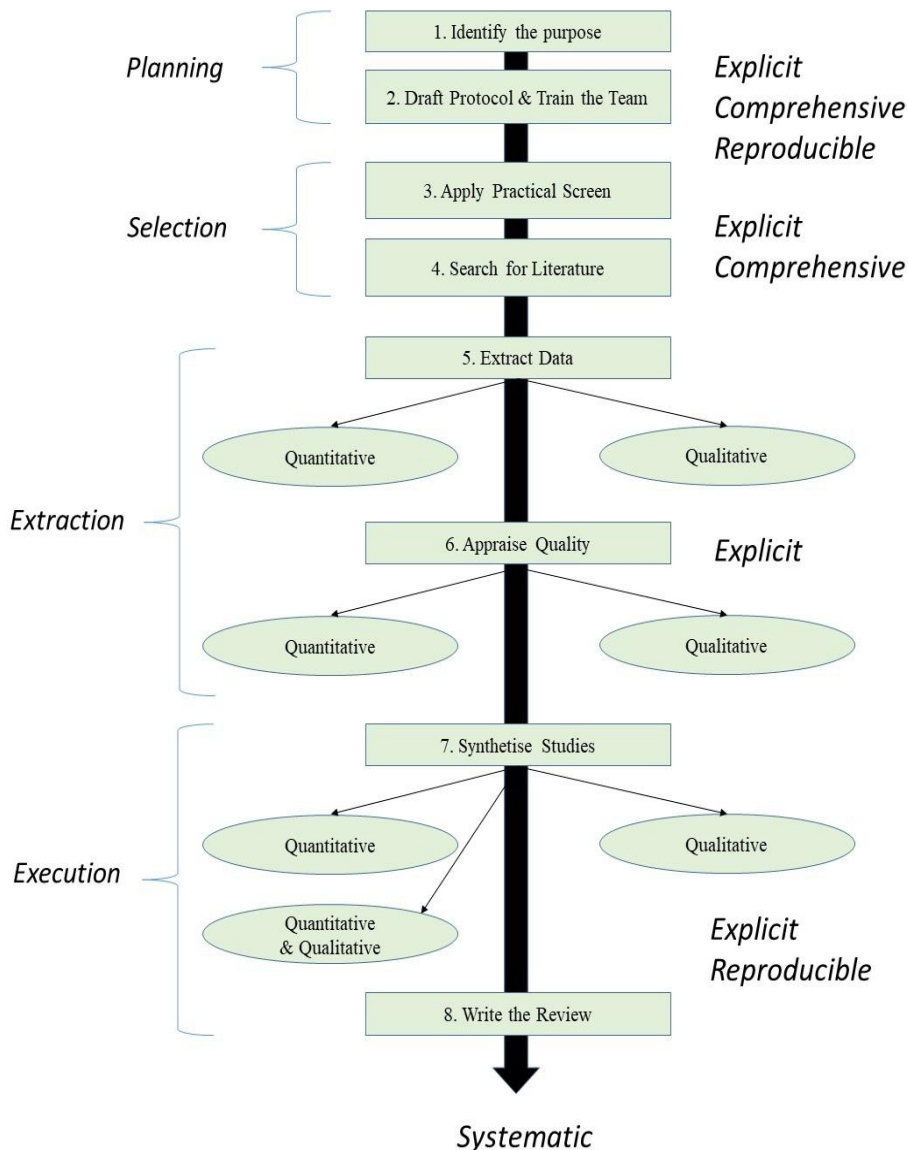


Figure 1. Okoli methodology.
Source: Okoli, 2015.

The empirical study based on cases, has been used as the main research method in this work since the review of the literature shows the case-type study, as a sampling technique that is used in qualitative and quantitative research (Hernández, 2010). Likewise, a protocol was used for the systematic review of the literature displayed in Table 1, based on recently published works according to the methodology of Okoli (2015):

No	Journal Name	Papers
1	Applied Energy	1
2	Business Process Management Journal	4
3	CIRP Annals - Manufacturing Technology	1
4	Computer Law and Security Review	1
5	Digital Communications and Networks	1
6	Digital Policy, Regulation and Governance	1
7	Engineering 3	1
8	Frontiers of Mechanical Engineering	1
9	Industrial Management & Data Systems	1
10	International Journal of Advanced Manufacturing Technology	1
11	International Journal of Operations & Production Management	1
12	International Journal of Production Economics	1
13	International Journal of Public Leadership	1
14	International Society for Cellular Therapy	1
15	Internet Research	2
16	Journal of Industrial Engineering and Management	1
17	Journal of Information, Communication and Ethics in Society	1
18	Journal of Knowledge Management	2
19	Journal of Network and Computer Applications	1
20	LogForum Scietific Journal of Logistics	2
21	Procedia CIRP	27
22	Procedia Computer Science	5
23	Procedia Engineering	4
24	Procedia Manufacturing	21
25	Procedia Technology	1
26	PSU Research Review: An International Journal	1
27	She Ji: The Journal of Design, Economics, and Innovation	1
28	Strategy & Leadership	2
29	Supply Chain Management: An International Journal	1
30	International Journal of Logistics Management	1
31	TQM Journal	1

Table 1. Journals used in the review.

Source: Own elaboration, 2018.

Discussion of results

Following the methodology of Okoli (2017), the process of obtaining results begins:

Phase I:

Corresponding to planning; for the research it was decided to use the keywords “IoT AND manufacturing AND productivity”; selected from the

topics of interest from the last five years (2014 – 2018) published papers in international journals, related to technology, information sciences and telecommunications, and with the manufacturing industry; from different countries (Figure 2):

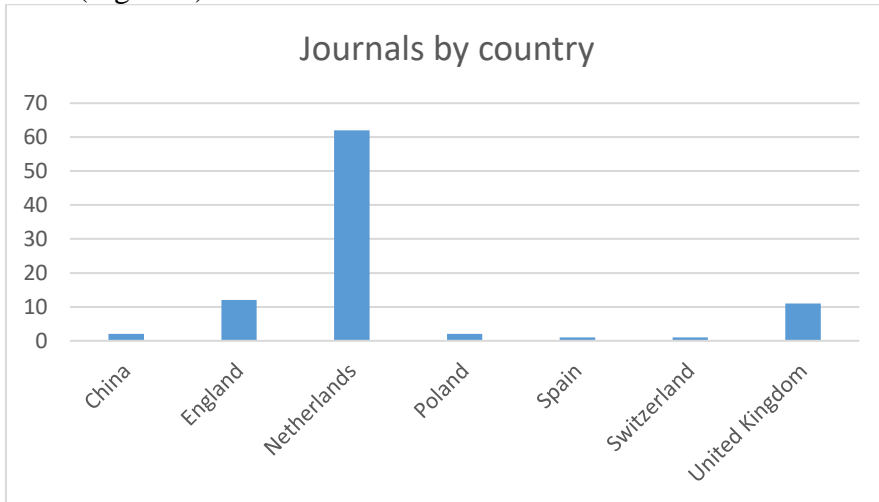


Figure 2. Journals by country used in the review.
Source: Own elaboration, 2018.

Phase II:

For the selection process, it was decided to use a total of 91 articles from 31 different journals focusing in the relation to the topic of interest, in order to have a diverse sample; valued in terms of their relevance and relationship with the issues of IoT, productivity, security, privacy, and the manufacturing industry.

Phase III:

An increasing polynomial tendency was found (Figure 3) with respect to published papers from 2014 to 2018; being that in 2014 only three articles related to the topics of interest (IoT, productivity, privacy and data security) was found in the research, while in 2018, six articles were published until March from those studied in the sample:

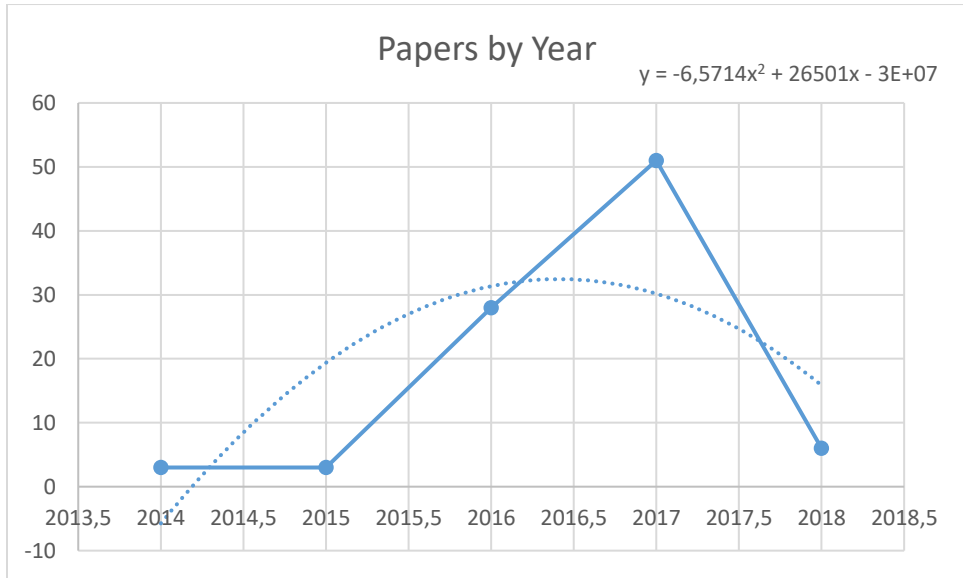


Figure 3. Papers by year use in the review.
Source: Own elaboration, 2018.

Phase IV:

In 88 of the analyzed papers, IoT was used to improve productivity in a manufacturing industry through the use of tools such as big data (9), proposed frameworks (4), industry 4.0 (5), control systems (2), cyber physical systems (3), innovation (5) and monitoring (5).

In the sample of 91 papers, some of the aspects considered in the implementation of IoT in a manufacturing industry are: additive manufacturing (4), business models (2), cloud manufacturing (2), cyber physical systems (4), digital manufacturing (5) and the supply chain (6). Only in 2 of the 91 papers the human factor is considered. By reviewing the 91 papers, the aim is to provide an objective approach that allows entrepreneurs and stakeholders to know some of the factors that should be considered when using IoT to improve productivity in a manufacturing industry.

Regarding security, in 39 of the papers it is mentioned, considering aspects such as: cloud security (4), cybersecurity (15), encryption (2), monitoring (5) and legal measures (3). Only in 13 of the 91 papers, privacy is mentioned; some of the aspects considered to protect the data privacy are: architecture, protocols, cybersecurity, guidelines, regulations and the legal system.

Conclusion:

According to the analysis, it is suggested to take into account the following aspects if when considering using IoT to improve productivity within a manufacturing industry:

1. Big data: the IoT involves the handling of large amounts of data, it is suggested to consider Big Data together with Business Analytics to store, organize, distribute and manage information for decision making.
2. Digital manufacturing: it allows to reduce the time scale and manage efficiently the entire product lifecycle, providing flexibility in designing and styling products.
3. Supply chain: it is essential to take into account the supply chain in order to improve productivity using new tools and technologies such as IoT in a manufacturing industry.
4. Cybersecurity: in order to protect the data from unauthorized access it is necessary to implement technologies, processes and practices that secure the information used in connected systems such as IoT.
5. Monitoring and control systems: it is important to monitor the devices connected to the IoT, in order to know their status, through the use of sensors; likewise, it is recommended to automate some of the tasks to take better advantage of the IoT environment.

Based on the papers analysis, it is concluded that the objective of the research was achieved, because an overview of the implications of using IoT to improve productivity within a manufacturing industry was proposed; including some of the tools and technologies that can be used to achieve it; likewise, some of the aspects to be taken into account for the handling of the information, with an special focus on the privacy and the security of the data.

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An Assessment of the Impact of Business Plan Competitions on Enterprise Development in Kenya: A Case Study of Chora Bizna Enablis LaunchPad

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Abstract

The purpose of the study was to establish the impact of business plan competitions (BPCs) on enterprise development as measured by number of new ventures created and sustained, number and value of jobs created, revenue turnover growth and value of assets. The BPC was dubbed “Chora Bizna Enablis LaunchPad”. The study used a quasi-experimental design. The target population was the top 100 national finalists who undertook a one week intensive training at Multimedia University. The accessible population was 52 finalists, of which 45 successfully responded. This number was used as the test group. A matched sample of non-participants was drawn from small business owners in Nairobi County. Data was analysed using SPSS. The results revealed that out of the 45 national finalists interviewed, 35 went ahead to implement their business plans, creating employment for 210 people who earned a total monthly salary of over 4 million Kenya shillings. Their enterprises were posting an aggregate of 13.8 million Kenya shillings in revenue every month, and the entrepreneurs reported an accumulated value of assets estimated at a total of 518 million Kenya shillings. On average, each participant in the BPC employed more than twice the number of employees reported by non-participants and disbursed nearly double the average total monthly salaries reported by non-participants. Similarly, the average revenue of BPC participants quadrupled that of non-participants. BPC participants also reported significantly higher average value of accumulated assets compared to non-participants. Therefore, such competitions are effective for fostering enterprise development and more should be held.

Keywords: Enterprise Development, Human Capital, Social Capital, Economic Capital

Introduction

The fostering of enterprise development through business plan competitions (BPCs) is generating a lot of interest from both practitioners and the academia alike. Enterprise development in this context is understood as “the intervention in the free market economic system for the purpose of assisting entrepreneurs in creating and growing successful new businesses” (Durr & Hill, 2006, p.214). Existing statistics claim that three out of five startup businesses close shop within a few months of operation (Bowen, Morara, & Mureithi, 2009), a problem which is partly attributed to lack of a business plan (Gachiri, 2009). This suggests that small enterprise owners need training in a number of entrepreneurial skills to create and manage sustainable business ventures. According to Russell, Atchison and Brooks (2008), BPCs comprise a series of structured workshops offered within the calendar of the competition aimed at complementing contestants’ disciplinary knowledge in order to assist them acquire the basic skills to develop a business plan from the initial bright idea to a fully developed document that maps and validates the path of the idea to its launch and running of the business. BPCs as a concept for fostering enterprise development through such workshops, is therefore increasingly demanding the attention of, and becoming recognized and promoted by public policy makers (Libecap, 2009), the private sector (London, Hart, & Kacou, 2011), Non-Governmental Organizations (Stevenson, 2010) and institutions of higher education (Organization for Economic Cooperation and Development, 2010; Zhang & Zhang, 2011).

Business Plan Competitions as a practice is ubiquitous in most developed countries such as the USA (Crainer & Dearlove, 2000) and Europe (Riviezzo, De Nisco, & Napolitano, 2012), and is fast proliferating within developing nations in Asia (Wong, 2011) and Africa (House-Soremekun & Falola, 2011). A Google search conducted by Lange, Mollov, Pearlmutter, Singh and Bygrave (2007) showed that there were 1.86 million hits for “business plan” and “competition” or “competitions”, implying the extent of its proliferation globally. In countries such as China, BPCs are considered as an effective new way of obtaining practical knowledge compared to sitting and listening to professors in the old education system (Fayolle, 2004); and in some states in the USA, there are even prison entrepreneurship programs that provide in-prison BPCs targeting in-mates (Jaishankar, 2009).

In Kenya, interventions for the purposes of assisting entrepreneurs have taken on an unprecedented interest by stakeholders in the education, government and private sectors in recent years. To foster an entrepreneurship culture, ministries such as the then Youth Affairs and Industrialization, currently Ministry of Public Service, Youth and Gender Affairs, teamed up with bodies like the World Bank to rekindle interest in business plan writing which is seen as the anchor of business success (Gachiri, 2009). The then

Ministry of Youth Affairs (MOYAS) had been spearheading the implementation of several youth policies and programs dealing with issues such as entrepreneurship, employment, training and education (Njogu, 2013). Of all the programs, the entrepreneurship component received more attention and support which culminated into the broadening of focus to include training and mentoring, business incubation and holding a BPC (Njogu, 2013).

The 2009 Kenya National Business Plan Competition dubbed “ChoraBizna Enablis LaunchPad” which was the focus of this study had two phases. The first Phase included the launch to create awareness and training workshops which took place countrywide across 16 towns. Following the training workshops, each participant then had to hand in a business plan which was judged by business leaders and entrepreneurship consultants in search of the top business plans in terms of innovativeness, originality, sustainability and growth potential (Were, 2009). In the second phase, the entrants who were ranked top 100 National Finalists underwent another three days of training in Nairobi hosted at the Multimedia University of Kenya (Were, 2009). Winners in this competition took away an estimated 6 million shillings in cash and prizes (Enablis Entrepreneurial Network East Africa, 2013). Clearly, BPCs often involve millions of money in organization and awards. However, despite the expenditure of colossal amounts of time and money in their planning and execution, it is not clear from existing literature whether the investment in BPCs translate into enterprise development which is the primary reason for such competitions.

A review of literature suggests that there is a paucity of research that attempt to determine the impact that BPCs have on entrepreneurship and enterprise development, and the few published studies return mixed results. For example, Russell et al.'s (2008) case study of the MI50K Entrepreneurship Competition, a popular BPC program in the USA, reported that the impact of its competition included: the birth of over 60 companies with an aggregate value of \$10.5 billion dollars, which generated 1,800 jobs and received \$175 million dollars in Venture Capital funding. On the other hand, in their research on the efficiency and effectiveness of BPCs, Fayolle and Klandt (2006) concluded that with some training, many people could probably write a credible business plan, although only a few could probably build a business. They found that business plans with better evaluation scores were not significantly more likely to correspond to successful businesses.

The inconsistent results from past studies seem to fuel controversial advice in existing entrepreneurship literature (Rosseau, 2012). For example, while its proponents such as Leadbeater and Oakley (2001) think that writing business plans should become a national pastime, cynics like Gumpert (2003) advises people to burn their business plans altogether. Therefore, without compelling empirical evidence, universities, NGOs, government agencies and

the private sector will continue to participate in activities and events whose value for money remain questionable. In Kenya, there is a shortage of research that has been documented on the impact of BPC on enterprise development. A similar study in Kenya was conducted by Letting and Muthoni (2013) whose research focused on the effects of business planning in the sustainability of the Micro, Small and Medium Enterprises based on the case of a BPC conducted by Kenya Institute of Management. Although their findings established that those entrepreneurs who had business plans had sustainable businesses, this relationship was not supported by statistical evidence, thus providing a study gap.

Research Objectives

The study sought to achieve the following objectives:

- i) Assess the impact of human capital development aspect of business plan competitions on enterprise development in Kenya.
- ii) Assess the impact of social capital creation through participation in business plan competitions on enterprise development in Kenya.
- iii) Evaluate the impact of economic capital offered in business plan competitions on enterprise development in Kenya.

Literature Review

Scholarly literature on the concept of BPC is propagated from the theoretical lenses of human capital, economic capital and social capital frameworks.

The term human capital has been defined as “the propensity of a person or group to perform behavior that is valued from an income earning perspective by an organization or society” (Smith-Hunter, 2006 p. 31). According to Hulsink and Dons (2008), human capital is a well-established concept in economic literature concerning entrepreneurship. Within the context of BPCs, human capital developments is characterized by the impartation of business plan writing skills, pitching and presentation skills and the enhancement of self-confidence.

An empirical study conducted by Etemad (2004) showed that many people who prepare for and compete in BPCs go on to start their own new ventures, regardless of whether they win the competition or not. In contrast, a study of entrepreneurship education in Asia conducted by Kelley and Thomas (2011) established that most business plans disappear after the competition. The authors provided several reasons for this. First, the plans may not be practical in real life, in the opinion of the judges. Secondly, although the entrants may do the marketing research and analysis, their ideas exist only in their imaginations, with little evidence that they can be supported from the perspective of actual business practice or experience. They also postulated that

the plans were still far from showing evidence that they would succeed in business and investors also did not think it was reasonable to invest large amounts of money in pure concept projects as indicated in their respective business plans. The literature on the benefits of business plan writing showed that research is not conclusive on the added human capital value of business plan writing as a skill.

Another skill learnt in a BPC is how to pitch your business. According to Kaputa (2012), the business pitch is what makes your business unique, special and needed; one that you use with clients, investors, the media, and employees, describing the essence of what your business is all about. In concert, Wankel (2010) argues that if you are good at an business pitch – a concise way of describing what your company does (Schwerdtfeger, 2011), you will be very well prepared to pitch your business convincingly at a moment's notice. Wankel (2010) opined that with practice, one would probably also do well in a BPC, which is one way that entrepreneurs find seed capital to get started. As former director and judge of a BPC, Rabb (2009) realized that judges did not rate the viability of the business model but the ability of the contestant to advocate for her venture in clear, substantive, and compelling ways. Russell et al. (2008) however held the view that a difficult component for participants is in understanding the knowledge gap between their idea and a judge's or the market's view of a business plan. However, in a curious study reported by Ramsinghani (2011), which studied nonverbal cues such as gestures, expressions and tone, it was predicted with 87 percent accuracy the person who would win a BPC without the judges having read the plans or heard pitches.

Etemad (2004) postulated that the intense and in-depth process of preparing a business plan for competition should enhance participants' perceptions that their venture is highly feasible, and that they possess the requisite entrepreneurial skills to launch the venture. The author links this argument to his study which established a strong correlation between students' perceived capability for new venture success and their experience in BPCs. In the context of starting a new venture, the results of the study indicated that developing a business plan, and having it evaluated by experienced outsiders, is an extremely valuable tool for entrepreneurship students in creating and stimulating an attitude for success.

Unlike human capital, there is no universal definition of social capital. However, the accepted concept around which interest in social capital has developed is that interpersonal relationships matter and provide value to individuals and groups (Bartkus & Davis, 2010). According to Choo and Bontis (2002), social capital includes the sum of actual and potential resources and assets embedded within, available through, derived from and mobilized in the network of relationship possessed by an individual. Most scholars keep the

concept simple by defining it as the resources or goodwill that subsists in relationships (Bali, 2005; Bartkus & Davis, 2010; Boivie, 2008).

In BPCs, social capital includes access to business mentors, access to professional services and free publicity. This is construed from the argument fronted by Tan (2011) that the best way to learn how to be an entrepreneur is to work at the right hand of a successful one. BPCs are designed to bring people together for the purpose of creating a context in which an idea might be developed and tested in a supportive and non-threatening environment (Russell et al., 2008). The professionals involved in a BPC usually consist of a few venture capitalists who give participants excellent guidance on the finer details of a business plan (Hazelgren & Covello, 2005). Whether the actual relationship is one of coaching or mentoring, it is clear that the ‘mentoring’ programmes in BPCs provide participants with a range of benefits, which include industry expertise, industry networks, a knowledgeable sounding board, advice and provision of feedback and role models – all of which would otherwise be unavailable to the entrepreneur (Russell et al., 2008). In the 2009 Kenya National BPC for instance, the finalists were to become members of Enablis Entrepreneurial Network, helping them to enjoy social capital benefits such as mentoring, training and financing opportunities from the network (Mbogo, 2009). Often BPCs add professional services from lawyers, accountants and other advisors as part of the package (Cohan, 2012). According to Strauss (2011), winners in various categories in a BPC might also receive administrative support, incubator space, ongoing business coaching, and legal and other services. Beyond that, the contacts they make often also prove invaluable. In some countries, winners of BPCs manage to rake in \$40,000 worth of services (Bygrave & Zacharakis, 2011).

The prospects of raising economic capital is the primary motivation for many contestants in a BPC. Economic capital is defined as capital comprising of fiscal and material wealth that is immediately and directly convertible into money (Bartee & Brown, 2007). In BPCs, this often manifests in the form of cash awards or cash equivalents and access to potential financiers. In some countries, scholars report testimonies of entrants to BPCs that attracted over a quarter of a million dollars in seed capital (Hewitt, Hewitt, & D’Abie, 2005). A quick survey of BPCs shows that every year in the United States there are more than 230 BPCs with more than \$9.5 million awarded to winners of these competitions (Katz, 2012). However, it is not clear from previous studies whether such cash awards translate into enterprise growth. For instance, Lange et al. (2007) in their research claimed that they even knew of students and alums that almost made a career of competing in BPCs; where in one case, the entrepreneur won more than \$100,000 in at least four BPCs, but four years after the company was founded it had no significant revenue.

Since judges are typically venture capitalists, a business plan victory signals a stamp of approval that can give company founders an edge when it comes to raising additional capital (Cohan, 2012). Features common to large BPCs include significant corporate sponsorship (Russell et al., 2008). Winners also enjoy free press that help them create awareness about their business. Kantis (2005) suggests that publicity campaigns that accompany BPCs including press conferences, launch events, the printing of pamphlets and other promotional materials, interviews with the media and other activities, have economic value. Strauss (2011) observes that winners in various categories in a BPC get a lot of great press. Entrepreneurs get more respect and goodwill from the business community at large (Abrahms & Abrams, 2003). The competition, the prizes and the resultant publicity provide the motivation context for the participants (Russell et al., 2008).

Research Methodology

A quasi experimental research design was used. In order to assess the impact of BPCs on enterprise development, the study compared enterprise development outcomes between the test group and a control group. The target group was the top 100 national finalists who undertook an intensive training at Multimedia University. The test group was the top 100 national finalists who implemented their business plans. The control group was made up of small business owners in Nairobi County who did not participate in the competition thus did not benefit from the BPC. Differences in study groups were controlled using participant matching whereby the respondents' socio-demographic variables such as education, gender and entrepreneurial experience were used as the criteria for matching. A questionnaire method was then used to collect data. The reliability of the instrument was verified through computation of Cronbach's Alpha. The instrument had a Cronbach's alpha of 8.84, suggesting that the instrument was reliable. The instrument was administered through telephone interviews, email and face-to-face approach after four years had elapsed since the competition was conducted. Data analysis entailed descriptive statistical techniques which include the computation of the frequencies, mean and standard deviation of the datasets. The relationship between the dependent and independent variables were determined using Spearman's Rank Correlation Coefficient. The data was analysed using SPSS.

Results and Discussions

Table 1 shows the demographic composition of respondents in the test group (that is, the top 100 national finalists). The researcher made an attempt to collect data from all the top 100 finalists. However, the researcher managed to access 52 finalists. A total of 87% of the accessible population responded,

meaning that the response rate was high. The table shows that 71.1% of the respondents were male whereas 28.9%. Therefore, majority of the top one-hundred finalists who participated in this study were male. In terms of education at the time of the competition, 48.9% of the respondents were university graduates, 37.8% attained middle level college education and 13.3% attained secondary level of education. Most (62.2%) of respondents presented their business plans as sole proprietors, followed by 20% limited companies and 17.8% partnerships.

In terms of whether BPC finalists had prior experience running an enterprise at the time of the competition, 60.0% said yes and 20.0% said no. Therefore, majority of the respondents had prior experience running a business. However, 80% of the respondents reported that they did not win a prize whereas only 20% did win a prize. The table shows that 77.8% of the respondents implemented their business plans while 22.2% did not. It was noted that out of the respondents who started their business, eight (28.6%) of them either implemented a business plan for an entirely new business idea after the exposure they got from the competition or had since shifted into other business sectors.

Table 1 further shows that 34.3% of the respondents implemented their business plan in the year 2009, 31.4% of the respondents did so in the year 2010 and 25.7% of the respondents executed their business plans in the year 2011. Only 5.7% and 2.9% of the respondents started their businesses in the year 2012 and 2013, respectively. Therefore, on aggregate, majority (65.8%) of the businesses had been in existence for at least three years. Out of the respondents who implemented their business plans, 80.0% said that their businesses still existed whereas 20.0% had closed shop. Therefore, majority of the enterprises that were started as a result of the business plan competition were still operational at the time of the study.

Table 1 Demographic Profile of the Top 100 Finalists

Variable	Category	Frequency	Percent
Gender	Male	32	71.1
	Female	13	28.9
Highest level of education at the time of competition	Secondary education	6	13.3
	Middle level college	17	37.8
	University education	22	48.9
Type of venture	New Venture	34	75.6
	Continuing Venture	11	24.4
Form of ownership	Sole proprietorship	28	62.2
	Partnership	8	17.8
	Limited Company	9	20.0
Prior experience running an enterprise at the time of competition	Yes	27	60.0
	No	18	40.0
Whether respondent won a prize	Yes	7	20.0

	No	28	80.0
Whether respondent implemented business plan	Yes	35	77.8
	No	10	22.2
Year respondent implemented business plan	2009	12	34.3
	2010	11	31.4
	2011	9	25.7
	2012	2	5.7
	2013	1	2.9
Status of business	Existing	28	80.0
	Closed	7	20.0

Table 2 shows the descriptive statistics of respondents in the control group. The table shows that male respondents accounted for 60% of the sample in the control group while female respondents were 40%. Nearly half (48.6%) of the respondents attained middle level of education with some 25.7% being university graduates. However, another 25.7% of the respondents attained secondary education. Similarly, 54.3% were running sole proprietorships, 34.3% were partnerships and 11.4% were limited companies. However, 77.1% of the respondents in the control group did not have a written business plan whereas 22.9% were running their businesses based on a written business plan. In terms of year they started business, 31.4% and 37.1% of the respondents began their businesses in the year 2009 and 2010 respectively. Some 13.3% of the respondents started their business in the year 2011 and another 14.3% began business in the year 2012. Lastly, 11.4% of the respondents began business in the year 2013.

Table 2 Demographic Profile of the Control Group

Variable	Category	Frequency	Percent
Gender	Male	21	60.0
	Female	14	40.0
Highest level of education at the time of competition	Secondary education	9	25.7
	Middle level college	17	48.6
	University education	9	25.7
Form of ownership	Sole proprietorship	19	54.3
	Partnership	12	34.3
	Limited Company	4	11.4
Prior experience doing business before starting the enterprise	Yes	26	74.3
	No	9	25.7
Have a written business plan	Yes	8	22.9
	No	27	77.1
Year started business	2009	11	31.4
	2010	13	37.1
	2011	5	14.3
	2012	4	11.4
	2013	2	5.7

Table 3 above shows the descriptive statistics on the business performance of respondents in the top 100 national finalist in the year 2009 business plan competition who implemented their business plans based on four key performance indicators. These are: number of employees, total monthly salaries disbursed and estimated total value of assets of the business. The table shows that in sum, the number of employees at start up was 97, earning a total monthly salary of Ksh.911,000. Over a 4 year period, the total employment had more than doubled to 210, with a total salary of over 4 million shillings disbursed every month. The table also shows that at start up, the total monthly revenue generated by the enterprises of the top 100 national finalists was about 11 million shillings. After four years, the businesses were posting an aggregate of 13.8 million shillings in revenue every month. In terms of total value of assets, the top 100 national finalists started up with just over 2.6 million shillings whereas after the four years, the entrepreneurs reported an estimated aggregate value of assets worth 518 million shillings.

Table 4 also above shows the findings on the performance of enterprises in the control group. For accurate comparison, the business performance of 35 respondents in the control group was represented in the dataset. The table shows that the total number of employees the respondents in the control group started with was 53, earning a total monthly salary of Ksh.883,000. At the time of this study, the number of employees had increased to 91 and the monthly salary disbursement had risen to 3.2 million. In terms of monthly revenue performance, respondents in the control group were posting 1.1 million and at the time of the study, the figure had more than quadrupled to 4.8 million shillings. In total, the respondents estimated the value of their assets at 7.7 million shillings at start up, whereas by the time of the study, they had accumulated 23.6 million worth of business assets.

The study sought to establish whether there was any relationship between BPC variables such as business plan writing skills, pitching and presentation skills, mentorship, networking, increased confidence, publicity and exposure, BPC prize and access to financiers and enterprise growth. Spearman Correlation coefficient was used to determine this relationship, with alpha significant at .05 and .01 levels. Table 5 shows that there was a statistically significant correlation between enterprise growth and: business plan writing skills gained ($r=.407, p<.05$); mentorship received ($r=.404, p<.05$); network created ($r=.417, p<.05$) and increase in confidence ($r=.513, p<.01$). However, the relationship between enterprise growth and presentation skills ($r=.282, p>.05$) as well as access to financiers ($r=.123, p>.05$) was not statistically significant. The findings suggest that generally, there was a relationship between enterprise growth and PBCs.

Table 3 Business Performance of the top 100 National Finalists

	Number of staff at Start up	Number of staff after 4 years	Total Monthly Salaries at Startup (Ksh)	Total Monthly Salaries after 4 year (Ksh)	Average Monthly Revenue at Startup (Ksh)	Average Monthly Revenue after 4 years (Ksh)	Estimated total value of assets at startup (Ksh)	Estimated total value of assets after 4 years (Ksh)
Mean	3	7	33,740	159,462	464,791	576,416	105,480	20,724,200
SD	4	7	34,569	311,504	2,031,462	2,011,495	118,525	81,475,938
Min	1	1	0	7,000	0	30,000	0	0
Max	20	32	150,000	1,360,000	10,000,000	10,000,000	500,000	400,000,000
Sum	97	210	911,000	4,305,500	11,155,000	13,834,000	2,637,000	518,105,000

Table 4 Business Performance of Enterprises in the Control Group

	Number of Employees at Start up	Number of Employees Currently	Total Monthly Salaries at Start up (Ksh)	Total Monthly Salaries Currently (Ksh)	Average Monthly Revenue at Start-up (Ksh)	Average Monthly Revenue Currently (Ksh)	Estimated total value of assets at start up (Ksh)	Estimated total value of assets currently (Ksh)
Mean	2	3	25,228	91,937	32,345	137,498	219,051	673,157
SD	1	3	20,602	117,959	35,232	195,636	544,468	1,778,617
Min	1	1	5,000	6,500	6,000	6,900	1,500	3,000
Max	4	13	90,000	540,000	180,000	760,500	2,600,000	8,500,000
Sum	53	91	883,000	3,217,800	1,132,100	4,812,450	7,666,800	23,560,500

Table 5 Correlation between BPC Variables and Enterprise Growth

Year 2009 BPC variables	Spearman's Rho	Enterprise growth
1 Business plan writing skills	Correlation Coefficient	.407(*)
	Sig. (2-tailed)	.015
	N	35
2 Pitching and presentation skills	Correlation Coefficient	.282
	Sig. (2-tailed)	.101
	N	35
3 Mentorship	Correlation Coefficient	.404(*)
	Sig. (2-tailed)	.016
	N	35
4 Networking	Correlation Coefficient	.417(*)
	Sig. (2-tailed)	.013
	N	35
5 Increased confidence	Correlation Coefficient	.513(**)
	Sig. (2-tailed)	.002
	N	35
6 Publicity and exposure	Correlation Coefficient	.594(**)
	Sig. (2-tailed)	.000
	N	35
7 Access to financiers	Correlation Coefficient	.123
	Sig. (2-tailed)	.488
	N	35

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Discussions

Characteristic of all BPCs obviously is human capital development due to training in various aspects of the planning phase of a new and/or expanding business venture. This training is intended at least to lead to the creation and growth of successful new businesses, where success is partly measured by staying in business. The findings of this study showed that due to their participation in the BPC, nearly all of the respondents agreed that they acquired valuable skills and experience while writing their business plans which they continued to apply in their businesses. The results agree with Russell et al.'s (2008) findings in their study of the impact of BPCs in Australia where they established that the competitions have the potential to, among others, enhance the education experience of the participants by developing entrepreneurial skills. A raft of these skills have been previously identified by scholars such as Skogen and Sjøvoll (2010) who argued that the educational content in BPCs expose participants to the process from general idea to business idea, and an array of other business skills including market mapping and analysis, economic understanding, the use of various resources

and sources of capital, risk assessment, marketing and market planning, competition, customer service, ethical issues, organization and formal rules connected with establishing and running a business.

The results of this study showed that on average, each participant in the 2009 Kenya national BPC represented in this study employed more than twice the number of employees reported by non-participants, disbursed nearly double the average total monthly salaries disbursed by non-participants, generated average monthly sales revenue that quadrupled the average sales revenue reported by non-participants, and accumulated assets worth several times the value of assets accumulated by non-participants. In many ways, these findings consolidate the importance of a business plan as a planning tool and a roadmap to success as argued by many scholars including Fiore (2005), Skogen and Sjovoll (2010) and Barrow (2011). The findings however contradicts the results of a study by Lange et al. (2007) which found that writing a business plan before a business began operating made no difference to the subsequent revenue, net income and number of employees. While reasons for this may call for further empirical enquiry, perhaps the dynamics of enterprise development varied beyond the factors considered in this study.

Networking is one of the most common advantages mentioned by both scholars and industry practitioners as the business case for promoting BPCs as noted in the works of Hewitt et al. (2005), Landstrom et al. (2008) and Strauss (2011). In this study, majority of the participants in the 2009 Kenya National BPC who implemented their business plans agreed that their participation in the competition enabled them to network with various experts who offered them the professional services they would not have received otherwise. This finding reflects the concept of social capital as a valid theoretical paradigm, rightly situated in what Hauberer (2010) construed as a relationship immanent capital that provides useful support when it is needed. This study found that networking as a variable had the second highest correlation coefficient in terms of its relationship with enterprise growth, thereby, further confirming the validity of social capital theory. Clearly, social capital is important to economic growth seen by its proponents like Hohmann and Welter (2005) as an informal institution that serves as a new production factor. That the relationship between networking and enterprise growth was statistically significant is consistent with a past empirical study reported by Etemad and Wright (2003) which also found strong support for social capital theory as being one of the important factors for business success.

The crucial role played by social capital is resonated by additional findings which showed that most of the participants in the 2009 Kenya National BPC would like individual mentoring as well as follow up of each individual participant to see how they are fairing on after the competition. This finding underscores the perspective of Tan (2011) who argued that company-

building is not an innate ability and as such, the best way to learn how to be an entrepreneur is to work at the right hand of a successful one. According to Hazelgren and Covello (2005), the professionals involved in a BPC usually consist of a few venture capitalists who give participants excellent guidance on the finer details of a business plan. It can thus correctly be inferred, in harmony with the observations of Russell et al. (2008), that BPCs are designed to bring people together for the purpose of creating a context in which an idea might be developed and tested in a supportive and non-threatening environment.

This study also established that majority of the respondents agreed that the goodwill, publicity and exposure they gained from the competition enabled them to get customers and expand their business contacts. This agrees with Abrahams and Abrahams' (2003) observation that entrepreneurs get more respect and understanding from the business community at large. For instance, one of the respondents in this study revealed that the very fact that he emerged among the top 100 national finalists and having been awarded a certificate made him to secure support from a local politician in his county who later replicated his business concept to a group of youth in the County. BPCs therefore stimulate the acquisition of social capital in very unique ways whose multiplier effects on enterprise development and economic growth can be far reaching.

Conclusion

Business plan competitions help develop the human capital needed by entrepreneurs to create and manage successful enterprises whose performance exceeds the performance of the average enterprise. Participants acquire advanced enterprise development skills and experience during the process of writing their business plans which is unavailable to non-participants. This is because they are trained by industry experts who are themselves successful entrepreneurs and professionals in their respective fields and business sectors. By the end of such competitions, participants step out into the marketplace with the competence and confidence needed to launch and run a successful business. The exposure they get builds on their entrepreneurial self-efficacy, energizing and challenging them to execute business ideas with impressive results evident, among others, by the number of enterprises created and sustained, the number of jobs created, income generated and assets accumulated.

The social capital created by business plan competitions also translates into tangible bottom-line results to participants. The competition enables participants to network with various experts who offer them free professional services they would not otherwise afford. This makes the potential in the social capital available to participants in business plan competitions a uniquely

valuable production factor that contributes to business success. Through mentorship in the course of the competition, participants access heterogeneous knowledge domains that otherwise would be unavailable. Armed with this knowledge, the entrepreneurs have a significant head-start over non-participants. For example, the goodwill, publicity and exposure they gain from the competition enable them to get customers and rapidly expand their business contacts as they get more respect and understanding from the business community at large.

The potential access to economic capital plays an insignificant role in enterprise development outcome of BPCs as most participants hardly get funded if at all. This may be the case because of three reasons. Firstly, little follow up that can lead to the exploitation of this potential is made by organizers and participants alike. This is potentially attributable in part to the discouragement that participants who do not win a prize experience. Secondly, it is common knowledge that formal financial institutions often impose stringent requirements that most start-ups are unable to satisfy. Thirdly, the cost of making follow ups due to the logistics of travelling and physical communication from far flung areas to chase for funding is a potential barrier to participants, most of whom lack the financial wherewithal.

In a nutshell, the value for money invested in BPCs is quite evident from the study. The managerial and policy implication is that a basis is provided for justifying future resource allocation and further continuance of BPCs across the country. The practical application of this research rests in the development of a BPC model that adapts and improves on the framework used by ChoraBizna Enablis LaunchPad.

In terms of theory development, the study provides empirical proof for human capital and social capital theories but not economic capital dimensions as important antecedents to enterprise development. It is nevertheless argued here that BPC prizes are important incentives without which, such events would lose their attractiveness.

Given the compelling enterprise development dividends accruing from BPCs to participants and the society, more such competitions should be held. Increasing the frequency, quality, quantity and scope of the competitions is a worthwhile investment towards empowering a nation. Future studies should test the efficacy of BPCs for enterprise development as a tool for empowering among people with disabilities.

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Oil Consumption in Transport and Economic Growth Nexus: Empirical Evidence from Cameroon

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Abstract

This paper focuses on casting light on the causal relationship between oil consumption in transport and economic growth in Cameroon. This paper uses an annual data covering the period 1975-2014, which is a five-step modern time series techniques. They include the Unit root tests, co-integration analysis, and Granger-causality based on error correction model. As a robustness test, we made use of the impulse response function and variance decomposition to portray the correlations between variables. The main result highlighted in the present paper point out the presence of a long-run equilibrium relationship between oil consumption in transport and economic growth. The error correction model shows that an estimated 1% increase in economic growth causes a rise in oil consumption in transport by 1.29 % in the long run. Another results show that there exists bidirectional causality in the long-run relationship and there was no causality in the short-run relationship at the 5% level of significance. The decomposition of the variance and impulse response function indicates a dissymmetric of the variance of the prediction error and the dynamic properties of the system. This study provides a basis for the discussion of energy consumption in transport policies in order to maintain a sustainable economic growth in Cameroon.

Keywords: Oil consumption in transport, Economic growth, Co-integration, Causality, impulse response function, decomposition of variance

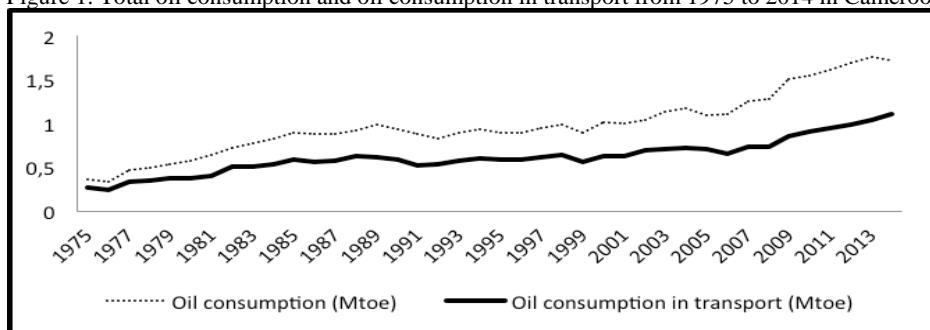
1. Introduction

Energy consumption is the foundation of the modern industrial economy, which greatly contributes to human and economic development. It has been the backbone for almost all economic activities for decades. The crucial role played by energy as a key driver of economic activities is well

documented in available literature. Among the determinants of consumption, GDP is the main explanatory factor. Indeed, energy is necessary for the production and consumption of all the goods and services in industry and services. It is also essential in both countries, particularly in African countries, and Cameroon is not an exception.

Observing the evolution of the total oil consumption in Cameroon over the period 1975-2014, transport represents an average of 63% of the total consumption. Therefore, this demonstrates the importance of the transport sector.

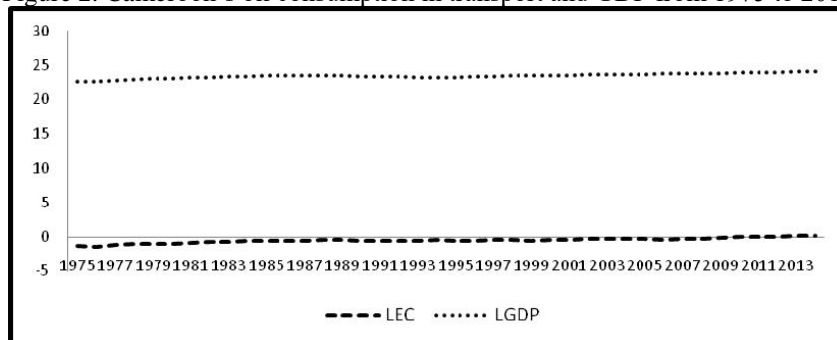
Figure 1. Total oil consumption and oil consumption in transport from 1975 to 2014 in Cameroon



Source: Authors from IEA database

However, the transport sector heavily depends on energy. In the world today, the transportation sector represents 20% of total energy used in 2011 (US Energy Information Administration (EIA), 2015). It is the second sector after the industrial sector in regards to energy consumption. According to the IEA outlook world, energy consumption grows with the global economy. The success of the transport sector is highly dependent upon the level of energy in the economy. In fact, the transport sector can be seen as the largest user of energy in the economy (Reddy et al., 2001; Samimi, 1995). The consumption of energy is likely to grow up further due to economic growth, population growth, rapid industrialization, urbanization, and agricultural modernization (Ramanathan & Parikh, 1999).

Figure 2. Cameroon's oil consumption in transport and GDP from 1975 to 2014

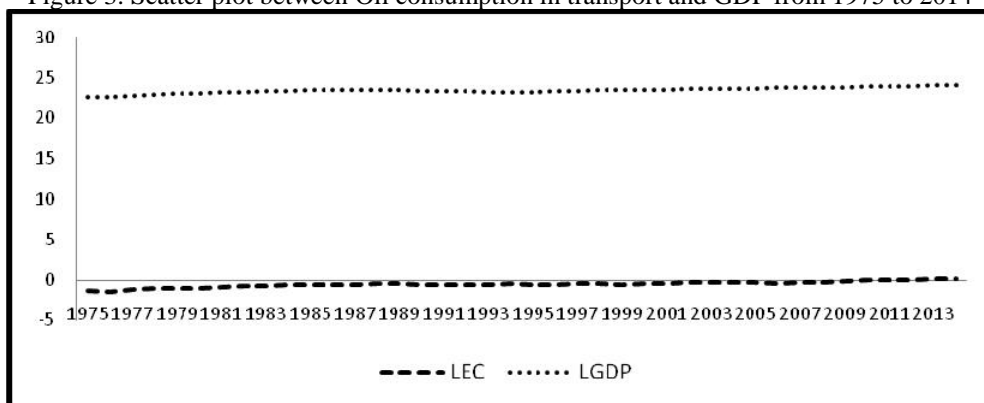


Source: Authors from IEA database and WDI database

Figure 2 above shows the evolution of oil consumption in transport and the economic growth of Cameroon from 1975 to 2014. We can observe that these two variables show similar long-run trends characterized by upward trends, with slopes of 0.0248 for the logarithm of GDP and 0.0271 for the logarithm of oil consumption in transport. Also, there is an equilibrium relationship or plausible co-integration between these two series.

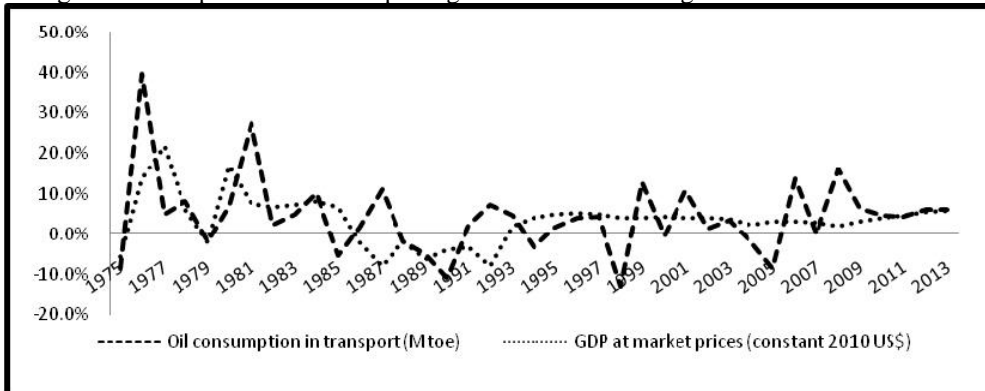
Moreover, statistical analysis confirms a strong positive correlation between oil consumption in transport and GDP (Figure 3). This correlation is not perfect, and the points on the graph do not completely align with the fitting line. However, the scatter plot is fairly flat, with the adjustment coefficient of 92.18%. Furthermore, a joint analysis of the growth rates of oil consumption in transport and GDP growth shows that the two variables evolve in synchronism (Figure 4). Thus, Figure 4 shows three distinct periods. The first was from 1975-1985, which corresponds to the period when fluctuations of greater amplitudes were recorded. They are positive. Also, the fluctuations in the growth of oil consumption in transport are broader than those of economic growth. During the second period of 1986-1994, the fluctuations are smaller, with the particularity of being relatively negative, especially those of GDP. During the third period, 1995-2014, GDP fluctuations are positive but very flat compared to the consumption of oil in transport. This analysis may suggest that economic growth is responding to fluctuations in oil consumption in transport and vice versa. As a result, it is important to know whether oil consumption in transport cause economic growth or whether economic growth leads to more oil consumption.

Figure 3. Scatter plot between Oil consumption in transport and GDP from 1975 to 2014



Source: Authors from IAE and WDI database

Figure 4. Transport’s oil consumption growth rate and GDP growth from 1975 to 2014



Source: Authors from IAE and WDI database

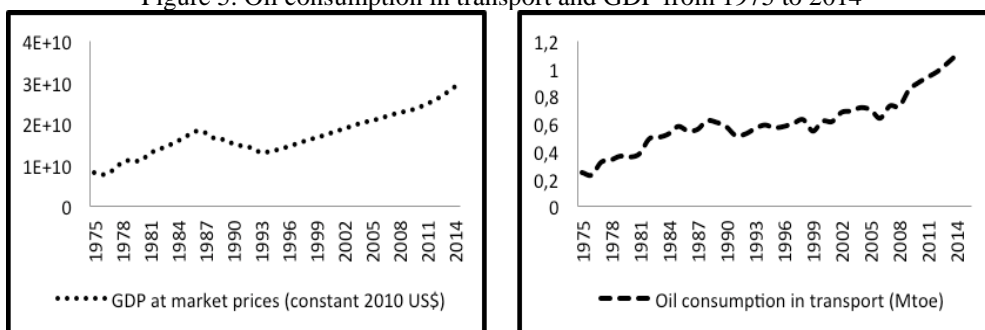
Therefore, **is there any causality relationship between oil consumption in transport and economic growth in Cameroon?** Specifically, does oil consumption in transport cause economic growth or do economic growth leads to more oil consumption? If it exists, is the causality unidirectional or bidirectional? However, answering these questions can help us to clearly understand the role of transportation’s oil consumption in Cameroon’s growth, which is meaningful for improving Cameroon’s oil polices and promoting long-run growth.

The aim of this study is to demonstrate the causal empirical relationship between oil consumption in transport and economic growth in Cameroon. The paper analyzes a possible presence of a long-run equilibrium relationship between oil consumption in transport and economic growth. Compared to previous studies in this country, the essential contribution of this work is the identification of the response functions to shocks between oil consumption in transport and economic activity. Hence, this provides us with a basis for discussing oil consumption in transport policies in order to maintain a sustainable economic growth in Cameroon.

The remainder of this paper is organized as follows: Section 2 gives an overview of the Cameroon’s oil consumption in transport and economic development; Section 3 provides a brief literature review on causality studies related to oil consumption and economic growth by presenting the theoretical role of transport in the economy. In Section 4, the methodology adopted in the study is presented. The data is described in Section 5.

2. Overview of the Cameroon's Oil Consumption in Transport and Economic Development

Figure 5. Oil consumption in transport and GDP from 1975 to 2014



Source: Authors from IAE database and WDI database

Between 1975 and 2014, oil consumption in transport in Cameroon have quadrupled (+334%). It rose from 0.252 million tons of oil equivalent (Mtoe) to 1.0944 Mtoe. This is the combination of population growth and transport infrastructure update. GDP over the same period tripled (+265%). It rose from nearly 7.873 billion US dollars to nearly 28.770 billion US dollars. There were three main phases in this development. During the first phase from 1975 to 1986, the country recorded one of its best performances with an average growth rate of 8%. This phase coincides with the discovery and exploitation of oil. During the second phase from 1987 to 1993, Cameroon experienced an irregular evolution with a low level of economic activity, with an average growth rate of -4.7%. This phase corresponds to the crisis of 1987 following the oil counter-shock of 1986. As from 1988, the Structural Adjustment Plans applied until 2003. The third phase from 1994 to 2014 was marked by the resumption of economic activity with an average growth rate of + 3.9%. This period was after the devaluation of the 1994 CFA franc and the end of the adjustments in 2006.

The volume of oil consumption in transport depends on the level of infrastructure. Cameroon's road infrastructure consists of over 52,000 kilometers divided into two networks: priority and non-priority. Cameroon priority roadways are not in good condition. A preliminary analysis has shown that out of the 11,120 kilometers of priority roads, only 250 kilometers are in a good state. In other words, only 2.2 % of the total is in good condition, while 45% of the primary network is in an average or bad condition. It is important to note that 65 % of Cameroon paved roads are more than 25 years old and the work carried out to date has been insufficient to maintain the quality of the network, which unfortunately has continued to degrade (Ministry of Public Works information system). Road transport accounts for more than 95% of petroleum products for the transport sector

(12% of final energy consumption). Super is only used in road transport at a rate of 59% against 41% for diesel. Apart from road transport, shipping and rail transport consume diesel in proportions of 1% and 2%, respectively. Air transport consumes only jet A1, at a rate of 2%.

Cameroon's road network is the transport backbone for Central Africa and the government has put in place a development strategy that should enable the country to create a reliable and efficient integrated infrastructure that will boost economic growth and foster sub-regional integration.

The doubling of paved roads is part of the activity of the National Council of Roads (Conaroute), which was set up in May 2005. Its mission is to facilitate the elaboration and implementation of national road policy by bringing together the elements from the public and private sector that uses Cameroon's roadways. Prospects are good for attaining this goal given that the authorities are determined to provide the country with good quality roads. From 2004-2011, the state has invested over US\$481 million, which represent an expenditure of US\$ 59.2 million a year. More than 14,000 kilometers of rural roads are in the process of rehabilitation, and we are also carrying out the progressive paving of rural roads and moderate traffic at a cost of US\$ 41.67 million. At the same time, over 900 kilometers of paved roads have been rehabilitated at a cost of US\$ 501.24 million, and another 1,500 km of roads have been paved at a total cost of US\$ 1.97 billion.

Cameroon has 1,008 km of railways, narrow gauge and single-tracked line. The railway runs from the north of Cameroon to the country's economic capital, Yaoundé, and continuously extends to the west coast, the major Douala port of export.

At present, Cameroon railway system is carried out by 61 locomotives, 1,354 freight wagons and 76 passenger coaches. Freight transport comprises 90% of the rail network utilization (predominantly petroleum products, wood products and containerized traffic), which makes up approximately 1.8 million tons transport movement and about 1 million passengers transported a year. The rail network comprises of 5 major lines and serves as a vital means of economic and transport linkage between the north and south. Due to the road network, there is less development of the rail network in the north territory. Despite the fact that the main railway line between Yaounde and Douala is considered to be functioning effectively, the passenger traffic remains very few due to lots of uncontrolled competitions by many road hauliers which provide faster, more often, and eventually more attractive cost services.

3. Literature Review

The empirical literature provides mixed and conflicting evidence with respect to the energy consumption-growth nexus. The result of the discrepancy is largely due to the use of different econometric methods and time periods, besides country-specific heterogeneity in climate conditions, economic development, and energy consumption patterns, among other things. From a methodological perspective, four generations of contributions can be identified. First generation studies applied a traditional vector autoregression (VAR) model based on the tradition of Sims (1972). For example, the seminar work of Kraft and Kraft (1978), using a VAR model, found evidence in favor of causality running from income to energy consumption in the United States for the period 1947-1974. Further, studies of the first generation examined the direction of causality assuming stationarity of the underlying variables (Erol & Yu, 1987; Yu & Choi, 1985; Abosedra & Baghestani, 1989).

Second generation studies accounted for non-stationarity in the data and performed co-integration analysis to investigate the long-run relationship between energy consumption and growth. This second generation literature, based on the Engle and Granger (1987) two-step procedure, studied pairs of variables to check for co-integration relationships and used estimated error-correction models to test for Granger causality (Nachane et al., 1988; Cheng & Lai, 1997; Glasure & Lee, 1998). Third generation studies used multivariate estimators based on the style of Johansen (1991). Johansen's multi-variate approach also allows for more than two variables in the cointegration relationship (Masih & Masih, 1997; Stern, 2000; Asafu-Adjaye, 2000; Soytas & Sari, 2003; Oh & Lee, 2004). Finally, fourth generation studies employ recently developed panel-econometric methods to test for unit roots and co-integration relations. This literature estimates panel-based error-correction models to perform Granger causality tests (Lee, 2005; Al-Iriani, 2006; Mahadevan & Asafu-Adjaye, 2007; Lee & Chang, 2007, 2008; Apergis & Payne, 2009; Lee & Lee, 2010; Costantini & Martini, 2010).

Some selected studies and their empirical setups are summarized in Table 1. Most of the studies dealing with the energy consumption-growth nexus focus on production side models, which often include capital stock and labour in addition to energy consumption and GDP. If one concentrates on energy demand, trivariate models with energy prices as an additional variable should be used (see Oh and Lee, 2004b). The studies by Masih and Masih (1998), Asafu-Adjaye (2000), Fatai et al. (2004) as well as Mahadevan and Asafu-Adjaye (2007) took the consumer price index (CPI) as a proxy of the energy price. However, as the CPI is known not to capture the energy price very well, we employ the real energy price index, such as

that opined by Lee and Lee (2010) and Costantini and Martini (2010). Masih and Masih (1997) and Asafu-Adjaye (2000) previously used the vector error-correction model (VECM); Fatai et al. (2004) applied the autoregressive distributed lag (ARDL) approach; and Mahadevan and Asafu-Adjaye (2000), Lee and Lee (2010) as well as Costantini and Martini (2010) used a panel vector error-correction specification for the trivariate model.

Subsequently, few studies analyzed the relationship between energy consumption and economic growth in Cameroon. For example, Tamba et al. (2012) examined the causal relationship between diesel consumption and economic growth in Cameroon. Also, empirical results of the study confirm the presence of a long-run equilibrium relationship between diesel consumption and economic growth. The error correction model shows that an estimated 1% increase in economic growth causes a rise in diesel consumption of 1.30% in the long-run. The overall results show that there exists bidirectional causality in the long-run relationship and no causality exists in the short-run relationship between diesel consumption and economic growth at the 5% level of significance.

Table 1. Overview of selected studies

Study	Method	Countries	Results
Kraft and Kraft (1978)	Bivar. Sims	USA	Growth → Energy
Yu and Choi (1985)	Causality Bivar; Granger test	South Korea Philippines	Growth → Energy Energy → Growth
Erol and Yu (1987)	Bivar. Granger test	USA	Energy → Growth
Yu and Jin (1992)	Bivar. Granger test	USA	Energy → Growth
Masih and Masih (1996)	Trivar. VECM	Malaysia, Singapore & Philippines India	Energy → Growth Energy ↔ Growth
Glasure and Lee (1998)	Bivar. VECM	Indonesia Pakistan	Energy → Growth Growth →
Masih and Masih (1998)	Trivar. VECM	South Korea & Singapore	Energy Growth → Energy
Asafu-Adjaye (2000)	Trivar. VECM	Sri Lanka & Thailand India & Indonesia	Energy ↔ Growth
Hondroyannis et al. (2002)	Trivar. VECM	Thailand & Philippines	Energy → Growth
Soytas and Sari (2003)	Bivar. VECM	Greece	Energy → Growth
Fatai et al. (2004)	Bivar. VECM Bivar. Toda and Yamamoto (1995)	Argentina South Korea Indonesia & Poland Canada, USA & UK Turkey Indonesia & India Thailand & Philippines South Korea Shanghai	Energy ↔ Growth Energy ↔ Growth Energy ↔ Growth Energy ↔ Growth Energy ↔ Growth Energy ↔ Growth
Oh and Lee (2004b)	Trivar. VECM	South Korea	Energy ↔ Growth
Wolde-Rufael (2004)	Bivar. Toda and Yamamoto (1995)	Shanghai	Energy ↔ Growth
Lee (2005)	Trivar. Panel VECM)	18 developing nations	Growth ↔ Energy
Al-Iriani (2006)	Trivar. Panel VECM)	18 developing nations	Energy ↔ Growth

Lee and Chang (2008a)	Bivar. Panel VECM Multiv. Panel VECM	Gulf Cooperation C. 16 Asian countries	Energy↔Growth
Lee et al. (2008)	Trivar. Panel VECM	22 OECD countries	Energy↔Growth
Narayan and Smyth (2008)	Multiv. Panel VECM	G7 countries	Energy↔Growth
Apergis and Payne (2009a)	Multiv. Panel VECM	11 countries of the Commonwealth of Independent States	Energy→Growth
Apergis and Payne (2009b)	Multiv. Panel VECM	6 Central American countries	Energy↔Growth
Lee and Lee (2010)	Multiv. Panel VECM	25 OECD countries	

Notes: X→Y means variable X Granger-causes variable

4. Methodology

Using economic theory to describe the relation between the variables couldn't offer the strict definition for dynamic relation between the variables frequently. Besides, endogenous variables may also appear on both sides of an equation, which make the estimation and inference complicated. To solve these problems, we will use a vector error to analyze energy consumption and economic growth in Cameroon. This approach will be a five-step modern time series techniques: Unit root tests, co-integration analysis, and Granger-causality based on error correction model. We also use impulse response function and variance decomposition to portray the correlations between variables.

Step 1: Unit Root Tests

The first step involves applying unit root tests. According to Engle and Granger (1987), the series x and y of a non-stationary linear combination with the same order of integration may be stationary. The Augmented Dickey-Fuller test (ADF) will be used to identify the presence of unit root in series. Here, we will try to test the null hypothesis that a time series is $I(1)$ against the alternative that it is $I(0)$, assuming that the dynamics in the data have an ARMA structure. Therefore, the ADF test is based on the least squares estimation of three models (Mata, 2007):

$$\Delta x_t = (\rho - 1)x_{t-1} + \sum_{j=2}^k \varphi_j \Delta x_{t-j+1} + \varepsilon_t \quad [1]$$

$$\Delta x_t = (\rho - 1)x_{t-1} + \sum_{j=2}^k \varphi_j \Delta x_{t-j+1} + \gamma + \varepsilon_t \quad [2]$$

$$\Delta x_t = (\rho - 1)x_{t-1} + \sum_{j=2}^k \varphi_j \Delta x_{t-j+1} + \gamma + \beta t + \varepsilon_t \quad [3]$$

Where D is the difference operator, k is the auto-regressive lag length, g is a constant, b is a coefficient on a time trend, and r is a coefficient of interest. When these series are found to be non-stationary, we take the first difference and we apply the ADF tests again on the differenced data and so on.

Step 2: Johansen Co-integration Tests

The second step involves examining co-integration relationship among the variables using vector autoregressive (VAR) approach of Johansen (1991, 1988). The analysis of the co-integration clearly identifies the number of long-run equilibrium relationships between integrated variables of the same order. Two sets x and y are called co-integrated if they are assigned a stochastic trend of the same order of integration and/ or some linear combination of them has a lower order of integration. This test uses two statistics: statistics of the trace and the maximum eigenvalue. The asymptotic distributions of these statistics are non-standard.

Step 3: Granger-Causality Test

The third step involves building Granger-causality tests within an error correction term. At the theoretical level, co-integration implies the existence of Granger-causality between two variables. It can indicate the direction on the causality relationship. This causal relationship can be analyzed using the Granger causality test, which is based on the vector error correction model (VECM).

According to the Granger representation theorem, any co-integrated system implies the existence of an error correction mechanism that prevents the variable to deviate from their long-run equilibrium. In our case, if the three variables studied, namely: growth of GDP per capita, the logarithm of infrastructure transport, and the logarithm of energy consumption, are co-integrated, we deduce that there is an error correction mechanism.

The error correction model is a particular form of autoregressive distributed lag model (ARDL). It can be interpreted in this context as a fit model. Like the adjustment model, the coefficient of error is only relevant when it is significant and between -1 and 0.

Step 4: Impulse Response Function

The generalized impulse response functions trace out responsiveness of the dependent variables in the VAR to shocks to each of the variables. For each variable from each equation separately, a unit shock is applied to the error, and the effects upon the VAR system over time are noted (Brooks, 2002).

Step 5: Variance Decomposition

Variance decomposition gives the proportion of the movements in the dependent variables that are due to their “own” shocks, versus shocks to the other variables.

5. Data Description

This paper makes use of an annual data covering the period 1975-2014. We selected the current US dollar gross domestic product (GDP) of Cameroon in millions dollars as an indicator which measures the total economic growth. Also, it uses oil consumption in transport (EC) in millions tons of oil equivalent (Mtoe) as indicator which measures the consumption of energy in transport. GDP is adjusted at 2010’s constant price according to the indices of gross domestic product. Also, GDP and EC came respectively from the World Bank indicators and International Energy Agency database from 1975 to 2014. All data are processed by logarithm (respectively LGDP for logarithm of gross domestic product and LEC for logarithm of Oil consumption of energy in transport) in order to maintain the stability of data and correct heteroscedasticity. Table 2 below presents descriptive statistics for the samples.

Table 2. Descriptive statistics over 1975-2014

Variables	LEC	LGDP
Mean	-0.556283	23.49474
Median	-0.538493	23.49596
Maximum	0.090206	24.08261
Minimum	-1.467938	22.73019
Std. Dev.	0.347251	0.323155
Skewness	-0.607226	-0.409413
Kurtosis	3.533697	2.917575
Jarque-Bera	2.932878	1.128785
Probability	0.230746	0.568706
Sum	-22.25132	939.7894
Sum Sq. Dev.	4.702738	4.072749
Observations	40	40

6. Empirical Results

6.1. Results of Unit Root Tests

The table below presents the results of unit root test on logarithmic transformation of the levels and first differences of GDP and Oil consumption series. According to Augmented Dickey Fuller test, the null hypothesis tested in Model 3 (constant with trend) on the two series, LGDP and LEC, cannot be rejected at the % level of significance. The trend coefficient is not rejected for LGDP and LEC series. So, we test the lagged endogenous variable coefficient. We found out that they are not rejected for the two series. Finally, Model 3 was retained by the unit root test for the two series. Stationarity is obtained by running the similar test on the first difference of the variables. This indicates that the LGDP and LEC variables are individually integrated of order one. Phillips perron and KPSS confirms that results.

Table 3. Unit Root Test

Variable	Augmented Dickey Fuller (ADF)			Phillips Perron (PP)			Kwiatkowski Phillips Schmidt Shin (KPSS)	
	Model 1 : None	Model 2 : Constant	Model 3 : Constant with Trend	Model 1 : None	Model 2 : Constant t	Model 3 : Constant with Trend	Model 2 : Constant t	Model 3 : Constant with Trend
LGDP	2.256 (1)	-2.206 (1)	-2.088 (2)	2.440 [4]	-1.319 [4]	-2.047 [4]	0.679*** [5]	0.086*** [5]
LEC	- (0)	-1.565 (0)	-2.545 (0)	- [3]	-1.582 [3]	-2.466 [1]	0.718*** [5]	0.123*** [4]
D(LGDP)	- (0)	- (0)	-4.047** (0)	- [2]	- [3]	- [3]	0.127*** [4]	0.118*** [4]
D(LEC)	- (0)	- (0)	- (0)	- [3]	- [1]	- [1]	0.194*** [3]	0.162*** [4]

Note: ***,**, * respectively denotes significant at 1%, 5% and 10% significance level. The figure in parenthesis () represents optimum lag length selected based on Akaike Info Criterion. The figure in bracket [] represents the Bandwidth used in the Phillips Perron and KPSS test selected based on Newey-West Bandwidth criterion.

6.2. Results of Cointegration Tests

After testing if the variables are stationary at first order, the next step is to estimate the VECM. Firstly, we need to select an optimum lag of VECM before performing the Johansen Cointegration test. As shown in table 4, 5 and 6, we checked the autocorrelation of the error terms in each regression by using the White heteroscedasticity test, the autocorrelation test,

and the normality test. We concluded for joint test that error terms is free from autocorrelation problem.

Table 4. VEC Residual White Heteroscedasticity Test

Chi-sq	df	Prob.
36.85151	36	0.4293

Table 5. VEC Residual Serial correlation LM

Lags	LM-Stat	Prob
1	9.101781	0.0586
2	5.437321	0.2453
3	4.621265	0.3284
4	0.988135	0.9116
5	5.720645	0.2210
6	2.674226	0.6137
7	2.343522	0.6729
8	2.775150	0.5961
9	3.093410	0.5423
10	1.850112	0.7633
11	1.140267	0.8878
12	4.711506	0.3182

Probs from chi-square with 4 df.

Table 6. VEC Residual Normality Tests

Component	Skewness	Chi-sq	df	Prob.
1	1.143506	8.063565	1	0.0045
2	-0.608807	2.285650	1	0.1306
Joint		10.34922	2	0.0057
Component	Kurtosis	Chi-sq	df	Prob.
1	7.678219	33.74050	1	0.0000
2	2.990516	0.000139	1	0.9906
Joint		33.74064	2	0.0000
Component	Jarque-Bera	df	Prob.	
1	41.80407	2	0.0000	
2	2.285789	2	0.3189	
Joint	44.08986	4	0.0000	

Figure 6. Correlogram of Residual Test
Autocorrelations with 2 Std.Err. Bounds

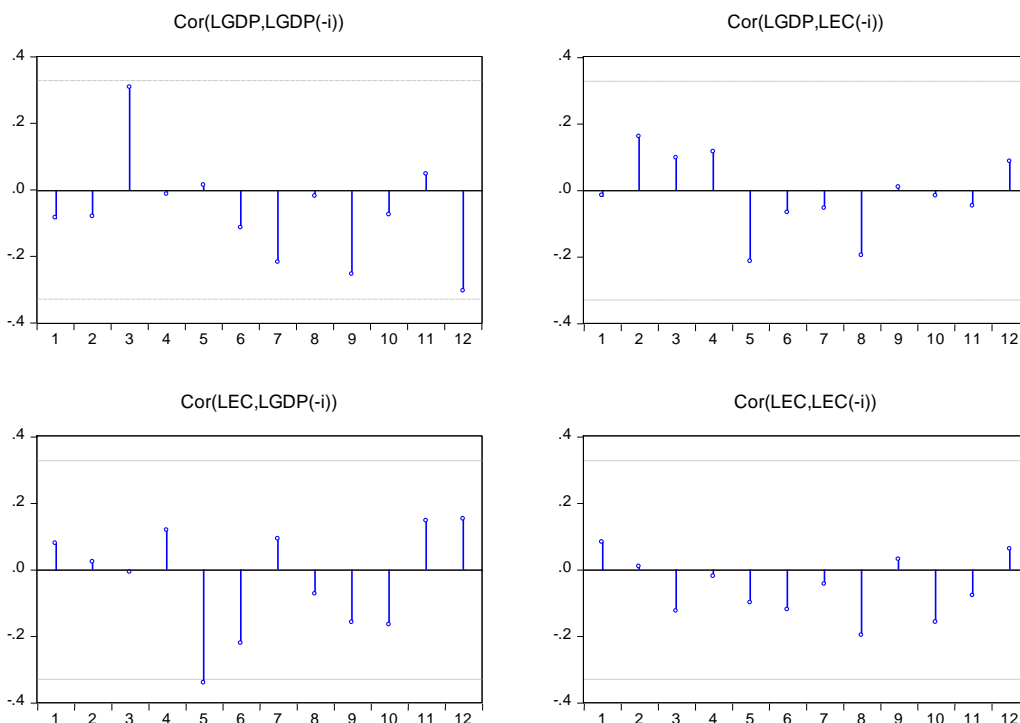


Table 7. Number of cointegration

Trace test	Eigenvalue	Statistic	5% Critical Value
None	0.215591	14.22345	18.39771
At most 1*	0.132026	5.238942*	3.841466
Maximum eigenvalue test	Eigenvalue	Statistic	5% Critical Value
None	0.215591	8.984510	17.14769
At most 1*	0.132026	5.238942*	3.841466

Note: * denotes rejection of the hypothesis at the 0.05 level

Table 7 presents the Johansen cointegration test. The result shows that both trace test and Max Eigen test are statistically significant to reject the null hypothesis of $r \leq 1$ at 5% significance level. Therefore, only one long run cointegration relationship exists between LGDP and LEC.

Table 8 reveals that the coefficient associated with the restoring force is negative (1.29) and significantly different from zero at the statistical threshold of 5% (student's t is greater than the tabulated value). There is therefore an error-correcting mechanism. This mechanism indicates the convergence of the trajectories of LGDP series towards the long-term target. Thus, the shocks on gross domestic product in Cameroon are corrected to 1.29% by feedback effect. In other words, the long run equation revealed

that an estimated 1% increase in economic growth causes a rise in oil consumption in transport of 1.29% at the 5% level. We found the same results as opined by Tamba et al. (2012). According to their work, they used diesel consumption while we used energy consumption in transport. It is therefore obvious that similar results will be obtained if we consider diesel as the fuel mostly used in transport in Cameroon. To provide arguments for our analysis, we plan to construct an impulse response function and a decomposition of the variance.

Table 8. Estimate of Vector error correction model
Standard errors in () & t-statistics in [] and D is first difference and one lag value (-1)

CointegratingEq:	CointEq1	
LGDP(-1)	1.000000	
LEC(-1)	-1.299662 (0.28875) [-4.50099]	
@TREND(75)	0.008417	
C	-24.38019	
Error Correction:	D(LGDP)	D(LEC)
CointEq1	0.010769 (0.09280) [0.11605]	0.374872 (0.13078) [2.86634]
D(LGDP(-1))	0.446531 (0.19082) [2.34009]	0.248264 (0.26893) [0.92316]
D(LGDP(-2))	-0.134111 (0.16183) [-0.82874]	-0.352077 (0.22807) [-1.54374]
D(LEC(-1))	0.209917 (0.11310) [1.85597]	0.043804 (0.15940) [0.27480]
D(LEC(-2))	0.058749 (0.10565) [0.55609]	0.058521 (0.14889) [0.39304]
C	0.007114 (0.01991) [0.35735]	0.031260 (0.02806) [1.11417]

@TREND(75)	0.000189 (0.00074) [0.25407]	2.24E-05 (0.00105) [0.02138]
R-squared	0.394231	0.335970
Adj. R-squared	0.273077	0.203164
Sum sq. resids	0.065003	0.129111
S.E. equation	0.046548	0.065603
F-statistic	3.253969	2.529778
Log likelihood	64.86778	52.17223
Akaike AIC	-3.127988	-2.441742
Schwarz SC	-2.823220	-2.136974
Mean dependent	0.033072	0.033065
S.D. dependent	0.054596	0.073491

6.3. Results of Granger-causality Test

We can reject the hypothesis that LEC does not Granger cause LGDP. The p value is less than 5%. We also can reject the hypothesis that LGDP does not Granger cause LEC. Thus, the p value is less than 10%. Therefore, it appears that Granger causality runs two-way from LGDP to LEC and not the other way. Table 9 shows that there exists a bidirectional causality in long-run relationship and there is no causality in the short-run relationship at the 5% level of significance. However, Table 10 shows that there is no relationship between LGDP and LEC in the short term. The Wald test is not significant. As a result, the p value is more than 10%.

Table 9. Pairwise Granger Causality test

Null Hypothesis	Obs	F-Statistic	Prob.
LEC does not Granger Cause LGDP	35	3.56196	0.0150**
LGDP does not Granger Cause LEC		2.11005	0.0991*

Note: ***, **, * denotes respectively 1%; 5% and 10% significance level

Table 10. VEC Granger Causality/Block Exogeneity Wald Test

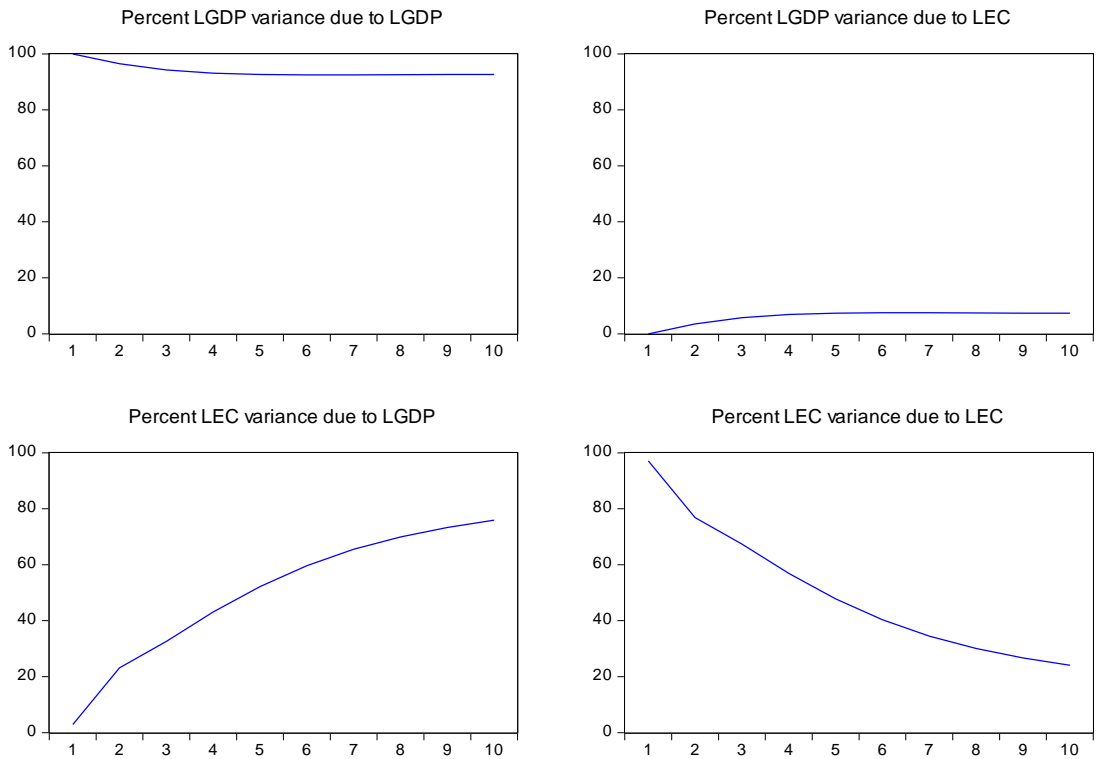
VEC Granger Causality/Block Exogeneity Wald Tests			
Included Observations: 37			
Dependent variable: D(LGDP)			
Excluded	Chi-sq	df	Prob.
D(LEC)	3.531512	2	0.1711
All	3.531512	2	0.1711
Dependent variable: D(LEC)			
Excluded	Chi-sq	df	Prob.
D(LGDP)	3.015189	2	0.2214
All	3.015189	2	0.2214

Note: ***, **, * denotes respectively 1%; 5% and 10% significance level

6.4. Results of Variance Decomposition and Impulse Response Function (IRF)

The result of VECM indicates the exogeneity or endogeneity of a variable in the system and the direction of Granger-causality within the sample period. However, it does not provide us with dynamic properties of the system. The analysis of the dynamic interactions among the variables in the post-sample period was conducted through variance decompositions and impulse response functions (IRFs).

Figure 7: Variance Decomposition
Variance Decomposition

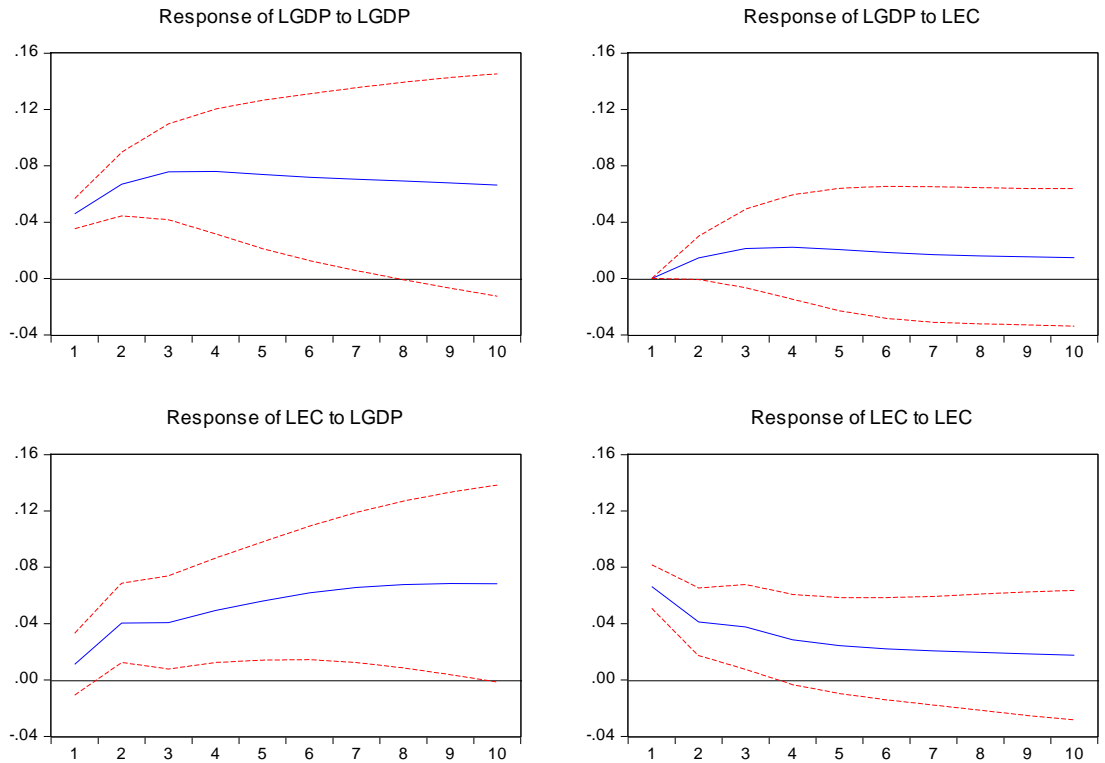


The decomposition of the variance indicates that the variance of the prediction error of LGDP is due to 92.6% of its own innovations and 7.4% of that of LEC. The variance of the prediction error of LEC is due to 76% at LGDP and 24% at LEC. This dissymmetry confirms the result of the Granger causality test. Indeed, it has a bidirectional direction from LGDP to LEC.

The results of IRF appear in four separate tables. We analyze the response to LGDP to a shock in itself and a shock in LEC. In the same way, we also analyze the response to LEC to a shock in itself and a shock in LGDP. More interesting is how LGDP responds to shocks in the LEC, and vice versa. A shock to LEC affects LGDP for one period, but dies out very

slowly after 10 periods. A shock to the LGDP creates a bigger response in LEC, though once again it tends to a steady state close to zero. This result confirms that an increase in the GDP growth rate will be accompanied by a rise in oil consumption in transport.

Figure 8. Impulse response function
Response to Cholesky One S.D. Innovations ± 2 S.E.



7. Discussion and Concluding Remarks

This paper focuses on casting light on the causal relationship between oil consumption in transport and economic growth in Cameroon. This paper uses an annual data covering the period 1975-2014, a five-step modern time series techniques. These, however, include the Unit root tests, co-integration analysis, and Granger-causality based on error correction model. As a robustness test, we have introduced the functions of impulse responses and the decomposition of the variance to portray the correlations between variables. The main result highlighted in this paper can be presented as follows:

1. We point out the presence of a long-run equilibrium relationship between oil consumption in transport and economic growth.

2. We show that there exists bidirectional causality in long-run relationship and no causality exists in the short-run relationship at the 5% level of significance.
3. The error correction model find out that an estimated 1% increase in economic growth causes a rise in oil consumption in transport of 1.29% in the long run.
4. The decomposition of the variance indicates that the variance of the prediction error of LGDP is due to 92.6% of its own innovations and 7.4% of that of LEC. The variance of the prediction error of LEC is due to 76% at LGDP and 24% at LEC. This dissymmetry confirms the result of the Granger causality test.
5. The impulse response function confirms that a shock to LEC affects LGDP for one period, but dies out very slowly after 10 periods. While a shock to the LGDP creates a bigger response in LEC, though once again it tends to a steady state close to zero.

Overall, the results imply that oil consumption in transport stimulates economic growth; in addition, increased oil consumption in transport requires real income. In fact, the change in energy consumption following an increase in real income is greater than a change in the rate of economic growth following a change in energy consumption in transport. The low level of economic growth after a variation of oil consumption leads to the fact that there are many other factors that is contributing to economic growth, and oil consumption in transport is only one of those factors.

These findings have important implications for policy in Cameroon. As a result, the government could deal with growing oil demand by supporting oil refineries through public funded subsidies.

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