DOCTORAL SYMPOSIUM PAPERS

This section features research contributions by doctoral candidates presented at the Doctoral Symposium.

DIGITAL TRANSFORMATION IN TERMS OF IMPROVING THE PERFORMANCE OF COMPANIES IN NORTH MACEDONIA

Bojana Antikj
Faculty of Economics-Skopje,
Ss. Cyril and Methodius University in Skopje, North Macedonia
bojana.antik@yahoo.com

EXTENDED ABSTRACT

Purpose The digital economy has become a key driver of economic growth in the modern world, influencing industries, business practices, and consumer behavior (Raji *et al*., 2024). For the Republic of North Macedonia, digital transformation (Casey, 2015) offers significant potential for modernizing its economy, improving productivity, and increasing competitiveness globally (Thurow, 2000). This paper explores the contribution of digitalization, how it affects online sales, the importance of digital skills that employees should possess, and the contribution of social media to increasing sales. By examining the key elements (Sutinen and Närvänen, 2022) of companies' digitalization, their presence on social media, and the level of online sales, we can see the effect of digitalization (Gonzalez-Verona *et al*., 2021) on the sales success (Gupta and Israney, 2025) achieved by companies. The high level of digitalization is considered a key factor that positively reflects the increase in online sales. Furthermore, we can process the impact of digitalization (Abou-Foul *et al*., 2020) on the broader economy, including the creation of innovations and investments (Lytras and Serban, 2025) in the development of employees' digital skills (Stofkova *et al*., 2022), which directly affect the level of effectiveness of companies. Digital skills (Audrin *et al*., 2024) are reflected in the overall operation, and a special focus is on sectors such as digital finance, e-commerce (Suganya *et al*., 2025), and manufacturing. However, all these positive effects are based on digital tools (Helsper and Van Deursen, 2015) and technological innovations that enable significantly better and faster exchange of information and more efficient communication. In fact, this communication and contact with customers is often carried out through social media (Mountinga *et al*., 2011). It also highlights the opportunities for performing on social media (Nafees *et al*., 2020), through Instagram and Facebook profiles, where companies are presented and followed by consumers (Cheung et. al., 2009). In this way, companies present themselves on the market and get closer to customers (Manthiou *et al.*, 2014). Buyers have the opportunity to purchase products and satisfy their desires and needs in this facilitated way. Of course, digital transformation brings a number of challenges and opportunities related to the digital transformation in North Macedonia. The digital economy has the potential to be a central component of North Macedonia's long-term economic strategy, fostering sustainable growth, improving living standards, and positioning the country as a more competitive player in the market.

Based on the above, the aim of this study is to examine the effect of digitalization on the development and improvement of the economy.

The paper is based on three hypotheses:

H1: The level of digitalization of companies is positively related to the level of online sales.

H2: The level of companies' presence on social media is positively correlated with the level of online sales.

H3: The level of digital skills of employees is positively related to the level of online sales.

Design/methodology/approach An online questionnaire will be distributed to business owners, managers, entrepreneurs, and IT professionals in North Macedonia. 100 respondents will actively participate in the survey and will answer identical questions. In order to test the hypotheses, a quantitative analysis of the collected data will be conducted. The instrument for data collection will be a survey questionnaire of the type of closed questions according to the Likert scale principle, with a total of five levels. The survey will be composed of three parts, namely: Questions related to digital development, such as whether and how much companies are investing in the digital development of companies, whether managers are striving to implement digital technologies, i.e. whether they see the future here, how online sales are monitored, whether there are analytical tools, whether the company has a strategy for digital transformation and improvement. The second part will be based on social media as a way of presenting the company. So, the questions would be of the type of whether social media is part of the operation, what type of posts are placed by the company, whether communication with users is regular through comments and messages, the attitude and willingness to advertise the company through paid ads on Facebook and Instagram. The third part will be based on the independent variable - digital skills of employees. The questionnaire will be aimed at understanding the level of knowledge of basic digital skills, the frequency of training intended for digital technologies, the readiness for online data analysis, the success of online sales, and whether it is without downtime and major technical problems. The analysis will be based on structural equation modeling (SEM) in two stages: Confirmatory factor analysis (CFA), and the structural model will be tested using software (SPSS).

Through structural equation modeling (SEM) (Malhotra *et al*., 2017), an assessment of the structural relationships between different constructs will be obtained, which will be represented by several different indicators in an integrated and defined model. The statistical method of regression will be used in order to determine the influence of the dependent variable on the independent variable.

A potential limitation of questionnaires is the reliability of the data obtained. The accuracy of the data obtained can always be questioned. Not all respondents will be open to giving honest answers for various reasons. Some will want to hide their strategy, some will misrepresent themselves, and so on.

Expected findings We can conclude that in the first hypothesis, the dependent variable is online sales, and the independent variable is the level of digitalization. The questionnaire determines how much digitalization contributes to increasing sales, and the information can be obtained through online sales reports. In fact, through the answers to the number of orders placed and sales made via the internet, the questionnaire allows us to see the percentage of sales increase after the implementation of digital elements. With this, we see the effectiveness of digitalization on the level of sales increase. The research for the second hypothesis is conducted by researching the company's social media profiles and the number of followers on them. It is a kind of indicator of the level of interest in the brand, the recognition that leads to sales. The fact that someone follows a brand profile speaks of interest. The third hypothesis is based on the level of influence of employees' digital skills on increasing online sales. The questionnaire will assess the readiness and awareness of employees, as well as the company's investments in their education for digitalization. This can be seen through the effects they

achieved before and after the education, whether the education led them to think about implementing new digital solutions in order to increase sales. In this way, it will be seen whether and how digitalization affects the performance and operations of companies and their economic results. Online sales are not just a technological process but the result of a combination of technology, human factors, and communication.

Originality/value Digitalization has been considered for years as a process that infiltrates all parts of human life and work. There are numerous studies that consider digitalization as a process that affects different processes separately, but not as an integrated process that connects all economic sectors. The research is expected to expand the scientific framework for digital marketing, and it will achieve this by integrating the three elements: digital development, social media, and employee skills. The survey that will be conducted among companies will provide empirical evidence on the degree of digitalization of companies and its impact on sales. The results will also show how successful companies present themselves on social media, and how for them social media is a way to connect with customers in order to increase sales. It will be seen which content reaches customers the most. On the other hand, emphasis will be placed on employee education, because only employees who know the importance of digitalization and of course, possess the knowledge to implement changes in the implementation of digital practices in the daily operations of the company, contribute the most to increasing sales. We can conclude that digitalization reaches its maximum if it is applied in all sectors; in this way, full capacity will be achieved, and the economy will grow. The paper will help to consolidate theoretical knowledge and practical application in the daily operations of companies, providing a clear picture of the effects of the application of the independent variables, digital development, social media, and digital skills of employees on the dependent variable, online sales.

Keywords: Digital economy, Economic growth, Digitalization, Transformation, Infrastructure

JEL classification: O33, M15, L25

REFERENCES
Abou-Foul, M., Ruiz-Alba, J.L. and Soares, A. (2021), "The impact of digitalization and servitization on the financial performance of a firm: an empirical analysis", *Production Planning & Control*, Vol. 32 No. 12, pp. 975-989.
Audrin, B., Audrin, C. and Salamin, X. (2024), "Digital skills at work – conceptual development and empirical validation of a measurement scale", *Technological Forecasting and Social Change*, Vol. 202, 123279.
Casey, M. (2015), "Why media preservation can't wait: the gathering storm", *IASA Journal*, No. 44, pp. 14-22.
Cheung, C.M., Luo, C., Sia, C.L. and Chen, H. (2009), "Credibility of electronic word-of-mouth: informational and normative determinants of online consumer recommendations", *International Journal of Electronic Commerce*, Vol. 3 No. 4, pp. 9-38.
González-Varona, J.M., López-Paredes, A., Poza, D. and Acebes, F. (2021), "Building and development of an organizational competence for digital transformation in SMEs", *Journal of Industrial Engineering and Management*, Vol. 14 No. 1, pp. 15-24.
Gupta, S.L. and Israney, R.S. (2025), *Service Marketing: Text and Cases*, Sultan Chand and Sons, New Delhi.

Helsper, E.J. and Van Deursen, A.J.A.M. (2015), "Digital skills in Europe: research and policy", in Andreasson, K. (Ed.), *Digital Divides: The New Challenges and Opportunities of E-Inclusion*, CRC Press, Boca Raton, pp. 125-149.

Lytras, M.D., Serban, A.C. and Ntanos, S. (2025), "Exploring distance learning in higher education: satisfaction and insights from Mexico, Saudi Arabia, Romania, Turkey", *Journal of Business Economics and Management*, Vol. 26 No. 1, pp. 1-20.

Madanchian, M. (2024), "The impact of artificial intelligence marketing on e-commerce sales", *Systems*, Vol. 12 No. 10, p. 429.

Malhotra, N.K., Nunan, D. and Birks, D.F. (2017), *Marketing Research: An Applied Approach*, Pearson Education.

Manthiou, A., Lee, S., Tang, L.R. and Ching, L. (2014), "The experience economy and the visitors' behavioral consequences: an empirical study on VEISHEA event", in *The 16th Annual Graduate Student Research Conference in Hospitality and Tourism, Houston, TX, USA*.

Mountinga, D., Moorman, M. and Smit, E. (2011), "Introducing COBRAs: exploring motivations for brand-related social media use", *International Journal of Advertising*, Vol. 30 No. 1, pp. 13-46.

Nafees, L., Cook, C.M. and Stoddard, J.E. (2020), "The impact of the social media influencer power on consumer attitudes toward the brand: the mediating/moderating role of social media influencer source credibility", *Atlantic Marketing Journal*, Vol. 9 No. 1, p. 3.

Raji, M.A., Olodo, H.B., Oke, T.T., Addy, W.A., Ofodile, O.C. and Oyewole, A.T. (2024), "E-commerce and consumer behavior: a review of AI-powered personalization and market trends", *GSC Advanced Research and Reviews*, Vol. 18 No. 3, pp. 066-077.

Stofkova, J., Poliakova, A., Stofkova, K.R., Malega, P., Krejnus, M., Binasova, V. and Daneshjo, N. (2022), "Digital skills as a significant factor of human resources development", *Sustainability*, Vol. 14 No. 20, 13117.

Suganya, R., Dhanaraj, V.T. and Ajithkumar, R. (2025), *E-commerce and Technology,* Wordsswiggle Publication, New Delhi.

Sutinen, U.-M. and Närvänen, E. (2022), "Constructing the food waste issue on social media: a discursive social marketing approach", *Journal of Marketing Management*, Vol. 38 Nos. 3-4, pp. 239-240.

Thurow, L.C. (2000), "Globalization: the product of a knowledge-based economy", *The Annals of the American Academy of Political and Social Science*, Vol. 570 No. 1, pp. 19-31.