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WHEN RATIONALITY INSPIRES AND FATIGUE PERSISTS: UNDERSTANDING DRIVERS OF ONLINE PURCHASE INTENTION

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Abstract
Using the Stimulus-Organism-Response (S-O-R) framework, this study investigates the effects of digital fatigue and digital rationality on online purchase intention. Although these forces have been frequently examined separately in prior research, little is known about how they interact to influence consumer decision-making in digital contexts. Direct and indirect effects were tested using mediation models on survey data from 259 members of Generation Z. The results show an unexpected asymmetry. Without influencing attitudes, digital fatigue directly increases purchase intention, suggesting that tiredness can influence consumers to make quick, closure-focused decisions. Contrarily, digital rationality only impacts intention through attitudes, demonstrating that logical assessments result in positive perceptions, which in turn influence more robust purchase intentions. By showing that attitudes mediate selectively based on the stimulus, these findings enhance the theory of consumer behavior. The study offers a more comprehensive understanding of digital decision-making by incorporating dual-process accounts and

resource depletion perspectives into the Stimulus-Organism-Response framework. The necessity for interfaces that provide clear information to consumers who are rationally oriented while reducing friction for weary users is highlighted by the practical implications.

Keywords: Online purchase intention, Digital rationality, Digital fatigue

JEL classification: M31, L81

Introduction

Digital commerce has become deep-rooted in everyday life, offering consumers convenience and constant visibility. The line that used to separate browsing from purchasing has blurred into an almost seamless continuum, with consumption frequently occurring during periods of distraction, exhaustion, or even deliberate thought. The psychology behind decision-making becomes crucial in these situations to comprehend not only why consumers make purchases, but also how they do so while dealing with sometimes conflicting cognitive states.

In this new environment, we consider two forces to be particularly noticeable, i.e., the so-called digital rationality and digital fatigue. The feeling of exhaustion brought on by extended and repetitive use of digital interfaces is known as digital fatigue, and it is becoming widely acknowledged because of today's interconnection between markets (Dhir et al., 2018). On the other hand, digital rationality, which has its roots in classical accounts of bounded rationality (Simon, 1955), but has been modified for use in modern digital choice environments, also represents an attempt to navigate abundance through the application of logic and analysis, and exercises control in purchase-related decision-making. Although each process has a unique impact on the consumer's journey toward intention to purchase online, we believe that their combined function has not received enough attention among global studies. That being said, without thoroughly examining the complex methods in which these states influence consumer attitudes and ultimate purchase intentions, a large portion of the literature still favors either rationalist viewpoints based on utilitarian choice or descriptions of cognitive overload and avoidance.

Given that digital markets function at the nexus of these two psychological currents, their omission can be considered at least odd. Customers are rarely completely passive victims of overload or purely rational actors. The realities of digital consumption, on the other hand, point to a coexistence where fatigue and reason do not just conflict but rather, they influence decision-making in diverse ways. Recent research also emphasizes that rational evaluation and digital fatigue are dynamic conditions that vary depending on the situation, underscoring the necessity of investigating their concurrent effects on forming purchase intentions (Zhang & Mao, 2022). Examining the multi-layered mediating mechanisms that give shape to online purchase intention is necessary to capture this duality, which often goes beyond simple cause-and-effect reasoning (Ajzen, 1991; Pavlou and Fygenson, 2006).

This challenge is taken on in the current study, which is conducted based on surveying 259 Generation Z students in North Macedonia on their perspectives, stances, habits, and attitudes towards online shopping. It offers a clearer perspective on how online purchase intentions are developed in situations involving both cognitive exhaustion and deliberate reasoning by clearly separating the roles of digital fatigue and digital rationality. Our findings show a strong divergence where digital fatigue directly influences online purchase intention positively, avoiding attitudinal processes entirely, instead of decreasing engagement. In contrast, digital rationality exhibits a complete mediating pathway by influencing others through attitude rather than directly influencing purchase decisions. An important asymmetry in the way that digital states influence the intention to make an online purchase is revealed by this study. Digital fatigue has a direct positive impact, urging customers to complete purchases without changing their mindset, indicating a stress-induced closure-seeking reaction. Digital rationality, on the other hand, influences intention solely through attitudes, as rational assessments generate positive perceptions that result in more robust intentions. By showing different pathways of depletion-driven and cognition-driven decision-making, these findings contribute to the Stimulus-Organism-Response (S-O-R) framework.

The contribution of this paper is twofold. Theoretically, it improves our comprehension of the psychological foundations of online shopping by demonstrating that fatigue and rationality follow different logics, one evading cognition and the other simply channeling through it. It implies that encouraging purchase intention should acknowledge that different consumers make decisions for different reasons. For instance, some act due to fatigue, while others do so only after conducting a systematic assessment of the activity. By highlighting this dichotomy, the study contributes to the discussion of consumer behavior in online marketplaces and creates room for more comprehensive models of forming online purchase intentions.

This paper is structured in the following manner. In the following Section 2, the theoretical background is presented on the topic, referring to previous findings and the consequent hypotheses development. Section 3 is devoted to the methodological approach, which describes the research design, metrics, and analytical approach used. The empirical findings are presented in the following Section 4, emphasizing the different ways that weariness and reason influence consumer intention. The theoretical ramifications, managerial insights, and future research directions are finally covered in detail in the discussion and conclusion of this paper.

Literature Review and Hypotheses Development

Underpinned by the S-O-R framework, we develop a model that asserts that clues (stimuli) perceived from the environment can trigger a person's internal assessment state (organism), which in turn produces positive or negative behaviors, i.e., responses (Mehrabian and Russell, 1974). S-O-R framework has been repeatedly validated in many domains, including online shopping environments (Eroglu, Machleit, and Davis, 2001), social commerce (Albarq, 2021), e-commerce (Hewei and Youngsook, 2022; Pham, Ngo, and Alomari, 2024), and live-stream shopping contexts (Zhang, Chen, and Zamil, 2023).

As a well-known framework, previous research used the S-O-R framework to explain consumer loyalty, purchase intention, buying behavior, engagement, and similar consumer behavior constructs. Recent applications show S-O-R explaining purchase intention in the online social media context. For example, Hussain et al. (2022) investigate purchase intention based on Instagram sponsored advertising, Fu et al. (2018) examine whether similarity could enhance users' online purchase intention of movie tickets, Zhu et al. (2020), analyze the influence of online reviews on purchase intention, and Wang, Sun and Hou (2021) examine the concept of perceived usefulness as a mediator between emotional interaction (familiarity and intimacy) and purchase intention. In these studies, S-O-R, as an important analytical framework for explaining human behavior, was used to predict the cognitive judgment and subsequent behavior or intention of online users.

Building on this foundation, we conceptualize digital fatigue and digital rationality as the key stimuli, attitude toward online purchasing as the organismic state, and online purchase intention as the response. Specifically, in our context, digital fatigue represents a strain-like stimulus arising from intensive online exposure and information load, which can shape immediate evaluations and, in certain cases, prompt expedient purchase responses. Conversely, digital rationality represents a utilitarian, deliberative processing orientation that enhances cognitive appraisal of online shopping benefits, thereby fostering more favorable attitudes that translate into intention. In line with prior S-O-R work, we estimate both indirect S-O-R paths and direct S-R links. Recent e-commerce studies similarly find that platform features and social cues can simultaneously shape internal evaluations and directly elevate purchase intentions (Liu and Zhang, 2024; Zhu et al., 2020). The conceptual model is presented below, followed by a detailed elaboration of the hypotheses.

Digital fatigue and purchase intention

Digital fatigue refers to the mental exhaustion and impression caused by excessive digital stimuli and information overload (Bright and Logan, 2018; Kartika Gularso and Pangaribuan, 2025). It manifests as depleted cognitive and affective resources and a tendency to withdraw or seek relief from online activity (Riedl, 2021). This phenomenon has been observed across daily communication, study, and work settings where it is experienced as tiredness, overload, and strain due to persistent screen-mediated interaction (Gregersen et al., 2023; Chaouali et al., 2025). In the social media context, social media

fatigue is the negative emotional impact of social media use (Zhang et al., 2016). Prior research shows that social media fatigue can lower user enthusiasm and lead to disengagement from online platforms (Peng, Hu, and Huang, 2021; Qin et al., 2024).

However, the relationship between fatigue and purchase intention may, de facto, be more complex. Some studies suggest that when users feel digitally overloaded or tired, they seek ways to simplify tasks and regain control. For instance, da Silva et al. (2024) found that digital burnout (a strain state closely related to fatigue) can increase consumers' engagement with digital platforms, as utilitarian motivations drive users toward more efficient and goal-directed interactions, thereby supporting the view that strain may encourage expedient coping behaviors. In such cases, a fatigued consumer might resort to quick, efficient online purchases as a coping mechanism, like buying a needed item online to avoid prolonged browsing or decision-making. Li and Ma (2024) find that information overload and fatigue can paradoxically increase consumers' likelihood of making direct purchase decisions as a way to minimize further cognitive strain. Similarly, Al-Youzbaky and Hanna (2022) demonstrate that social media fatigue and information overload can positively affect online purchasing behavior through the mediating role of technostress and information anxiety. These findings illustrate that digital fatigue does not always lead to disengagement, but under certain conditions, it may push consumers to act decisively and finalize purchases.

This perspective aligns with the rational choice under strain argument (Baumeister et al., 2008), which suggests that individuals under cognitive depletion seek to minimize additional effort by choosing the most efficient path available. Thus, despite fatigue's generally negative impact on engagement, it can paradoxically spur certain purchase decisions that promise convenience or closure. Accordingly, we propose the following hypothesis:

H1a: Digital fatigue has a positive direct effect on online purchase intention.

Digital fatigue and attitude towards online purchasing

In theory, a consumer's attitude toward online shopping could be influenced by their emotional state and energy levels in the digital environment. Digital fatigue, explained by tiredness, frustration, and burnout from online activities, would presumably undermine a person's positive feelings about further online engagement. Prior literature indeed documents that fatigue from social media use is associated with negative emotional reactions (e.g., annoyance, loss of interest) and a diminished motivation to interact online (Qin et al., 2024; Zhang et al., 2016). In marketing contexts, digital or ad fatigue leads to lower engagement and can translate into an overall negative disposition toward online brand interactions (Pang et al., 2024; Luqman et al., 2017).

At the same time, there are studies that highlight positive associations, indicating that consumers experiencing digital fatigue often maintain or even increase their engagement with online shopping. For instance, da Silva et al. (2024) found that digital burnout had a significant positive effect on consumers' use of digital shopping platforms. In a similar vein, Ceylan et al. (2024) reported a significant positive correlation between consumers' digital burnout levels and their attitude toward online shopping. In other words, it is noted that higher digital fatigue was associated with a more favorable or strengthened attitude toward buying online.

One explanation for this positive linkage is that fatigued consumers may turn to online shopping as a coping mechanism or convenient escape. For instance, Zhao et al. (2022) observed that individuals overwhelmed by intensive digital use did not always withdraw; rather, some used e-commerce as a form of emotional relief and a means to regain a sense of control. Interpreted through a utilitarian lens, digitally fatigued users can still value e-commerce for speed, necessity, and convenience, sustaining favorable evaluations (Hewei and Youngsook, 2022). Thus, despite strain, some consumers may appreciate the convenience and relief online purchasing provides, which can reinforce a positive attitude. Building on this rationale, we expect that higher digital fatigue (when framed as a motivation to minimize effort and regain control), will be associated with more favorable attitudes toward buying online. Further, to the extent that digital fatigue shapes these attitudes, attitude should carry part of its influence onto online purchase intention (i.e., a mediated pathway), alongside any direct effect modeled elsewhere.

H1b: Digital fatigue positively affects attitude towards online purchasing.
H1c: Attitude towards online purchasing mediates the relationship between digital fatigue and online purchase intention.

Digital rationality and online purchase intention

We conceptualize *digital rationality* as a consumer's propensity for logical, utility-driven decision-making in an online shopping environment, emphasizing carefully comparing options, seeking value, and relying on reason over impulse. This aligns with the notion of a utilitarian shopping orientation, which refers to "rational, planned, and goal-oriented" consumer behavior (Scarpi, 2020, p. 5). In practice, goal-driven online consumers (those high in rational orientation) tend to be task-focused, efficiency-seekers, and sensible in their choices, treating shopping as a problem-solving task rather than entertainment (Redda, 2020). Such consumers emphasize functional benefits (e.g., finding the best price or saving time) and systematically evaluate product information before buying. Consequently, when an online option is judged advantageous, a rational orientation should elevate purchase intention.

Prior research supports the positive impact of a rational/utilitarian orientation on online purchase intentions. For example, Muslikhun, Harjanti, and Wahjoedi (2022) report that utilitarian motivation positively predicts online purchase intention, and evidence suggests that traditional shopping motives transfer to online contexts and shape purchasing intentions, with utilitarian effects comparatively strong (Sütütemiz and Saygılı, 2020). In a similar line, meta-analytic evidence indicates that perceived usefulness (defined as the belief that an online purchase will be beneficial or efficient), shows a robust positive relationship with consumers' intention to transact online (Gosh, 2024). Although some studies note that hedonic motives can be stronger in certain segments for Gen Z, utilitarian value remains a reliable predictor of intention (de Lima and Monteiro, 2022). Moreover, research in emerging formats like live-stream shopping demonstrates that rational thinking can amplify purchase likelihood. For instance, Xie, Du, and Gao (2022) found that in live-stream commerce, goal-driven consumers' rational thinking mediates platform effects on buying intent, meaning that when consumers process the content logically (e.g., evaluating product information and deals), their intention to purchase increases markedly. Based on the foregoing evidence, we expect that a digitally rational consumer will be more inclined to purchase if the offering is deemed beneficial. Thus, we hypothesize that:

H2a: Digital rationality has a positive direct effect on online purchase intention

Digital rationality and attitude towards online purchasing

Consumers' rational evaluation of online shopping options tends to cultivate a more positive attitude toward buying online. In essence, when consumers carefully weigh the practical benefits of e-commerce, such as convenience, cost savings, and efficiency, they are more likely to hold favorable views of online purchasing. Ample evidence supports this connection. For example, Delafrooz et al. (2009) observed that pragmatic factors like ease of purchase, lower prices, and wider product selection were key determinants of students' online-shopping attitudes. By contrast, purely hedonic motivations (e.g., shopping for fun) were less influential, underscoring the importance of an analytical, value-driven mindset in shaping attitudes (Delafrooz et al., 2009). Rominingtyas and Riptiono (2024) similarly note that highlighting these practical advantages can notably boost consumers' attitudes toward e-commerce. A more recent study found that perceived utilitarian value in e-commerce (efficiency, time and effort saved, etc.) had a significant positive impact on attitudes toward online purchasing (Muslikhun et al., 2022). Likewise, Yan et al. (2022) reported that emphasizing utilitarian values, such as online shopping's convenience and quality advantages, led to higher cognitive and affective attitude scores among consumers.

This pattern suggests that individuals who approach digital consumption analytically, with a rational lens, tend to recognize more utility in online shopping and consequently form more positive attitudes about it. These favorable attitudes are not only an outcome of digital rationality but also play a pivotal role in driving behavior. In fact, a strong positive attitude toward online shopping often translates into higher intention to buy online (Muslikhun et al., 2022). Thus, our hypotheses posit that digital rationality has a direct positive effect on attitude toward online purchasing, and furthermore, that attitude toward online purchasing mediates the relationship between digital rationality and online purchase intention, carrying the influence of a rational assessment forward into actual buying intentions.

H2b: Digital rationality positively affects attitude towards online purchasing.
H2c: Attitude towards online purchasing mediates the relationship between digital rationality and online purchase intention.

Attitude towards online purchasing and purchase intention

Attitude toward online shopping is a well-established antecedent of online purchase intention in consumer behavior theory. In the context of web-based shopping, online purchase intention serves as an indicator of consumers' likelihood to complete transactions through the Internet (Salisbury et al., 2001; Takaya, 2019). In line with the Theory of Planned Behavior if an individual evaluates online purchasing positively (i.e., has a favorable attitude), their intention to make online purchases tends to be stronger (Ajzen, 1991). Attitude reflects an individual's overall evaluation of online buying, and a positive evaluation makes the person more willing to follow through with purchase behavior. However, the fact that individuals cannot physically touch, taste, or feel the tangible benefit they are acquiring online might occasionally deter consumers' attitudes towards online shopping (Silva et al., 2020).

A wealth of studies confirms that the more positive a consumer's attitude toward online shopping, the stronger their intention to engage in it (Tormala and Rucker, 2017; Han, Kim, and Lee, 2018; Wang et al., 2018; Nguyen et al., 2019; Peña-García et al., 2020; Wicaksono et al., 2023). For example, shoppers who feel confident and satisfied with online shopping have higher purchase intentions and even actual purchase rates (Patel et al., 2023). This attitude-intention link has been observed across varied settings. In online food purchasing, favorable attitudes robustly raise intentions to buy perishable goods via e-channels (Nguyen et al., 2019), also in apparel e-retail, attitude translates into both higher intention and realized purchase behavior (Patel et al., 2023). In cross-cultural general e-commerce samples, positive attitudes consistently predict stronger purchase intentions (Peña-García et al., 2020). Complementing these domain-specific results, work on attitude strength shows that when consumers feel more certain about their attitudes, this link becomes even stronger, helping explain robust effects observed in digital shopping contexts (Tormala and Rucker, 2017; Wang et al., 2018). Based on the previous, we propose the following hypothesis:

H2d: Attitude towards online purchasing positively affects online purchase intention.

Methodology and Data

For data collection, we targeted members of Generation Z, who were born from the mid-to-late 1990s to the early 2010s, restricting the birth years from 1997 until 2012 (Talmon, 2019), and have also shopped online, as our research aims to investigate the effects of digital fatigue and digital rationality on online purchase intention. Moreover, we followed a single-mode collection approach using online collection instruments, as an online survey was disseminated via the Internet to students in a higher-education institution in the Republic of North Macedonia.

In terms of sampling, we opted for non-probability convenience sampling and snowball sampling. We believe that this non-probability sampling is adequate for determining the sample size for multiple reasons. To begin with, this technique enabled us to capture the characteristics of the respondents that we required, which is related to the use of online shopping platforms. Then, this type of sampling approach allows the sample size to be achieved more easily, considering recommendations that the size should be bigger than 10 times the largest number of structural paths in the model (Hair et al., 2010). Eventually, small to medium sample sizes of less than 500 participants are suitable due to ready availability and convenience, considering the study's timeframe (Hair et al., 2010).

The respondents were asked to answer all questions of the survey based on their past experiences with online shopping, to which the respondents gave their consent and permission. Data was collected in May 2025. The survey was conceptually designed in English, translated into the local language, which was Macedonian, and back translated into English to ensure it is comprehensive and valid. A total of 298 questionnaires were distributed to potential respondents. First, we removed the answers of the respondents who did not fit in the age group that we targeted. Based on that, we collected 272 completed

surveys. After removing some responses with duplicate IP addresses and the same values in all items of the survey, we obtained a final data sample of 259 valid surveys.

Amongst the respondents, 69.9% were female, and 30.1% identified as male. In terms of the monthly allowance they have at their disposal, it ranged from less than 50 euros (15.8%), 50-100 euros (24.3%), 100-150 euros (20.5%), 150-200 euros (11.6%) to more than 200 euros (27.8%). Furthermore, 6.2% of the respondents usually spend less than two hours a day online, 29.7% of them spend between two and four hours online daily, 36.3% between four and six hours, and 27.8% of them more than six hours a day, revealing an intense presence online among the participants of the study.

Regarding the measurement, the survey was conducted using a five-point Likert scale, where the descriptive equivalents ranged from 1 meaning strongly disagree and 5 indicated the respondent strongly agrees with the provided statement. The items for attitude were modified from Chetioui et al. (2021) and Korzaan (2003), whereas those for online purchase intention were modified from Peña-García et al. (2020). Further, the items for digital fatigue and digital rationality were modified from Bright et al. (2015) and Scott and Bruce (1995), respectively.

Results

To verify the model, we used a multi-model mediation regression analysis using PROCESS v5 macro developed by Hayes (2022). First, factor analysis was conducted (Table 1), whose results lend strong support to the measures' convergent validity. The analysis yielded a four-factor solution. Factor loadings showed mostly strong clusters for Attitude and Online Purchase Intention items and for Digital Fatigue and Digital Rationality, though some items (ATT1, ATT2, OPI1, OPI2, OPI5, DF5, DR2) had weak or cross-loadings and were excluded from subsequent analyses. Evidently, all estimated factor loadings of the items within the constructs exceed the recommended cut-off threshold of 0.5 and at the same time are statistically significant at the 0.001 level (Hair et al., 2010).

Table 1: Factor analysis of the variables (N = 259).

Variable	Item	Factor 1	Factor 2	Factor 3	Factor 4
Attitude toward Online Purchase	ATT3: Shopping online is a pleasant activity for me.	.722			
	ATT4: I like to shop online.	.837			
	ATT5: Shopping online is enjoyable.	.677			
Online Purchase Intention	OPI3: I am likely to make a transaction at an online shop soon.		.647		
	OPI4: If the opportunity arises, I intend to buy from online shops.		.639		
Digital Fatigue	DF1: The amount of information on online shopping sites overwhelms me.			.617	
	DF2: The amount of information available on shopping websites makes me tense.			.744	
	DF3: When searching for product information online, it is likely for me to give up due to information overload.			.724	
	DF4: I am likely to receive too much information when I am searching for products/services on online shopping sites.			.545	
Digital Rationality	DR1: I make decisions logically and systematically when I shop online.				.630
	DR3: I consider various alternatives in terms of a specific goal when I shop online.				.546
	DR4: I double-check my information sources before I shop online.				.815
	DR5: I seldom rely on my intuition when I shop online.				.525

Source: Authors' calculations.

Reliability was determined to be significant as the Cronbach's α value of each construct was higher than or close to 0.7, as the recommended threshold. Namely, the Cronbach's α for attitude was .816, for online purchase intention was .712, for digital fatigue was 0.709, and 0.761 for digital rationality. The values for Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) for the items were also above the minimal threshold of 0.8. Attitude's KMO value was .709, online purchase intention's KMO value was .601, while the KMO values for digital fatigue and rationality were .728 and .651, respectively.

To assess potential common method bias, Harman's single-factor test was performed using principal component analysis with all measurement items entered simultaneously and no rotation applied. The analysis yielded four components with eigenvalues greater than 0, with the first factor accounting for 43.39% of the total variance, which is below the 50% threshold typically used as an indicator of common method variance (Podsakoff et al., 2003). Additionally, item loadings on the first component ranged from .344 to .790, indicating no single item or factor dominated the solution. As such, the results suggest that common method bias is unlikely to pose a serious threat in this study.

Table 2, which contains the descriptive statistics, shows that respondents report generally positive attitudes toward online shopping and moderately high purchase intention. Digital fatigue is comparatively low to moderate, while digital rationality is relatively high, suggesting the sample is more rational than fatigued in their online shopping behavior. Standard deviations, which range from around 0.7 to 0.9, indicate a reasonable spread of responses without extreme dispersion.

Table 2: Descriptive statistics of the analyzed variables (N = 259).

Variable	Mean	SD	1	2	3	4
Attitude toward Online Purchase	4.01	0.88	—			
Online Purchase Intention	3.69	0.94	.628 (p < .001)	—		
Digital Fatigue	2.96	0.84	–.013 (ns)	*.139 (p = .025)	—	
Digital Rationality	3.94	0.67	.423 (p < .001)	.311 (p < .001)	.093 (ns)	—

Source: Authors' calculations.

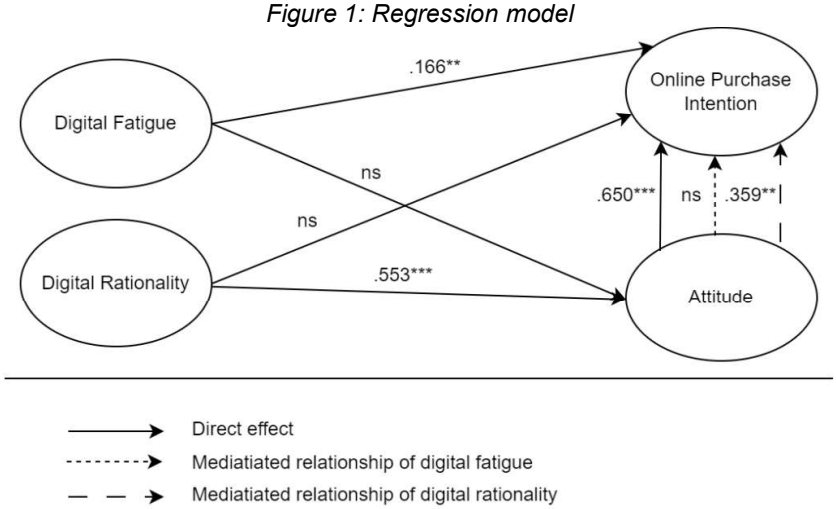
There is a strong positive correlation between attitudes toward online purchase and the intention to do so, supporting the theoretical expectation that more favorable attitudes predict higher purchase intentions.

Digital rationality is positively correlated with both attitude and online purchase intention (both p < .001), indicating that rational decision-making is linked to more favorable evaluations and stronger buying intentions. On the other hand, digital fatigue shows no significant relationship with attitude but a positive correlation with online purchase intention. All correlations are well below the .70 threshold, suggesting no multicollinearity concerns for regression analyses.

As shown in Table 3 and Figure 1, a mediation multi-model regression analysis examined whether attitude towards online purchasing mediates the effect of digital fatigue on online purchase intention. Results showed that digital fatigue is not significantly associated with attitude (B = –.014, p = .834), while attitude is strongly associated with online purchase intention (B = .677, p < .001). Digital fatigue is directly associated with online purchase intention (B = .166, p = .002). The indirect impact of digital fatigue on online purchase intention via attitude was not significant (effect = –.009, 95% CI [–.103, .079]). Thus, the results indicate that attitudes towards online shopping do not mediate the effect of digital fatigue on online purchase intention. Instead, digital fatigue exerts a direct positive effect.

When it comes to digital rationality, the results are different. It is demonstrated that digital rationality is significantly associated with attitudes towards online purchasing (B = .553, p < .001), and the attitudes in turn are strongly related to online purchase intention (B = .650, p < .001).

Figure 1: Regression model



*Note: *** = p < .001; ** = p < .01; ns = non-significant*

Source: Authors' work.

Unlike the effect of digital fatigue, the direct effect of digital rationality on online purchase intention was not significant (B = .077, p = .305). However, the indirect effect via attitude was significant (effect = .359, 95% CI [.241, .487]). This provides evidence for full mediation, suggesting that digital rationality enhances online purchase intention only by shaping consumer attitude.

Table 3: Mediation analyses of digital rationality and digital fatigue on online purchase intention through attitude towards purchasing online.

Predictor	**Path to Mediator (a) → Attitude**	**Path M → Y (b) → Online Purchase Intention**	**Direct Effect (c′) X → Online Purchase Intention**	**Indirect Effect via Attitude**	**R^2**	**F (df1, df2)**	**MSE**
Digital Rationality	B = .553, p < .001	B = .650, p < .001	B = .077, p = .305 (ns)	Effect = .359, 95% CI [.241, .487]	0.629	84.15 (2, 256), p < .001	0.541
Digital Fatigue	B = –.014, p = .834 (ns)	B = .677, p < .001	B = .166, p = .002	Effect = –.009, 95% CI [–.103, .079] (ns)	0.645	91.17 (2, 256), p < .001	0.524

Source: Authors' calculations.

Moreover, coefficients are unstandardized, and 95% CIs are bias corrected from 5,000 bootstrap samples (see Table 3). Considering the study relies on a single-time survey, the analyses establish associations rather than causal relationships. Although the PROCESS macro is suitable for testing indirect effects, interpretations are framed in terms of relationships.

Discussion

The asymmetry in patterns found by our analyses can be explained by placing digital fatigue and digital rationality as stimuli within an S-O-R logic. Our results support H1a, showing that consumers may prioritize minimization of efforts and quick closure over prolonged search and evaluation when they are fatigued. Practically speaking, fatigue seems to encourage some people to engage in low-friction transactions that reduce further digital strain, which is consistent with accounts where information pressure and social media strain can lead to simpler purchase decisions, rather than disengagement

(Al-Youzbaky and Hanna, 2022; Silva et al., 2024; Li and Ma, 2024). This tendency is probably more pronounced for so called low-commitment purchases, such as everyday products or inexpensive accessories, where making decisions quickly is considered acceptable. It might be weaker for high-involvement categories, such as more expensive electronics or services with greater perceived risk, where customers typically require careful consideration and assurance prior to their eventual purchase.

Empirically, our data shows a positive direct link between digital fatigue and online purchase intention, alongside a non-significant digital fatigue-attitudes link. The lack of a significant positive effect suggests that digital fatigue does not improve consumers' attitudes, but rather, the trend may be negative. Fatigued individuals likely feel less enthusiastic about online purchasing, aligning with the broader view that digital fatigue does not improve attitudes toward online purchasing and may even bias them downward (Zhang et al., 2016; Luqman et al., 2017; Qin et al., 2024; Pang et al., 2024), thereby rendering fatigue a double-edged driver in the context of digital commerce. However, given that our results showed no significant impact of fatigue on attitude (as H1b was not supported), the precondition for mediation was not met. This aligns with other findings in the literature. For example, in some contexts, attitudes fail to mediate effects of risk or stress on intentions if those factors don't substantially change the attitude itself (Hasan and Erni, 2023; Makhitha and Ngobeni, 2024). Our data indicates that digital fatigue's effect on OPI remains direct rather than attitudinally driven, reinforcing that not all consumer decisions are filtered through conscious attitude when digital stress is high.

By contrast, digital rationality behaved as a classic cognition-centric stimulus that first reshapes the organismic state and only then influences the response. Our empirical test of H2a did not find support for a direct positive effect of digital rationality on purchase intention. One possible explanation is that rational evaluation alone may not trigger immediate buying impulses, but instead, its influence might manifest through forming favorable attitudes or requiring additional factors like trust and low risk to convert into intention. Our results confirmed that rationality strongly increased attitudes toward online purchasing, which means that as consumers feel more in control and informed in the digital marketplace, their comfort and positive sentiment toward online buying grows. Additionally, the indirect effect via attitude was sizable and significant. This is consistent with full mediation and suggests that reasoned, utilitarian appraisals do their work primarily through attitudinal formation rather than through a standalone push on intention. These results are consonant with findings that cognition-heavy antecedents such as perceived usefulness or information diagnostic strengthen favorable evaluations that, in turn, drive intention (Delafrooz et al., 2009; Muslikhun et al., 2022; Yan et al., 2022; Rominingtyas and Riptiono, 2024).

In our research, H2d was supported, reinforcing that attitude is a powerful predictor of OPI. It also resonates with practical observations that consumers who enjoy online shopping or believe it is a smart way to shop are much more inclined to intend buying products online compared to those with neutral or negative attitudes (Tormala and Rucker, 2017; Han et al., 2018; Wang et al., 2018; Nguyen et al., 2019; Peña-García et al., 2020; Wicaksono et al., 2023; Patel, 2023).

Theoretical implications

This study contributes to the S-O-R literature by demonstrating a configuration in which two conceptually distinct stimuli operate through different routes toward online purchase intention, thereby challenging the common assumption that stimuli must always exert their influence through the organismic state. Specifically, we determine that digital fatigue behaves as a strain-based stimulus that increases online purchase intention directly without commensurate change in attitudes toward online purchasing. Although digital rationality behaves as a cognition-centric stimulus that elevates intention only after it strengthens attitudes, which then functions as the proximal driver of behavioral intention. In addition, the paper contributes to a clear conceptualization of digital rationality as a utility-driven decision orientation in digital commerce that systematically builds positive attitudes toward online purchasing and subsequently heightens intention, which consolidates dispersed insights on utilitarian value, information diagnostics, and reasoned evaluation into a coherent stimulus-level construct. The findings also add precision to the role of attitudes in online consumer behavior by showing that attitudes are decisive when the stimulus is cognitive in nature, yet not necessarily decisive when the stimulus reflects depletion or strain. Thus, advancing theory on attitude mediation by indicating that mediation will fail whenever the stimulus does not measurably alter the evaluative state. Finally, by demonstrating both a depletion-to-closure and a deliberation-to-evaluation route in one setting, this study integrates S-O-R with dual-

process and resource-depletion perspectives and provides a more comprehensive account of how consumers move from digital conditions to purchase intention in contemporary online marketplaces.

Practical implications

The results indicate that design should be in line with consumers' decision states for managers and e-commerce experts who want to boost online purchase intention. By providing a straightforward comparison view and transparency in total costs prior to checkout, for example, managers can help consumers behave more rationally. One way for managers to ease customer fatigue by restructuring the checkout process and offering a simple "buy again" option for regular purchases, for instance. Experiments can help determine when to prioritize speed of completion or depth of information, and behavioral signals can be used to determine which mode is more likely at any given time. Consequently, journeys should be made to minimize resistance through one-step checkouts, prefilled information based on previous purchase memory, easily retrievable previous orders, and succinct messaging, as consumers experiencing high levels of digital fatigue may prefer effort minimization over prolonged deliberation. To prevent short-term completion from turning into longer-term fatigue, we believe that businesses should also concurrently manage message frequency and interface clutter. Moreover, they should use audience segmentation and experimentation to match interventions to user states. They can use behavioral signals to identify users who are tired and require low-effort pathways towards consumption, as well as analytically oriented users who benefit from preferred richer information. To maintain positive assessments and translate them into increased purchase intention, they should also track attitudinal indicators over time to adjust communication intensity as well as content depth.

Limitations and future research

Despite the relevance of the findings, the study holds its own challenges and limitations. It relies on a cross-sectional online questionnaire administered to a student sample drawn largely from Generation Z in North Macedonia, which constrains the overall generalizability of the results to broader age populations, different cultural contexts, or even more diverse sampling frames. In line with this, the findings should not be interpreted as directly applicable to consumers in different cultural contexts or to older age groups. The way fatigue and rationality influence intention may vary depending on factors such as purchasing power, platform trust, or even retail conditions. Therefore, future studies should test the model across age groups and in different nations. They should also employ designs that better support causal claims, such as experimental or longitudinal approaches combined with behavioral data. Hence, future studies should use experimental or longitudinal designs to confirm these pathways and include behavioral data like transaction records or clickstream traces. Future research should focus on the conceptual and measurement limitations as well. While digital fatigue directly impacted intention without causing a change in attitude, our model identified attitudes as the primary organismic state that connected digital rationality to intention. To test whether multiple mediators function in parallel or sequentially in distinct product categories, future research could expand the organism layer to include perceived control, trust, shopping confidence, or cognitive strain. Scholars might also examine moderators that plausibly condition the proposed pathways, such as price level, perceived risk, time pressure, message frequency, interface complexity, social presence, or even prior online purchasing experience. Finally, since hedonic orientation and rationality can coexist in the same decision episode, future designs might compare cognitively and affectively oriented segments using multi-group or latent-class analyses.

Conclusion

The purpose of this study was to clarify how, within the S-O-R framework, digital fatigue and digital rationality influence the development of online purchase intentions. There is an obvious asymmetry in the results. Purchase intention is directly impacted by digital fatigue without affecting customer sentiment. On the other hand, digital rationality influences intention by strengthening attitudes rather than directly influencing them. This contrast shows that there are two distinct psychological pathways that influence digital consumption i.e., one which is characterized by cognitive exhaustion that promotes quick closure and the other which is characterized by thoughtful assessment that develops positive judgments prior to decision-making. These findings contribute by improving current theories of how consumers make decisions in digital settings. Although it is commonly believed that fatigue reduces engagement, these findings imply that fatigue may actually influence people to make choices that

require the least amount of extra work. In that process, attitude is not very important. But for rationality to transform into intention, a positive evaluative state must exist, proving that cognition-focused stimuli work through attitudes rather than around them. By demonstrating that attitudes have a selective effect based on the type of stimulus, the study broadens our understanding of mediation. In order to present a more thorough understanding of online consumer decision-making, the work deliberately integrates knowledge from dual-process accounts and resource depletion theories with the well-established S-O-R logic.

This makes it evident that the patterns seen must be considered in a practical manner. In addition to describing abstract tendencies, digital fatigue and digital rationality also indicate how customers engage with the systems that businesses establish. People tend to take the easiest route when they are tired, which implies that lowering transactional resistance is essential for maintaining engagement. Automated form completion, simplified checkout processes, and clear navigation can all assist weary customers in making decisions without adding to their stress. The consumer reacts to the depth of information rather than its lack when rational evaluation is more prominent. Thorough product comparisons, reliable evaluations, and open disclosures enhance attitudes, which subsequently translate into intention. It is necessary to pay attention to the changing circumstances in which consumers behave when creating digital environments that satisfy both tendencies. The study used a sample of students who were primarily from Generation Z, and the data were gathered all at once. Both generalizability and causal inference are constrained by these characteristics. To test the findings' robustness across various populations, cultural contexts, and product categories, more research is required; ideally, this research will use experimental or longitudinal designs. A more comprehensive understanding of the psychological processes at work might also be obtained by expanding the model to include additional organismic states like trust, perceived control, or cognitive strain. Furthermore, studying possible boundary conditions like interface complexity, time constraints, or perceived risk could help clarify when fatigue-driven or rationality-driven pathways are most important.

When combined, the findings show that there are two different ways that online purchase intention manifests itself. While rationality fosters positive attitudes that ultimately result in intention, fatigue drives consumers toward quick closure. The study highlights that effective engagement necessitates sensitivity not only to consumer preferences but also to the cognitive states under which decisions are made. By identifying these dual processes, it advances theory and practice in digital commerce.

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