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Impact of Digital Burnout on Consumer Perceptions of Online Shopping

Mehmet Faruk Ceylan[1]*, Murat Basal[2], Sule Gayretli[1]

1. Business Administration, Institute of Graduate Studies, Istanbul Gelisim University, Istanbul, Turkey.
2. Logistics, Vocational School, Istanbul Gelisim University, Istanbul, Turkey.

Abstract

Digital burnout refers to the stress and exhaustion individuals experience due to excessive time spent in digital spaces, especially on the Internet. Online shopping, also referred to as e-commerce, is a process where consumers select products, add them to their cart, and complete their purchases online. Consumer attitude reflects their positive or negative reactions toward specific products, situations, or experiences. This study aims to investigate how digital burnout, caused by prolonged Internet usage, affects consumer attitudes towards online shopping. This research was conducted with a focus on renewable energy to investigate the relationship between digital fatigue and consumer behaviors in online shopping. Data were collected from 413 internet users in Istanbul, who participated in a survey conducted via Google Forms in April 2023. Statistical analyses, including t-tests and ANOVA, were used to evaluate the data, concluding that digital burnout has a significant impact on consumer attitudes toward online shopping. The study suggests that similar research should be conducted to further examine the impact of social media trends and e-commerce behaviors.

Keywords: Online shopping, Digital burnout, Consumer attitudes, Digital marketing

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Corresponding author: Mehmet Faruk Ceylan
E-mail ✉ mehmetfarukceylan@gmail.com

Introduction

A consumer is a person who purchases, uses, and enjoys a product for personal needs, acting as the end user of a good or service. Consumers often develop preferences due to the convenience and speed offered by online shopping, which allows them to select products, make purchases over the Internet, and have items delivered directly to their doorsteps. This method of shopping meets several consumer desires, making it an increasingly popular choice.

Upon reviewing the existing literature, it was found that there is a lack of spatial analysis of digital burnout, both in domestic and international studies. Previous research mainly focused on identifying burnout levels in consumers but did not explore its impact on attitudes toward online shopping. This study, therefore, aims to examine the effect of online marketing on consumer attitudes, which serves as the core focus of the research. This unique approach is expected to add value to the existing body of literature and offer fresh insights. The data for the study was collected through a questionnaire distributed via Google Forms, and hypotheses derived from the literature review were tested using the collected data. The study concludes with a discussion of its findings and practical recommendations.

Digital burnout

Understanding the differences between digitalization and digitization is crucial when developing business strategies [1]. Both digitalization and digitization play important roles in improving business agility and performance, helping organizations

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achieve the transformation they seek [2]. This process also aids in mitigating future confusion and challenges [3]. The digital era has transformed consumer access to various services and products that were once considered futuristic [4].

Burnout has three primary components: exhaustion, cynicism, and ineffectiveness. The exhaustion component represents physical and mental fatigue, while cynicism relates to a sense of detachment from work and interpersonal relationships. Ineffectiveness reflects feelings of inadequacy and lack of success in one's work [5]. Burnout is a psychological syndrome that results from prolonged exposure to chronic stressors, primarily in the workplace. It is characterized by emotional exhaustion, depersonalization, and a sense of reduced accomplishment. Symptoms of burnout can be categorized as physical, psychological, and behavioral [6]. Though burnout can affect anyone, individual factors such as age, gender, marital status, education, and professional experience can influence its onset and intensity, as well as a person's ability to recover from it [7].

Consumer online shopping

Online shopping refers to the process of purchasing products and services from sellers via the Internet. Since the advent of the World Wide Web (www), businesses have sought to reach consumers through online platforms. A wide range of products, including books, clothing, appliances, toys, software, and even health insurance, can now be purchased online [8]. The Internet functions as an electronic network that enables communication and interaction among people, groups, and institutions. This online communication has evolved with the expansion of the network, leading to new uses like email, forums, and file-sharing services.

The integration of the Internet, social media, and mobile phones has become an integral part of everyday life, replacing traditional communication methods [9]. Notably, the late 20th century saw significant advancements in computer technology due to developments in nanotechnology. These advancements improved computer processors and designs, resulting in faster, more compact devices capable of handling complex tasks efficiently [10].

Consumer behavior in online shopping

Online shopping has rapidly gained popularity, fueled by the rise of e-commerce platforms. Consumers appreciate the convenience it offers, such as lower prices, faster purchases, and time savings, which have contributed to its growing preference. The increasing use of online shopping also means that consumers are more actively involved in their purchasing decisions [11]. E-commerce platforms provide consumers with vast amounts of data and product choices, influencing their preferences and purchasing habits [12]. Privacy concerns, however, remain prominent, as consumers need to decide how much personal information they are willing to share for a smoother shopping experience.

Attitudes play an important role in consumer decision-making. Defined as stable predispositions towards objects or situations, attitudes influence individuals' behavior and choices. They reflect consumers' evaluations of various aspects, driven by their underlying beliefs and values. In online shopping, attitudes are shaped by the functional needs of consumers, such as convenience, security, and value for money. Additionally, social norms guide consumer behavior, influencing their expectations and responses in specific situations [13, 14].

The Functional Attitude Theory provides insights into why consumers make decisions based on psychological needs like personal fulfillment, defense mechanisms, and prior experiences. Other models, such as the Fishbein Model and the Reasoned Action Theory, help explain how attitudes predict behavior. However, researchers note that there is often a disconnect between attitudes and actual purchasing actions [15]. This misalignment highlights the complexities of consumer behavior, where learned responses and situational factors come into play [16, 17].

Relevant studies in the field

In her research "The Impact of Social Media on Purchasing Behavior in Digital Bangladesh," Prome [18] examines how changing market conditions and evolving consumer behavior are reshaping the digital shopping landscape. She notes that consumers are becoming more selective due to increased differentiation among brands.

A study by Sumi and Ahmed [19], "Exploring Online Buying Behavior of Young Consumers During the COVID-19 Pandemic: A Bangladeshi Perspective," highlights that factors like price, convenience, and health concerns positively affect online shopping attitudes. These factors, along with perceived utility and ease of use, significantly influence consumer purchasing behavior.

Yiğit *et al.* [20], in their study "The Role of Cognitive Biases in Technostress and Digital Burnout," explores the psychological effects of digital burnout. They reveal that extended exposure to digital environments, especially through excessive technology use, leads to stress, anxiety, and cognitive biases, affecting consumers' decision-making processes.

Materials and Methods

Study objective

This research seeks to examine how digital burnout influences consumers' attitudes toward online shopping in today's increasingly digital world.

Research framework

The research model, as illustrated in **Figure 1**, was developed after an extensive review of existing literature, forming the foundation for understanding the relationship between digital burnout and consumer shopping behavior.

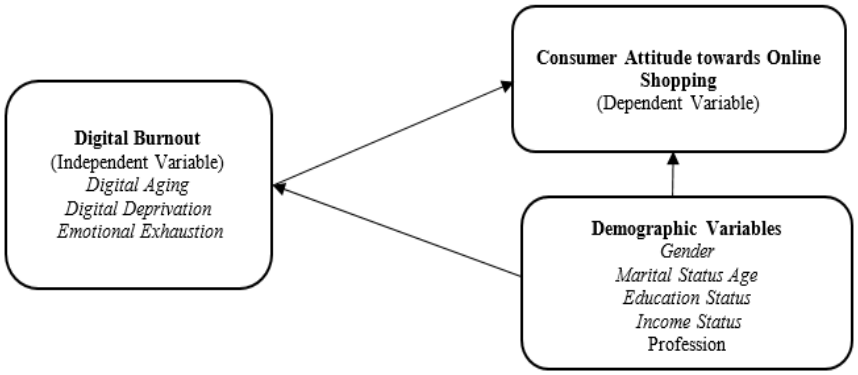

Figure 1. Research framework.

Hypotheses

The hypotheses for this study were developed based on the proposed research model and will be explored and analyzed in the findings and discussion section.

Study population and sample

The target population for this study comprised online shoppers in Istanbul. The research includes all internet users aged 18 or above who engage in online shopping. A total of 413 survey responses were gathered, with some responses being excluded due to non-compliance with the inclusion criteria. The data was collected through a questionnaire using a 5-point Likert scale, administered both face-to-face and online via Google Forms.

Data collection approach

To measure the impact of digital burnout on consumer attitudes toward online shopping, the study developed a comprehensive scale. The survey questionnaire was finalized with input from subject matter experts. The first section of the questionnaire gathered demographic information, including age, gender, marital status, income, education, and profession. The second section was dedicated to assessing digital burnout, with a total of 36 items divided into three subscales: digital aging (24 items), digital deprivation (6 items), and emotional exhaustion (6 items). After conducting factor analysis, the following results were obtained:

- Eigenvalue: F1:9.114, F2:2.424, F3:1.922
- Explained Variance: F1:25.205%, F2:18.268%, F3:12.609%
- KMO: 0.839
- Bartlett's Test Chi-Square: 6975.578 (P = 0.000)

The scale demonstrated strong reliability, with a Cronbach's alpha value of 0.924. The consumer attitude toward online shopping was measured using 9 items, and the results of factor analysis for this scale were as follows:

- Eigenvalue: 4.927
- Explained variance: 56.742%
- KMO: 0.870
- Bartlett's test chi-square: 2125.620 (P = 0.000)

The digital burnout scale was adapted from "The Digital Burnout Scale Development Study" by Erten and Özdemir [21], while the scale for measuring online shopping attitudes was derived from the work of Özgüven [22]. The reliability of these scales was confirmed by Cronbach's alpha values of 0.851. A pilot test involving 30 respondents was conducted to validate the questionnaire. The necessary permissions were obtained from the original scale developers. The survey took place in April 2023.

Limitations

Due to constraints on time and resources, the study was limited to participants residing in Istanbul, which may limit the generalizability of the results to the broader population of Turkey.

Results and Discussion

Statistical data evaluation

To assess the normality of the data distribution, skewness and kurtosis coefficients were calculated. The data exhibited coefficients between -1 and +1, confirming that the data followed a normal distribution and enabling the use of parametric statistical techniques for further analysis **(Table 1)**.

Table 1. Skewness and kurtosis statistics for various scales and dimensions

Scale/Dimension	N	Min	Max	Mean	Standard deviation	Skewness	Kurtosis
Digital burnout	413	1.00	4.58	2.27	0.82	0.67	-0.26
Digital aging	413	1.00	4.58	2.27	0.87	0.63	-0.52
Digital deprivation	413	1.00	4.67	2.36	1.00	0.61	-0.52
Digital burnout	413	1.00	4.50	2.18	0.95	0.63	-0.65
Online shopping attitude	413	1.00	4.56	2.77	0.93	-0.04	-0.67

Validity and reliability analysis results for scales used in the study

Table 2. Cronbach's alpha coefficients for the scales and sub-dimensions

Scale	Item count	Cronbach's alpha
Digital burnout scale	24	0.924
Digital burnout-aging	12	0.869
Digital burnout-deprivation	6	0.813
Digital burnout-emotional exhaustion	6	0.829
Online shopping attitude scale	9	0.851

Table 2 displays the Cronbach's alpha coefficients for the scales and their subscales. These results indicate that the scales exhibit high reliability.

Descriptive statistics for the digital burnout Scale and its sub-dimensions are provided. It is observed that the "digital deprivation" sub-dimension has the highest mean value of 2.36, whereas the "digital exhaustion" sub-dimension has the lowest mean value of 2.18.

Analysis of research variables based on demographic factors

- **H2a Hypothesis Rejected**

A t-test was conducted to explore whether gender influenced the Digital Burnout Scale and its sub-dimensions. The results showed no significant differences in digital burnout based on gender, meaning that male and female participants did not experience digital burnout in a statistically distinct manner.

- **H2b Hypothesis Accepted**

A t-test was performed to analyze the impact of marital status on the Digital Burnout Scale and its sub-dimensions. The results indicated that marital status did affect participants' experiences, with married individuals showing higher levels of digital burnout, digital aging, digital deprivation, and emotional exhaustion compared to single individuals. This suggests that being married may intensify feelings of digital burnout.

- **H2c Hypothesis Accepted**

An ANOVA test was employed to examine the influence of age on the digital burnout scale and its sub-dimensions. The analysis revealed significant differences in digital burnout across various age groups. Specifically, younger participants (18-22 years old) showed different scores compared to older groups (23-32, 33-42, and 43 years and older). The results, further analyzed using the post-hoc Tukey test, indicate that age has a notable effect on digital burnout, with younger people possibly experiencing lower levels of burnout.

- **H2d Hypothesis Accepted**

The study explored the connection between education level and digital burnout using an ANOVA test. The findings revealed that education level significantly impacted the Digital Burnout Scale and its sub-dimensions. Notably, differences were observed between individuals with high school, bachelor's, and postgraduate education. The Tukey test identified which education groups were responsible for these differences. Overall, higher levels of education were linked to higher levels of digital burnout.

- **H2e Hypothesis Rejected**

The influence of monthly income on digital burnout was analyzed using an ANOVA test. The results showed no significant differences in digital burnout across different income groups. The p-values for all sub-dimensions, such as digital aging, digital deprivation, and emotional exhaustion, were above the significance level, leading to the conclusion that income does not significantly affect digital burnout.

- **H2f Hypothesis Accepted for the Digital Burnout Scale but Rejected for Digital Aging and Digital Deprivation**

The effect of the profession on digital burnout was examined using an ANOVA test. The results showed a significant difference in overall digital burnout based on profession, with participants from different professions reporting varying levels of burnout. However, there were no significant differences in the sub-dimensions of Digital Aging and Digital Deprivation based on profession. The Tukey test was used to pinpoint the professional groups that contributed to the differences observed in the overall Digital Burnout Scale.

H3a hypothesis-rejected

A t-test was conducted to determine if gender had any influence on the Attitude Towards Online Shopping Scale. The outcome showed no statistically significant difference, with results indicating a standard deviation of 0.918, t = 1.145, and P = 0.253. This suggests that gender does not impact attitudes toward online shopping.

- **H3b Hypothesis-Rejected**

Another t-test was performed to analyze whether marital status affected attitudes toward online shopping. The results revealed no statistically significant impact, with a standard deviation of 0.911, t = 1.189, and P = 0.235. Therefore, marital status does not significantly influence online shopping attitudes.

- **H3c Hypothesis-Rejected**

An ANOVA test was carried out to examine whether the age group affected the attitude towards online shopping scale. The findings, which showed a standard deviation of 0.927, F = 1.551, and P = 0.201, indicated no significant differences between the age groups in terms of attitudes towards online shopping. Therefore, age does not appear to influence attitudes towards online shopping.

- **H3d Hypothesis-Rejected**

Using an ANOVA test, the potential effect of education level on the attitude towards online shopping scale was analyzed. The results, which showed a standard deviation of 1.084, F = 1.720, and P = 0.145, found no significant difference between different education levels. This suggests that education level does not influence attitudes towards online shopping.

- **H3e Hypothesis-Rejected**

The relationship between monthly income and attitudes toward online shopping was examined using an ANOVA test. The results indicated no significant difference, with a standard deviation of 0.943, F = 1.556, and P = 0.185. Thus, income level does not appear to affect online shopping attitudes.

- **H3f Hypothesis-Accepted**

An ANOVA test was employed to assess whether the profession influenced the attitude towards online shopping scale. The results revealed a statistically significant difference, with a standard deviation of 0.94584, F = 5.865, and P = 0.001. Tukey's post-hoc test revealed that the differences were primarily between workers and civil officers, as well as between civil officers and students. Therefore, the profession was found to have a significant effect on online shopping attitudes.

Correlation between digital burnout and online shopping attitude

- **H1 Hypothesis-Accepted**

Regression analysis was performed to explore how digital burnout affects online shopping attitudes. The model was found to be statistically significant, explaining 17.1% ($R^2 = 0.171$) of the variation in attitudes toward online shopping. The correlation coefficient between digital burnout and online shopping attitude was found to be r = 0.416, indicating a positive relationship. Both coefficients in the regression model were significant, and the equation is as follows:

(Attitudes toward online shopping) = 1.698 + 0.473 × (Digital burnout)

This suggests that for every increase of one unit in digital burnout, there is a corresponding increase of 0.416 units in the attitude toward online shopping.

- **Hypothesis Testing: H1b and H1c Accepted, H1a Rejected**

The study analyzed the relationships between the components of digital burnout and online shopping attitudes. Based on the regression results, the following equation was derived:

Attitude towards online shopping = 1.711 - 0.113 × (Digital burnout sub-dimension: digital aging)

This suggests that a 1-unit rise in the digital aging sub-dimension results in a decrease of 0.113 units in the attitude towards online shopping. When the relationship between digital burnout and online shopping attitude was analyzed, excluding the digital aging variable, the findings were statistically significant.

In the next part of the analysis, the regression equation produced was:

Attitude towards online shopping = 1.711 + 0.310 × (Digital burnout sub-dimension: digital deprivation)

This indicated that a 1-unit increase in digital deprivation corresponds to a 0.310-unit increase in the attitude towards online shopping. Similarly, this model was statistically significant after excluding the digital aging variable.

The third regression equation produced was:

Attitude towards online shopping = 1.711 + 0.268 × (Digital burnout sub-dimension: digital emotional exhaustion)

Here, a 1-unit increase in digital emotional exhaustion was expected to increase the attitude towards online shopping by 0.268 units. Upon further analysis, it became evident that digital aging did not significantly influence the dependent variable, but digital deprivation and digital emotional exhaustion were both statistically significant.

The final regression model, combining all relevant factors, was:

$$Y = 1.711 - 0.113 \times X1 + 0.310 \times X2 + 0.268 \times X3$$

Where Y represents the attitude towards online shopping, X1 is digital aging, X2 is digital deprivation, and X3 is emotional exhaustion.

This model shows that an increase in digital aging negatively affects online shopping attitudes, while increases in digital deprivation and emotional exhaustion lead to more positive attitudes.

Correlation between digital burnout and online shopping attitude

The study also explored the correlations between digital burnout and the attitude toward online shopping. All correlation coefficients were statistically significant, with positive relationships observed across all dimensions.

- The correlation between digital burnout and online shopping attitude was moderate (r = 0.416).
- The relationship between digital aging and online shopping attitude was weak (r = 0.293).
- A moderate correlation was also observed between digital deprivation and online shopping attitude (r = 0.453).
- Digital emotional exhaustion showed a moderate positive correlation with online shopping attitude (r = 0.418).

The strongest correlation was found between digital deprivation and online shopping attitude, followed by digital emotional exhaustion and overall digital burnout, while digital aging had the weakest correlation.

Discussion

Burnout is a widespread issue that can affect anyone, manifesting in various contexts, not just in digital environments. However, digital burnout, a condition that arises from excessive screen time, has become an increasing concern. It is characterized by symptoms such as reduced interest, fatigue, anxiety, depression, and a diminished emotional connection to one's work. Identifying digital burnout can be challenging, especially when it stems from activities like excessive social media use, which can interfere with an individual's ability to perform daily tasks. Even when consumers maintain strong beliefs, negative emotions can undermine the trust necessary for building relationships [23].

Conclusion

Online shopping refers to purchasing goods or services via the Internet. This process involves accessing a seller's website, selecting desired products or services, and arranging delivery.

Through t-tests and ANOVA, it was concluded that the sample size was sufficient for the study's analysis, validating its adequacy. The demographic variable analysis indicated that gender and marital status played significant roles in shaping responses. Correlation analysis revealed that digital deprivation, a sub-dimension of digital burnout, had the most significant effect on online shopping attitudes, with a positive linear relationship between the two variables. Furthermore, the study

established that online shopping is positively associated with digital burnout across all dimensions. Among the sub-dimensions, digital deprivation and digital aging were identified as the most influential factors. Regression analysis confirmed the significance of both digital burnout and online shopping attitudes about their sub-dimensions.

Regarding the hypothesis testing, hypothesis 1, stating that digital burnout positively affects the consumer's attitude towards online shopping, was supported. The results indicated that digital deprivation had the highest correlation, followed by emotional exhaustion, and the digital aging dimension had the weakest correlation. These findings affirmed the validity of the hypothesis.

In terms of hypothesis 2, which posited that demographic variables do not strongly influence the relationship between digital burnout and online shopping attitudes, the results showed no significant differences in digital burnout between genders or across its sub-dimensions. This further validated the hypothesis that demographic factors, such as gender, do not exhibit a substantial impact on online shopping attitudes when considering digital burnout.

Suggestions

This study provides valuable insights for future research in digital marketing and consumer behavior. It could serve as a foundation for exploring sectoral differences, particularly in industries like retail and services.

Based on the survey findings, several recommendations for both consumers and businesses are suggested:

- For consumers: Engaging in activities that help manage thoughts and emotions, such as mindfulness practices, may reduce the risk of experiencing symptoms of depression associated with digital burnout.
- For businesses: Strengthening real-world social connections and fostering positive interactions with consumers can counterbalance the loneliness often felt in digital spaces, leading to a more satisfying and productive consumer experience.

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