THE INFLUENCE OF ATMOSPHERIC CUES ON IMPULSIVE BUYING BEHAVIOR: EXPLORING THE ROLES OF UTILITARIAN AND HEDONIC BROWSING

UTJECAJ ATMOSFERSKIH PODRAŽAJA NA IMPULZIVNO KUPOVNO PONAŠANJE: ISTRAŽIVANJE ULOGA UTILITARNOG I HEDONISTIČKOG PREGLEDAVANJA

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Mehmet Ozan Karahan[a], Fatih Şahin[b]

[a] Eşme Vocational School, Uşak University, 64600, Uşak, TURKEY, e-mail: mozan.karahan@usak.edu.tr

[b] Gönen Vocational School, Bandırma Onyedi Eylül University, 10900, Balıkesir, TURKEY, e-mail: fsahin@bandirma.edu.tr

Abstract

Purpose – This research study examines the impact of atmospheric cues, such as content, design, and navigation, on impulsive buying behavior, focusing on the mediating roles of utilitarian and hedonic browsing.

Design/Methodology/Approach – The study utilized a quantitative method approach, employing SPSS and AMOS for data analysis. The convenience sampling method was used to select 363 participants as the target population, consisting of individuals 18-65 years old living in Turkey who had experience using two prominent e-store platforms. Data analysis was conducted using both descriptive and inferential statistics to describe the demographic profile and structural equation modelling (SEM) to examine the causal relationships between variables.

Findings and Implications – Results showed that design and navigation features positively influence impulsive buying, but they did not significantly impact utilitarian behavior. Atmospheric features affected impulsive buying directly and indirectly. Content cues positively influenced utilitarian browsing but did not significantly affect hedonic browsing. Hedonic browsing mediated the re-

Sažetak

Svrha Istraživanje ispituje utjecaj atmosferskih podražaja, poput sadržaja, dizajna i navigacije, na impulzivno kupovno ponašanje s naglaskom na medijacijske uloge utilitarnog i hedonističkog pregledavanja.

Metodološki pristup U istraživanju je korištena kvantitativna metodologija, uz primjenu SPSS-a i AMOS-a za analizu podataka. Metodom prigodnog uzorkovanja odabrano je 363 ispitanika kao ciljana populacija osoba u dobi od 18 do 65 godina s prebivalištem u Turskoj te s iskustvom korištenja dviju istaknutih platformi za e-trgovinu. Podatci su analizirani korištenjem deskriptivne i inferencijalne statistike za opis demografskog profila te modeliranjem strukturnih jednadžbi (SEM) za ispitivanje uzročno-posljedičnih odnosa između varijabli.

Rezultati i implikacije Rezultati su pokazali da čimbenici dizajna i navigacije pozitivno utječu na impulzivnu kupovinu, ali nisu značajno utjecali na utilitarno ponašanje. Atmosferski čimbenici izravno su i neizravno utjecali na impulzivnu kupnju. Podražaji vezani uz sadržaj pozitivno su utjecali na utilitarno pregledavanje, ali ne značajno i na hedonističko. Hedonističko pregledavanje posredo-

lationship between design and navigation cues and impulsive buying. These findings suggest that e-store platforms should strategically design e-stores with visually appealing designs, including vibrant colors, attractive images, and easy navigation to promote both hedonic browsing and attract impulsive purchases. To encourage more shopping time, e-store managers should also focus on navigation and personalized recommendations while avoiding overwhelming customers with excessive information.

Limitation – The study's limitations include reliance on self-reported data, which may be subject to bias, and the use of a convenience sample that may not fully represent the diversity of online shoppers. Further research should employ longitudinal studies and a broader demographic to validate these findings further.

Originality – This research study contributes to literature by integrating the concepts of atmospheric cues, hedonistic and utilitarian browsing, and their combined effects on online impulsive buying behavior. It offers a nuanced understanding of how different browsing motivations mediate the impact of online atmospherics on consumer behavior, providing practical insights for e-store design strategies.

Keywords: atmospheric cues, hedonic browsing, utilitarian browsing, online impulsive buying behavior, mediation effect

valo je u odnosu između čimbenika dizajna i navigacije te impulzivne kupnje. Ovi nalazi sugeriraju da bi platforme e-trgovina trebale strateški dizajnirati online prodavaonice s vizualno privlačnim dizajnom, uključujući žive boje, atraktivne slike i jednostavnu navigaciju, kako bi promovirale hedonističko pregledavanje i omogućile impulzivnu kupnju. Kako bi potaknuli na više vremena za kupovinu, menadžeri online prodavaonica trebali bi se također usredotočiti na navigaciju i personalizirane preporuke izbjegavajući pritom preopterećivanje kupaca prekomjernim informacijama.

Ograničenja Ograničenja uključuju oslanjanje na samoprocjene podataka (podatke dobivene samostalnim ispunjavanjem ispitanikovih upitnika) koji mogu biti pristrani te korištenje prigodnog uzorka koji možda u potpunosti ne predstavlja raznolikost online kupaca. Buduća istraživanja trebala bi uključivati longitudinalne studije i širu demografsku skupinu kako bi se dodatno potvrdili ovi nalazi.

Doprinos Istraživanje doprinosi literaturi integriranjem koncepata atmosferskih podražaja, hedonističkog i utilitarnog pregledavanja te njihovih kombiniranih učinaka na impulzivno online kupovno ponašanje. Nudi nijansirano razumijevanje kako različite motivacije pregledavanja posreduju u utjecaju online atmosfere na ponašanje potrošača pružajući praktične uvide za strategije dizajna online prodavaonica.

Ključne riječi: atmosferski podražaji, hedonističko pregledavanje, utilitarno pregledavanje, online impulzivno kupovno ponašanje, učinak medijacije

1. INTRODUCTION

As consumers embrace today's fast-emerging and prevalent electronic stores (e-stores), businesses continually search for ways to enchant and engage customers, establish customer patronage, enhance customer experience, and convert window shoppers into buyers. E-stores are also more versatile than their physical peers, allowing businesses to conveniently craft a shopping atmosphere that provides crucial stimulation and information elements for consumers. Three main components or cues, content design and navigation, are in the structure of e-stores (Floh & Madleberger, 2013). All the thorough and necessary information that consumers need to know about the things they are purchasing is defined as content cues (Xu et al., 2020), while the overall visual appearance of an e-store, which includes visuals such as colors, typefaces, forms, and animations that should be coherent, visually pleasing, and enchant e-store visitors, are called design cues (Hasan, 2016). Also, the navigation feature of an e-store, which is easy to use and user-friendly, reduces users' cognitive effort, positively affecting consumers' sentiments, increasing pleasure from e-store browsing, and encouraging impulsive buying (Wadera & Sharma, 2018).

Atmospheric cues are decisive in determining customers' positive or negative sentiments, which can affect attitudes and intentions toward buying, leading to instant and unplanned actions (Wu et al., 2014; Chen et al., 2018; Sarah et al., 2021). Additionally, e-store atmospheric cues motivate customers to engage in activities of utilitarian (Martínez-López et al., 2014) or hedonic browsing (Park et al., 2012). It means that while browsing, customers gather information and, in doing so, they also inspect market offers or enjoy the experience (Zheng et al., 2019). Some studies show that strong desires and enjoyable experiences result in impulsive buying behavior (Leong et al., 2018; Wadera & Sharma, 2018; Zheng et al., 2019). However, since goal-oriented customers primarily focus on their needs, they also have robust cognitive awareness, prioritize time, and cost efficiency, and typically refrain from such purchases (Park et al., 2012; Rezaei et al., 2016; Zheng et al., 2019). Thus, browsing is also a crucial activity in the online shopping experience, yet it frequently does not result in impulsive buying behavior. E-stores must continuously explore strategies to engage potential customers and introduce paths throughout the browsing process that could ultimately lead to a purchase decision. To achieve this, they need to strike a balance between utilitarian and hedonic elements in their atmospheric cues of e-stores, effectively attracting browsers and first-time visitors (Park et al., 2012; Gunden et al., 2020).

There is a noticeable research gap in studying online shopping behavior, especially concerning Turkish customers, which has remained under-researched. As e-stores and online shopping remain a relatively emerging trend in Turkey, there is significant potential to explore how various factors influence Turkish shoppers. This study specifically targets two prominent e-store platforms, recognizing the need to examine impulsive buying behavior. It aims to enhance the understanding of consumer behavior and the phenomenon of impulse buying in the online environment.

Floh and Madlberger (2013) developed a framework for understanding impulse buying behavior by considering the effects of atmospheric cues, shopping enjoyment, and browsing on impulsive buying behavior. They recommended that these factors be incorporated into further studies. Thus, both atmospheric cues and browsing factors were used for this research. However, they also identified store-specific factors as the most challenging elements to manage. Therefore, this aspect was also fulfilled by accepting customers who have an e-store shopping experience with high recognition and the highest number of followers in Turkey as the sample mass. Wadera and Sharma (2018) further suggested that retailers should leverage both hedonic and utilitarian browsing effectively by crafting targeted marketing strategies to

engage potential buyers within the online store environment. This aspect was addressed by approaching the browsing factor not as a single construct but by dividing it into two distinct dimensions: hedonic and utilitarian, as suggested by Wadera and Sharma (2018). Additionally, the mediating roles of utilitarian and hedonic behavior between atmospheric cues and impulse purchases were explored, as an area of research that remains very limited. Therefore, this research can contribute to the existing literature and offer valuable insights to academics, marketers, and e-store designers into optimizing online stores and enhancing the overall shopping experience.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. Online atmospheric cues

Both physical and online stores have a variety of atmospheric signals that customers receive and process, affecting their emotions, intentions, and behaviors regarding revisiting and repurchasing (Koo & Park, 2017) called atmospheric cues. The atmospheric cues of a specifically well-designed e-store platform trigger customers' favorable or unfavorable sentiments (Wu et al., 2014), increase time consumption while browsing, market offerings evaluation (Sarah, 2020), and stimulate the propensity to purchase (Dailey, 2004; Correia Loureiro, 2019). Chang & Chen (2008) grouped e-store environment features into four components: technology, appearance, content quality, and uniqueness, while other studies group these features as content, design, and navigation (Longdong & Pangemanan, 2015).

E-store content is required to contain essential, comprehensive, and detailed information, counting details about the market offers, their specifications, prices, return policies, and contact information on an e-store to influence the customer's decision-making process and the consequences of actions (Xu et al., 2020). Personalized, relevant, precise, accurate, and complete e-store contents (Kumar & Ayodeji, 2021) provide convenience for customers facing high task-relevant cues (Eroglu et al., 2001). Additionally, filtering various types of content increases information performance, which is crucial for saving time and energy for customers. It enhances the overall customer experience by focusing on desired products and labels and minimizing irrelevant or distracting information (McKechnie & Nath, 2016) to increase the perceived informativeness, which relates positively to utilitarian customer purchases (Setyani et al., 2019), thus ultimately leading to repeat purchases and establishing customer loyalty (Kumar & Ayodeji, 2021). Tang and Zhang (2020) suggest that a positive relationship exists in an e-store environment between the level of the provided information and the perceived utilitarian benefits; not only the quantity but also the quality of information enhances the utilitarian browsing experience (Chen et al., 2018). In line with the literature, the following hypothesis was established:

H_1: The content of e-stores that customers prefer positively affects their utilitarian browsing.

Poor information quality results in customers being uncomfortable and decreasing their enjoyment. On the contrary, high-quality information provided by e-stores enhances the customer's enjoyment in the shopping experience while browsing and interacting with marketing offers (Chen et al., 2018). The quality of information determines the quality level of the e-store environment that supports the customer's emotions related to hedonic browsing (Kimiagari & Asadi Malafe, 2021). While providing e-store content and creating enjoyable shopping experiences, it transforms online shopping into a leisure-time activity. It improves the likelihood of attracting customers (Turkyilmaz et al., 2015) and their revisiting tendencies (Floh & Madlberger, 2013). In line with the literature reviewed, a further research hypothesis is provided below:

H_2: The content of e-stores that customers prefer positively affects their hedonic browsing.

Even low task-relevant cues are less likely to influence customers' shopping goals, but they increase enjoyment and happiness from unplanned purchasing decisions (Eroglu et al., 2001). The e-store content is able to transform online shopping into a leisure activity and provide amicable shopping experiences, increasing the likelihood of customers revisiting the e-store and making unplanned purchases (Floh & Madlberger, 2013). Consequently, the quality of e-store content is crucial in triggering customers' impulsive purchasing behavior throughout the shopping process (Wadera & Sharma, 2018; Tariq et al., 2019; Kimiagari & Malafe, 2021). Accordingly, this study put forward the following hypothesis:

H_3: The content of the e-store that customers prefer has a positive impact on their impulsive buying behavior.

Aside from the content in e-stores, the content's presentation style is crucial. Thus, e-stores have substantial investments in design development to optimize acquiring advantages (Chen et al., 2020). E-store design relates to its visual components, notably the color schemes employed and the overall structure (Floh & Madlberger, 2013), and a holistic approach requires improving the overall e-store design by arranging various components, such as images, written content, pop-up dialogs, hyperlinks, multimedia (Turkyilmaz et al., 2015), and also the interactivity (Zheng et al., 2019), which help establish a good customer first impression and assessment. Establishing a dynamic e-store by increasing interactivity based on customers' activities allows e-stores to provide a customized, dynamic experience (Marzuki et al., 2016). An effectively designed e-store that refrains from inadequate features, such as miniature fonts, harsh color preferences, and inappropriate graphics decreases customer frustration and motivates goal-oriented browsing (Hasan, 2016). E-store design enables purposeful and utilitarian browsing, and during the search process, customers attain their goals with the help of the unique visual appeal of the design (Chen et al., 2019). E-store design also influences the customers' first impressions and opinions about the e-store (Zheng et al., 2019). Thus, the visual appearance increases the chance of customers browsing the e-store to acquire utilitarian value. Therefore, the hypothesis is postulated as follows:

H_4: The design of e-stores that customers prefer positively affects their utilitarian browsing.

The e-store design also simulates consumers' enjoyment of online shopping, which mediates between e-store navigation and browsing (Floh & Madlberger, 2013). Zheng et al. (2019) suggest that high-resolution images and videos enhance the visual appeal of websites and make it easier for consumers to have fun while browsing. Thus, the aesthetic appeal of a website impacts hedonic browsing, leading to consumers experiencing pleasure, comfort, and joy as an emotional response to the stimuli they experience (Jasman et al., 2023). Hence, it is hypothesized:

H_5: The design of e-stores that customers prefer positively affects their hedonic browsing.

Visual appearance and mood-relevant cues encompass the color and graphical style, complexity, organization, and other design elements of an e-store (Tang & Zhang, 2020). Hence, e-store design increases the likelihood of the e-store and promotes the customer's impulsive buying behavior. Chen et al. (2020) assert that visually appealing design encourages impulsive purchases since these factors increase customers' enjoyment and arousal levels. Thus, visually appealing e-stores positively affect the customers' e-store impulse purchases, and the following hypothesis proposed basis of these assumptions:

H_6: The design of e-stores that customers prefer has a positive effect on their impulsive buying behavior.

As e-stores' technological capabilities increase the quantity of information provided, naviga-

tion features are essential for customers to conveniently reach the specific information they require (Koo & Park, 2017). Effective navigation capabilities that are intuitive, convenient, and logically organized provide a user-friendly interface, easy access to desired content, and minimize the customers' effort in the e-store environment (Sarah et al., 2021). Additionally, they reduce customers' cognitive effort to a minimum and enhance the customer experience (Floh & Madlberger, 2013). An easy-to-use interface and the elimination of unnecessary displays, links, options, or clicks impact customers' experiences significantly because these factors make shopping easier (Hasan, 2016), especially for first-time customers who seek advice and details about e-stores and their suggested market offerings (McKechnie & Nath, 2016). Also, a customer-friendly navigation system with an engaging visual design significantly enhances the e-stores, thus fulfilling the needs of goal-oriented users (Chen et al., 2019). Hence, the following hypothesis is postulated:

H_7: The navigation of e-stores that customers prefer positively affects their utilitarian browsing.

Another critical point in the e-store environment is establishing and ensuring a user-friendly and enjoyable navigation system for customers to have a seamless and logical experience (Wadera & Sharma, 2018), thus requiring less internal memory, and decreasing usage of the cognitive effort by customers in such an e-store environment. Similarly, providing well-defined and practical guidance for customers through product discovery and the purchase decision process eliminates the chances of disorientation or increased cognitive effort (Correia Loureiro, 2019), increasing the likelihood of consumers engaging in enjoyable browsing activities on the e-store. Floh and Madlberger (2013) claim that a well-designed navigational layout activates and positively impacts customer emotions. The increase in positive emotions, such as pleasure during shopping, determines the customers' hedonic and impulsive buying behavior. Thus, it is hypothesized:

H_8: The navigation of e-stores that customers prefer positively affects their hedonic browsing.

Customers who visit an e-store feel energized and stimulated, and this arousal results in enjoyment and pleasure while navigating an e-store (Correia Loureiro, 2015). The ease of navigation of e-stores elicits favorable customer feelings, such as impulsive online buying (Floh & Madlberger, 2013). A well-designed e-store navigation interface also impacts customers' impulsive buying behavior by encouraging them to make unplanned purchases (Wadera & Sharma, 2018). Therefore, the following hypothesis was developed in this study:

H_9: The e-store navigation that customers prefer has a positive impact on their impulsive buying behavior.

2.2. Browsing behaviors

Browsing is customers' most basic behavior, seeking information, supporting decision-making during the purchase, and seeking enjoyment (Zheng et al., 2019). Thus, browsing as either a relaxation-related leisure activity, a hedonic browsing behavior, or an external search behavior exploring specific goal-oriented information is a utilitarian browsing behavior.

Utilitarian browsing involves purposeful actions, risk reduction methods, and fulfilling information search goals (Zheng et al., 2019). Utilitarian browsing behaviors are rational, goal-oriented, and economically motivated, distinguishing them from hedonic motives. Goal-oriented customers also seek comprehensive product information, such as price, specifications, or details (Astuti & Nindyaswari, 2022). The customer's experience of benefiting from analyzing products and maintaining brand knowledge or market offer is also considered the utilitarian browsing experience (Park et al., 2012). Giving helpful suggestions in browsing helps consumers complete tasks, increasing the likelihood of purchasing before leaving the e-store (Gunden et al., 2020). Customers value peer-reviewed information, so an e-store's helpful browsing

process for finding peers' product recommendations is crucial (Chen et al., 2020). Utilitarian value generally refers to cognitive attitudes like the economic value of money, convenience, and time-saving actions (Rezaei et al., 2016). Additionally, impulsive buying behavior is a quick, complicated, pleasure-driven conduct that ignores cautious and thoughtful consideration of alternatives (Zheng et al., 2019). This behavior defies logical, economic, and decision-making consumer behavior (Sharma et al., 2010). Utilitarian browsing and impulsive purchasing are distinct consumer behaviors. Utilitarian browsing reduces impulsive online buying behavior (Park et al., 2012). Hence, the hypothesis formulated according to the pertinent literature is as follows:

H_{10}: Utilitarian website browsing that customers prefer impacts their online impulsive buying behavior negatively.

Hedonic motivations shape customer behaviors based on entertainment, amusement, and pleasure during shopping, significantly influencing impulse buying tendencies (Zheng et al., 2019). Hedonic behaviors are influenced by customers' emotional responses, aspirations, and aesthetic concerns (Chih et al., 2012). They follow market trends and fashion to enhance their buying experience and satisfy their needs (Madhu et al., 2023). Hedonic motives also arise from anticipating fun and enjoyment during shopping, which improves spending time and increases impulsive buying behavior (Astuti & Nindyaswari, 2022).

The hedonic browsing experience involves enjoying websites and gratifying senses, emotions, and fun (Gunden et al., 2020), aiming for a pleasant shopping experience regardless of purchase (Wadera & Sharma, 2018). It improves customer entertainment and product discovery while also encouraging product exploration and social interaction (Chen et al., 2020). Hedonic emotional and social shopping factors form a complex consumer behavior structure, allowing customers to enjoy a pleasant shopping experience through hedonic web browsing (Gunden et al., 2020). Hedonic motivation is also a key factor in driving impulsive purchases, with studies suggesting that creating tempting opportunities (Leong et al., 2018) and capturing the fun aspects of shopping can also encourage such purchases (Wadera & Sharma, 2018). Thus, this research proposes the following hypothesis:

H_{11}: Hedonic website browsing that customers prefer has a positive impact on their online impulsive buying behavior.

2.3. Online impulsive buying

Impulsive buying is a sudden and emotionally charged behavior that involves making rapid decisions without considering alternative options or thoughtful consideration (Park et al., 2012). Impulsive buying is characterized by immediate and unplanned purchases made online without previous planning, generally driven by hedonistic motives in consumer behavior (Astuti & Nindyaswari, 2022). Impulsive buying is driven by hedonistic motives in consumer behavior, influenced by various factors, such as consumers' sentiments, financial status, personality traits, low cognitive control, time constraints, social influences, location, and cultural elements (Sarah, 2020). Internet transactions often lead consumers to overspend, as they may not perceive it as spending money (Turkyilmaz et al., 2015); compared to traditional impulsive behavior, customers shopping online tend to be more impulsive. Moreover, the simplicity of selecting a product and quickly clicking to purchase it creates temptation and increases the likelihood of impulse buying. The internet's characteristics also reduce the ability of consumers to control their impulsive buying tendencies. The convenience of easy product access through one-click ordering, hassle-free delivery, and the absence of social pressure can encourage impulsive actions (Aragoncillo & Orús, 2018).

Previous studies on the relationship between hedonic and utilitarian browsing have employed models like the Stimuli-Organization-Response (S-O-R) model, PAD Theory, and Technology Acceptance Model (TAM) to explore these

dynamics. These models often act as mediators among various variables in research frameworks. According to PAD Theory, atmospheric cues influence approach-avoidance behavior through three emotional states: pleasure (P), arousal (A), and dominance (D). Pleasure refers to positive emotional reactions, such as joy or happiness, while arousal relates to heightened emotional states, such as excitement or stimulation (Kulviwat et al., 2007).

For instance, Koo and Park (2017) found that navigation and information cues on Amazon.com influence pleasure, which subsequently affects impulsive buying. They highlighted that Amazon was chosen for its utilitarian shopping focus, emphasizing quick information retrieval and diverse alternatives. This suggests a potential mediating effect of utilitarian browsing between website quality and impulsive buying, following a pathway informed by PAD Theory. Similarly, Jasman et al. (2023) discovered that hedonic browsing partially mediates the effects of interpersonal influence, visual appeal, and convenience on impulse buying behavior, based on the S-O-R model. Zheng et al. (2019) used the same model and found that situational factors like portability, visual appeal, and interpersonal influence impact hedonic and utilitarian browsing differently. Moreover, utilitarian browsing influences impulsive buying motives indirectly through hedonic browsing.

The findings indicate that website quality attributes can alter browsing patterns, which, in turn, mediate impulse buying behaviors. Kimigari and Asadi Malafe (2021), using both the S-O-R and TAM models, concluded that information quality affects impulse buying via utilitarian browsing, while navigation influences it through hedonic browsing. However, few studies have quantified the mediating effects of these variables. Much of the literature (Koo & Park, 2017; Setyani et al., 2019; Zheng et al., 2019; Tang & Zhang, 2020) focuses on observing the direct effects of hedonic and utilitarian browsing online on impulsive buying rather than measuring their mediation roles.

Atmospheric cues, for example, can trigger pleasurable emotional reactions that influence instant buying behavior (Koo & Park, 2017). Content cues, such as perceived informativeness and entertainment, can affect utilitarian and hedonic motivations, which, in their turn, influence online impulsive buying (Setyani et al., 2019). Design and task-related cues impact perceived utilitarian and hedonic affordances, which influence behavioral intentions (Tang & Zhang, 2020). Factors like information quality and social interaction also play a significant role in influencing consumer intentions toward utilitarian and hedonic browsing, ultimately affecting impulsive buying (Chen et al., 2019).

The literature underscores that both utilitarian and hedonic browsing can act as mediators depending on the research context. While there is some evidence suggesting that browsing behavior can function as a moderator, this is less common. According to Namazi and Namazi (2016), mediators must causally result from the independent variable (IV) and act as a causal antecedent of the dependent variable (DV). Conversely, moderators are not the causal result of the IV. In this research study, utilitarian and hedonic browsing are considered causal antecedents of impulsive buying, influenced by store environment attributes represented as antecedents in the model.

Many studies position browsing behavior as a mediator between variables like website characteristics, customer motivations, or information presentation and outcomes like purchase intention or impulsive buying (Namazi & Namazi, 2016; Rezaei et al., 2016; Hayu et al., 2023). For example, utilitarian browsing—characterized by goal-oriented behavior and information acquisition—mediates relationships such as price-saving orientation and persuasion (Gunden et al., 2020; Stefko et al., 2022). When consumers are motivated by cost-saving, utilitarian browsing can influence persuasion and purchase intentions.

Similarly, Liu et al. (2024) demonstrated that utilitarian browsing mediates the relationship

between positive attitudes toward live streaming and impulse purchases. Utilitarian browsing also mediates the relationship between website personality traits and online impulse buying behavior (Rezaei et al., 2016) and between utilitarian value and the urge to buy impulsively (Zhang et al., 2018; Astuti & Nindyaswari, 2022). Additionally, it was found to partially mediate product variety selection and e-impulse buying for apparel (Park et al., 2012).

Hedonic browsing, which focuses on enjoyment and entertainment, mediates relationships between factors like visual attractiveness, interpersonal influence, convenience, and impulse buying. Studies show that fun and engaging website features shape browsing behavior, influencing purchase impulses (Jasman et al., 2023). Hedonic browsing also mediates relationships such as perceived social isolation and e-impulse buying through stress (Jabutay & Limpachote, 2024) and product information presentation (Fan et al., 2024). Furthermore, it can mediate the relationship between hedonic value and the urge to buy impulsively (Astuti & Nindyaswari, 2022) and between hedonic motives and impulse buying (Gültekin & Özer, 2012). Related to the current literature discussion, the research hypotheses on the mediation role of utilitarian and hedonic browsing relationships with atmospheric cues and impulsive buying are as follows:

H_{12}: Utilitarian browsing mediates the relationship between the e-store content that customers prefer and their online impulsive buying behavior.

H_{13}: Utilitarian browsing mediates the relationship between the e-store design that customers prefer and their online impulsive buying behavior.

H_{14}: Utilitarian browsing mediates the relationship between the e-store navigation that customers prefer and online impulsive buying behavior.

H_{15}: Hedonic browsing mediates the relationship between the e-store content that customers prefer and their online impulsive buying behavior.

H_{16}: Hedonic browsing mediates the relationship between the e-store design that customers prefer and their online impulsive buying behavior.

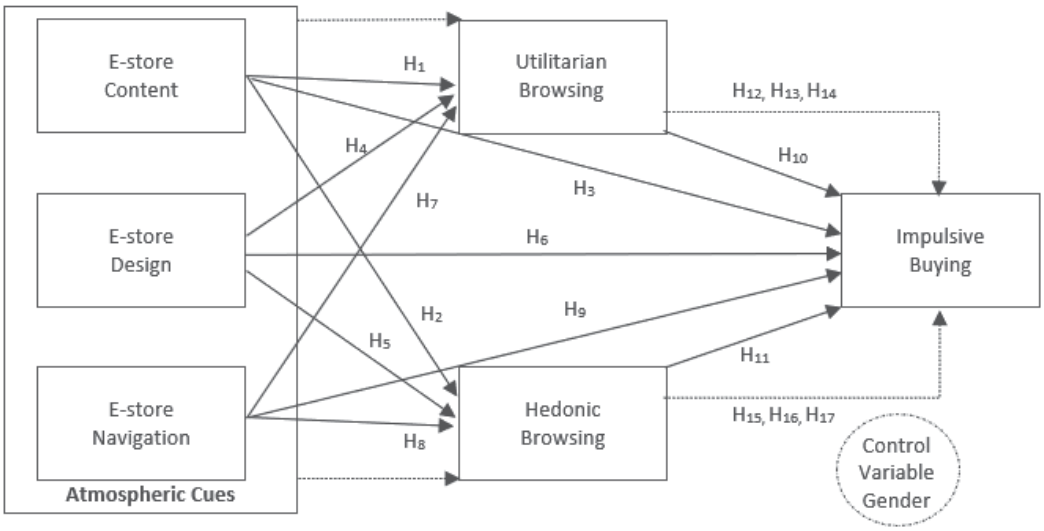
H_{17}: Hedonic browsing mediates the relationship between the e-store navigation that customers prefer and their online impulsive buying behavior.

Furthermore, gender is utilized as a control variable, and the influence of e-store content, e-store design, e-store navigation, utilitarian behavior, and hedonic behavior on impulsive purchase behavior is examined.

3. RESEARCH MODEL AND METHODOLOGY

This study examines the impact of e-store atmospheric cues on hedonic and utilitarian buying behaviors and their mediation in customer impulsive buying behavior. It also investigates gender differences in browsing types, impulsive buying behavior, and the relationship between e-store content, navigation, and design. Based on previous studies (Floh & Madlberger, 2013; Kimiagari & Asadi Malafe, 2021), the research model is given in Figure 1. The study's theoretical framework is outlined, with each hypothesis and rationale based on previous research.

FIGURE 1: Research model



Source: Author's own research.

A self-administered face-to-face questionnaire survey was conducted to gather the data. Before the main data collection, the questionnaire was pretested with 20 participants based on their shopping experience. None of the pretest participants reported any problems with the questionnaire's wording, layout, format, or length, and there were no concerns about the time required to complete the survey. The research data were collected from individuals in Turkey aged 18-65 who had been following two prominent e-store platforms in the country and had previous experience shopping on them. For the individuals who verified their online shopping history, consent was obtained to include them in the survey. The sample frame included only those who had completed online transactions. Turkey is a country known for its rapid digitization and high internet usage (Statista, 2023a). The country has a 73% active social network penetration rate, compared to the global average of 59%. Turkey's growth rate is 13.57%, compared to 11.16% of global retail e-commerce sales (Statista, 2023b). This study used convenience sampling and an online questionnaire-based survey method to collect data from 363 respondents. They were mostly male, accounting for 53.2% participants, with 46.8% female participants. The age distribution was 70.5% between 18-25, 14% between 26-40, 11.9% between 41-55, and 3.6% older than 56. The sample data showed that 47.7% of participants had an income of USD 0-200, 24.9% between USD 200 and 480, 13.7% between USD 480 and 800, and 13.7% more than USD 800. This study used structural equation modeling to assess research assumptions, achieving a 95% confidence interval and a margin of error of 5.4% for a 650,000-population size (Schumacker & Lomax, 2015; Singh & Masuku, 2014). The data were collected from the followers of the two most popular online shopping platforms, and the study provides valuable insights into the influence of digitalization and social media in Turkey.

Structural equation modeling studies suggest a 10:1 (Nunnally, 1978) or 5:1 (Hatcher & Stepanski, 1994) ratio between participants and items for research. By dividing scale items by valid data points, this study's 12:1 ratio was calculated. G*Power software was also used to determine the adequacy of the sample size obtained from the participants for analysis using the structural equation model, the recommended

sample size calculator for SEM (Faul et al., 2009). The analysis was based on an effect size of 0.15, a significance level of 0.05, and a calculated power value of 0.95, well above the minimum threshold of 0.80 recommended by Cohen (1988). Therefore, a sufficient sample size for this research was 138. This ensures that an adequate number of samples is used for SEM analysis, with AMOS and SPSS software employed to analyze the research hypotheses.

3.1. Measurement

The research model structure had three dimensions: atmospheric cues, browsing types, and impulsive buying. Atmospheric cue components of the e-store were assessed in three constructs: content, design, and navigation. The atmospheric cues consisted of five scale items for electronic store content (EC), five items for electronic shop design (ED), and electronic store navigation (EN). The scale consists of four items adapted from Koo & Park (2017). The study model examines browsing behavior in two distinct groups: hedonic and utilitarian. Four items were utilized to measure hedonic browsing (HB), and utilitarian browsing (UB) was measured with five items adapted from Park et al. (2012). Impulsive buying behavior (IBB) was measured with five items from Goel et al. (2022). The questionnaires utilized a 5-point Likert scale. Scales and items are provided in Table 1.

TABLE 1: Scales and items

Constructs and items
E-Store Content (EC)
EC1 The content of the e-store that I prefer for shopping appears to be up to date.
EC2 The content of the e-store that I prefer for shopping provides accurate information.
EC3 The information on the e-store that I prefer for shopping is helpful.
EC4 The content of the e-store that I prefer for shopping is informative.
EC5 There is enough information on the content of the e-store that I prefer for shopping.
E-Store Design (ED)
ED1 The e-store that I prefer uses an attractive layout.
ED2 The e-store that I prefer, uses attractive colors.
ED3 The e-store that I prefer uses visually pleasing design.
ED4 The e-store I prefer displays its products attractively.
ED5 The e-store I prefer uses attractive images.
E-Store Navigation (EN)
EN1 The e-store that I prefer looks easy to navigate through.
EN2 The e-store that I prefer has valid links.
EN3 Navigation through the e-store that I prefer is logical.
EN4 One can find information easily in the e-store that I prefer.
*Utilitarian Web Browsing (UB***)**
UB1 I browse to buy better items in terms of price or quality from the e-store I prefer.
UB2 I browse the shopping websites I prefer to gather information about products.
UB3 I look around the shopping websites I prefer to compare shopping.
UB4 I browse the shopping websites I prefer in order to get as much additional value as possible.
UB5 I browse the shopping websites I prefer for efficient shopping online.

Hedonic Web Browsing (HB)
HB1 While browsing shopping websites I prefer; I can forget my problems and feel relaxed
HB2 During browsing the shopping websites I prefer; I am very excited like playing something.
HB3 I enjoy browsing the shopping websites I prefer so much that I lose track of time.
HB4 I browse the websites I prefer just for fun.
E-impulse Buying Behavior (IBB)
IBB1 When I bought the item, I felt an unprompted urge to buy it.
IBB2 I couldn't help myself when I saw the item.
IBB3 Without intending to I ended up purchasing the thing.
IBB4 I bought the item on the heat of the moment.
IBB5 I bought the thing rashly.

Source: Author's own research.

3.2. Data analysis

Factor analysis is crucial in multivariate analyses to reveal relationships between variables and prevent deviation. Exploratory factors (EFA) and confirmatory factors (CFA) analysis are essential to ensure the reliability and validity of scales. Bartlett's Test of Sphericity (BTS) and Kaiser-Meyer-Olkin (KMO) tests assess data suitability for factor analysis. The KMO test value was 0.923, indicating that p>0.6, which means that the data set met sampling adequacy for factor analysis, and the data explained 75.89% of the total variation across the six factors.

From the results of the multicollinearity test and the respective VIF results, with the IBB dependent variables EC 0.185, UB 1.240, ED 1.708, EN 1.430, HB 1.516, this indicates that there are no multicollinearity issues of the sample data, as the values of VIF are less than 2.5 (Johnston et al., 2018). As skewness and kurtosis values were checked for any non-normality issues, the results show them (EC skew -0.411, kurt -0.341; UB skew -0.190, kurt -0.588; ED skew -0.592, kurt -0. 791; EN Skew -0.612, kurt -0.275; HB Skew -0.386, kurt -0.832; IBB skew -0.944, kurt -0.512) between the required threshold of +/-2 skewness (Byrne, 2010; Hair et al., 2014) and kurtosis (George & Mallery, 2003), so there was no concern about non-normality.

The statistical analysis of BTS yields a chi-square value of 6735.897, indicating sufficient data for CFA analysis. Each component's factor loadings and Cronbach's alpha values were associated with the respective factors, indicating high internal consistency. The SPSS AMOS 24 program was used to examine the CFA components of the research construct, resulting in model fit indices satisfying the required criteria. The p-value is above 0.01, indicating statistical non-significance.

The model fit indices results are as follows: the $\chi 2$ value is 347.034 with 326 degrees of freedom, resulting in a $\chi 2/df$ ratio of 1.065. Additionally, the CFI is 0.997, the SRMR is 0.0296, the RMSEA is 0.014, the NFI is 0.949, the RFI is 0.941, the AGFI is 0.916, and the PClose is above 0.5. The results of the CFA revealed that the model fit indices satisfied the required criteria (Hu & Bentler, 1999).

Convergent and discriminant validity are crucial for assessing construct validity in SEM (Cheung et al., 2024). Table 2 provides Composite Reliability (CR), Average Variance Extracted (AVE), Maximum Shared Variance (MSV), and Maximum Reliability H (MaxR(H)) values. The square root of AVE values is shown in diagonal cells. EFA and CFA factor loading values are also provided. Each measurement model component's

CR values are above 0.7, AVE values are below CR values and above 0.5, and CFA loadings are above the threshold value of 0.7. Evaluation results show no issues with convergent validity (Hair et al., 2014).

To analyze if there were any discriminant validity issues in this research measurement model, the square root of the AVE values of the corresponding construct should be above the correlation between constructs (Fornell & Larcker, 1981), as

TABLE 2: Model measurements

Variables/Items	$\bar{x}$	σ	EFA(λ)*	CFA (λ)	t value
E-store Content (EC)	α= 0,921, CR=0.922, AVE=0.703, MSV=0.180, MaxR(H)=0.923				
EC1	3.511	0.966	0.863	0.859	-
EC2	3.456	0.936	0.838	0.826	18.645
EC3	3.447	0.974	0.851	0.835	19.132
EC4	3.456	0.940	0.844	0.831	18.997
EC5	3.447	0.916	0.874	0.843	19.388
E-store Design (ED)	α= 0.914, CR=0.914, AVE=0.681, MSV=0.361, MaxR(H)=0.915				
ED1	3.720	0.973	0.798	0.854	-
ED2	3.775	0.893	0.836	0.833	18.956
ED3	3.778	0.922	0.754	0.807	17.772
ED4	3.809	0.948	0.775	0.817	18.193
ED5	3.793	0.917	0.737	0.813	17.948
E-store Navigation (EN)	α= 0.889, CR=0.895, AVE=0.682, MSV=0.312, MaxR(H)=0.898				
EN1	3.821	0.894	0.796	0.823	-
EN2	3.827	0.889	0.814	0.814	14.612
EN3	3.830	0.898	0.823	0.815	12.293
EN4	3.815	0.897	0.792	0.813	12.358
Utilitarian Browsing (UB)	α= 0.906, CR=0.908, AVE=0.665, MSV=0.180, MaxR(H)=0.911				
UB1	3.593	0.865	0.799	0.815	-
UB2	3.535	0.869	0.843	0.800	15.082
UB3	3.605	0.918	0.828	0.828	17.472
UB4	3.571	0.864	0.824	0.786	15.076
UB5	3.568	0.898	0.838	0.845	17.887
Hedonic Browsing (HB)	α= 0.893, CR=0.903, AVE=0.699, MSV=0.361, MaxR(H)=0.903				
HB1	3.559	1.020	0.758	0.848	-
HB2	3.468	0.978	0.756	0.842	17.020
HB3	3.605	0.925	0.795	0.820	14.677
HB4	3.502	0.963	0.758	0.832	14.463
Impulsive Buying Behavior (IBB)	α= 0.930, CR=0.935, AVE=0.743, MSV=0.062, MaxR(H)=0.936				
IBB1	3.869	1.053	0.805	0.874	-
IBB2	3.912	1.066	0.795	0.869	21.396
IBB3	3.851	1.033	0.790	0.853	20.716
IBB4	3.799	1.040	0.783	0.858	21.183
IBB5	3.851	1.018	0.774	0.856	20.915

Source: Author's own research.

shown in Table 3. The AVE values of components ranged from 0.665 to 0.743 and above the related MSV values, and the square roots of the AVE values of each construct are also higher than the corresponding correlation values. Results satisfy the first criterion of discriminant validity.

TABLE 3: Factor correlation matrix

	EC	ED	EN	HB	UB	IBB
EC	0.839					
ED	-0.161	0.825				
EN	-0.189	0.558	0.826			
HB	-0.039	0.601	0.45	0.836		
UB	0.425	-0.285	-0.266	-0.226	0.815	
IBB	-0.105	0.25	0.239	0.178	-0.079	0.862

Source: Author's own research.

The second criterion for discriminant validity is the Heterotrait-Monotrait (HTMT) ratio of correlation analysis (Henseler et al., 2015), which was also conducted, and the results are provided in Table 4.

TABLE 4: HTMT ratio of correlations

EC	ED	EN	HB	UB	IBB
ED	0.164				
EN	0.200	0.568			
HB	0.039	0.612	0.462		
UB	0.421	0.286	0.263	0.223	
IBB	0.103	0.248	0.239	0.182	0.076

Source: Author's own research.

The HTMT ratios are below the value of 1, which satisfied the discriminant validity criteria. The results indicate that the measurement model has no convergent or discriminant validity issues.

4. RESULTS

Constructs were verified to be reliable and valid, and no convergent or discriminant issues were identified; the model fit indices were assessed, and the results are depicted in Table 5. The metrics included in the model fit analysis were the chi-square test ($\chi 2$), $\chi 2/df$, and the SRMR, RMSEA, NFI, RFI, and TLI (Hu & Bentler, 1999; Hair et al., 2014). The following results were obtained: $\chi 2=453.425$, $df=335$, $\chi 2/df= 1.354$, SRMR=0.051, RMSEA=0.033, NFI= 0.935, RFI=0.926, and TLI=0.980 for model fit measurements. These results showed that the model fit indices were within the threshold values, which satisfied the model fit (Hu & Bentler, 1999; Hair et al., 2014), path analysis results utilizing the matched pair method to examine the relationships between variables results provided in Table 5.

TABLE 5: Path analysis results of SEM

Hypotheses	Relations	Std. Estimate	Estimate	S.E.	C.R.	p
H_1	EC→UB	0.368	0.322	0.051	6.324	***
H_2	EC→HB	0.074	0.076	0.051	1.492	0.136
H_3	EC→IBB	-0.011	-0.012	0.05	-0.246	0.806
H_4	ED→UB	-0.182	-0.158	0.06	-2.624	0.009
H_5	ED→HB	0.54	0.554	0.068	8.17	***
H_6	ED→IBB	0.251	0.274	0.067	4.086	***
H_7	EN→UB	-0.093	-0.091	0.069	-1.316	0.188
H_8	EN→HB	0.203	0.236	0.073	3.218	0.001
H_9	EN→BB	0.158	0.19	0.062	3.076	0.002
H_{10}	UB→IBB	-0.049	-0.062	0.055	-1.124	0.261
H_{11}	HB→BB	0.575	0.803	0.06	13.378	***

Source: Author's own research. *** Statistically significant as $p < 0.001$

The results indicated that a positive effect of EC on UB (β=0.322, t =6.324, p<0.001) was supported. The effect of EC on HB was not statistically supported (β=0.076, t =1.492, p>0.001). The increase in ED negatively affected UB (β=-0.1558, t =-2.624, p<0.01) while positively affecting HB (β=0.554, t =8.17, p<0.001), so an increase in ED stimulated HB. While the effect of EN on HB was statistically significant (β=0.236, t=3.218, p<0.001), the influence on UB was not supported (β=-0.091, t=-1.316, p>0.05). Moreover, the results suggest that the UB (β=-0.062, t=-1.124, p>0.05) and EC (β=-0.012, t=-0.246, p>0.05) have no influence on the IBB. However, the EN (β=0.19, t=3.076, p<0.01) and HB (β=0.803, t=13.378, p<0.001) positively impacted the IBB.

The user-defined estimand was utilized to analyze UB and HB's mediation effects on the relationship between atmospheric cues and IBB. This study used 5000 bootstrap samples to create a confidence interval at a 95% confidence level (Hair et al., 2014). The unstandardized coefficients, t-values, indirect and direct effects, and upper and lower bounds obtained from the mediation analysis are given in Table 6. The results of the mediation tests suggest that EC does not have a statistically significant direct effect on IBB (β=-0.018, t=-0.356, p>0.05); however, EN (β=0.196, t=2.919, p<0.01) and ED (β=0.264, t=3.906, p<0.01) have a direct positive effect on IBB.

These results indicate that UB did not have a mediation effect relationship between EN (β=0.010, t=0.526, p>0.05), ED (β=-0.005, t=-0.5, p>0.05), and EN (β=-0.003, t=1.235, p>0.05) with IBB. HB acted as a mediator between ED and IBB (β=0.295, t=4.836, p<0.01), as well as between EN and IBB (β=0.119, t=2.480, p<0.01). However, HB did not mediate between EC and IBB (β=0.042, t=1.235, p>0.05). It is reasonable to infer that the HB partially mediates EN and EC with IBB, as HB both has both statistically direct and indirect effects on IBB (Maxwell et al., 2011).

The correlation analysis results, which demonstrated the interrelationship between all variables, are shown in Table 7.

Table 7: Correlation analysis results

Relations			Estimate	S.E.	C.R.	P
ED	↔	EC	-0.107	0.042	-2.566	0.01
EN	↔	ED	0.344	0.045	7.643	***
EN	↔	EC	-0.118	0.038	-3.106	0.002

Source: Author's own research.

The EC value exhibited a negative association with both EN (β=0.295, t=4.836, p<0.01) and ED (β=0.295, t=4.836, p<0.01), but EN (β=0.295, t=4.836, p<0.01) and ED (β=0.295, t=4.836, p<0.01) had a positive relationship with each other.

TABLE 6: Analysis of mediator effects

Hypotheses	Relations	Direct effect	Indirect effect	Estimate	Confidence interval		P	Status
					lower	upper		
H_{12}	EC→UB→IBB	-0.018 (-0.356)	0.052 (1.300)	0.01	-0.029	0.047	0.654	No mediation
H_{13}	ED→UB→IBB	0.264 (3.906)	0.290 (4.754)	-0.005	-0.03	0.012	0.498	No mediation
H_{14}	ED→HB→IBB	0.264 (3.906)	0.290 (4.754)	0.295	0.189	0.43	0.000	Partial mediation
H_{15}	EN→HB→IBB	0.196 (2.919)	0.116 (2.416)	0.119	0.031	0.221	0.010	Partial mediation
H_{16}	EC→HB→IBB	-0.018 (-0.356)	0.052 (1.300)	0.042	-0.022	0.114	0.196	No mediation
H_{17}	EN→UB→IBB	0.196 (2.919)	0.116 (2.416)	-0.003	-0.024	0.006	0.416	No mediation

Source: Author's own research.

Potential differences between the gender groups were also examined in this research model. The results revealed no statistically significant difference between the unconstrained and constrained models ($\chi2$=67.952, df=61, p=0.252), meaning that there were no significant differences across genders. Gender differences at the pathway level were also analyzed and the results are presented in Table 8.

TABLE 8: Multi-group analysis results

Hypotheses		Std. Estimate	Estimate	S.E.	C.R.	P	X^2	Df	P
Unconstraint model							67.952	61	0.252
Constrained models									
H_{18}	EC-->IBB						0.367	1	0.545
	male	0.034	0.037	0.075	0.49	0.624			
	female	-0.057	-0.064	0.067	-0.949	0.343			
H_{19}	ED-->IBB						0.977	1	0.323
	male	0.275	0.293	0.096	3.047	0.002			
	female	0.175	0.198	0.098	2.022	0.043			
H_{20}	EN-->IBB						0.486	1	0.486
	male	0.125	0.135	0.089	1.512	0.131			
	female	0.199	0.281	0.101	2.779	0.005			
H_{21}	UB-->IBB						1.153	1	0.283
	male	-0.065	-0.078	0.087	-0.897	0.37			
	female	0.003	0.004	0.085	0.042	0.966			
H_{22}	HB-->IBB						3.754	1	0.053
	male	0.483	0.446	0.084	5.322	***			
	female	0.581	0.704	0.102	6.866	***			

Source: Author's own research.

Based on the results of the multigroup analysis on 90% confidence intervals using the bootstrap method, the effect of EC on IBB ($\chi2$=0.367, df=1, p=0.545) was not significantly different between genders, and no significant relationship was found for both groups, so H_{18} was rejected. No significant relationship was found for the male (β=0.034, p>0.1) or the female group (β=-0.057, p>0.1). The impact of ED on IBB was stronger in the male group although it was not significantly different between the gender groups ($\chi2$=0.977, df=1, p=0.323), so H_{19} was rejected. In this interaction, the male group (β=0.275, p<0.1) and the female group (β=0.175, p<0.1), ED had a significant effect on IBB. In terms of EN effect on IBB, it was not significant for the male group (β=0.125, p>0.1), while female group (β=0.199, p<0.1) it had a significant effect. However, this difference was not statistically significant ($\chi2$=486, df=1, p>0.1), so H_{20} was rejected. Moreover, the effect of UB on IBB was not statistically significant for either group (male; β=-0.065, p>0.1, female; β=0.003, p>0.1). Hence, H_{21} ($\chi2$=1.153, df=1, p>0.1) was rejected. Finally, the HB effect on IBB was highly significant for both males (β=0.483, p<0.1), and slightly stronger effect in females (β=0.581, p<0.1), and statistically significant difference between groups, so H_{22} was accept-

ed ($\chi 2=3.754$, df=1, p=0.053). The multigroup analysis suggests that, although the effect of factor on IBB generally does not differ between groups, the effect of HB on IBB has a significant difference between males and females. The difference indicates the need for gender-sensitive approaches in applications related to IBB, especially when addressing the influence of HB.

5. DISCUSSION AND CONCLUSIONS

This study scrutinizes the influence of atmospheric cues of the e-store environment on consumers' impulsive purchasing behavior. It attempts to explain two constructed relationships by positing that utilitarian and hedonic browsing behavior play a mediating function. The components of atmospheric cues in this research are e-store content, e-store design, and e-store navigation. This study contributes to understanding online customers' impulsive buying behavior. It provides crucial insights into the intricate relationship between atmospheric cues, browsing behaviors, and the consequences. This research has revealed significant interconnections that enhance understanding of consumer decision-making processes in the digital era.

The study reveals that e-store content does not significantly influence impulsive buying or hedonic browsing, as found by Floh & Madlberger (2013) and Kimiagari & Asadi Malafe (2021). However, it influences utilitarian browsing, as suggested by Chen et al. (2018). The lack of a significant relationship between e-store content and impulse buying may be due to whether the content is an incentive to purchase or merely an information provider. On the contrary, promotions or limited-time discounts are more likely to directly influence customers' impulse purchase decisions and leisure (Xu et al., 2020). Thus, e-store designers should offer detailed product descriptions, technical information, and customer reviews to cater to user needs and preferences, as utilitarian browsing is a significant aspect of e-store content because it helps users find information about product features and benefits. Strategic marketers can enhance search engine optimization through filtering by keywords and specifying product specifications and benefits, ensuring users can easily find their desired products on their website.

Research indicates that visually appealing e-stores increase hedonic browsing, as per studies by Floh & Madlberger (2013) and Zheng et al. (2019) while also positively affecting impulsive buying behavior, as per study of Tang & Zhang (2020). These findings highlight the importance of customer experience design in influencing customer behavior. Thus, captivating design, personalized recommendations, and employing a simple and interactive interface as much as possible to motivate customers into spending more time shopping in the e-store and making impulsive purchases. Studies by Marzuki et al. (2016) and Hasan (2016) show a positive relationship between website design and utilitarian browsing as this study suggests. Therefore, effective site design enhances the ability of users to find information quickly, compare products, and choose the best option, thus encouraging longer engagement and a smoother browsing experience.

Wadera & Sharma (2018) and Correia Loureiro (2019) emphasized the significance of user-friendly navigation design in hedonic browsing, with the results of this research echoing theirs. Design elements like easy access to the e-store menu, clear directions, interactive features, and colorful menus enhance user experience. When the relationship between the navigation of e-stores and online impulsive buying was evaluated, the result of the study supports the suggestions of both Floh & Madleberger (2013) and Wadera & Sharma (2018). Designers' focus on simple, fast, straightforward navigation, well-organized category menus, and one-click payment options can facilitate quick purchases, impacting online impulsive buying. Additionally, Chen et al. (2019) found that e-store navigation impacts utilitarian browsing

significantly, unlike in this study. The reason for this result may depend on customers' different preferences because users may interact with sites differently depending on their preferences. Some prefer direct product search, while others prefer navigation or category movement. This could explain why site navigation does not impact utilitarian browsing because users may have different browsing styles and not rely on navigation's convenience, as found in this research.

This study investigates the utilitarian and hedonic aspects of browsing and its mediation effect on consumers' impulsive buying behavior in an e-store environment. This study reveals that hedonic browsing partially mediates impulsive buying, and atmospheric cues of e-store navigation and design increase its influence, which aligns with previous research by Gültekin and Özer (2012). This study highlights the role of hedonic browsing in promoting impulsive buying. However, it does not reveal the impact of utilitarian browsing on such behavior, providing valuable insights for e-store managers seeking to boost customer impulsive buying. The findings obtained in this study are consistent with previous research (Hayu et al., 2023; Santi Budiman et al., 2023) but contradict some previous assumptions (Chen et al., 2018; Kimiagari & Asadi Malafe, 2021). It emphasizes the importance of satisfying customers' emotional and experience needs in e-store settings, as utilitarian browsing does not alter their impulsive buying behavior (Koo & Park, 2017). Therefore, e-store managers should prioritize delivering information, focusing on navigation and design context, rather than just offering information content.

This study found no significant differences in impulsive purchasing behavior between genders among online consumers, except for the effect of hedonic browsing on impulsive buying behavior. This suggests a need for reevaluating advertising strategies based on demographic segmentation, emphasizing the understanding of consumer behavior beyond demographics. Given that hedonic browsing has a stronger influence on women's impulse buying behavior in e-stores, marketers should prioritize the understanding of women's motivations and emotional triggers while wishing them to spend more time on e-stores. They can develop more effective strategies for recognizing the psychological factors behind impulse buying.

6. LIMITATIONS

This study has some limitations. First, due to the constraints of time and cost, it was necessary to impose a limitation on the research model for evaluating the influence of virtual store environments on impulsive online purchases, wherein the focus was primarily on the major variables under consideration. A second limitation of this study is its cross-sectional nature, which limits the inclusion of ex-ante and ex-post analysis. A longitudinal investigation can provide valuable insights into how customers respond to various e-store atmospheric cues and the resulting consequences. The third limitation is that this research examines the general responses of consumers to e-stores.

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