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The impact of digital atmospheric cues on e-impulsive buying: Exploring the role of task, aesthetic, and social cues

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Abstract

Digital atmospheric cues play a pivotal role in influencing consumer behavior within online shopping environments. This study investigates the impact of three primary atmospheric cues task-related, aesthetic, and social on e-impulsive buying behavior. Task-related cues enhance the platform's usability and functional efficiency, ensuring smooth navigation and user convenience. Aesthetic cues pertain to the visual design and layout, affecting consumers' emotions and attention. Social cues, including reviews, ratings, and social proof, contribute to trust and community perception, thereby influencing spontaneous purchasing decisions.

A quantitative methodology was employed, using a structured questionnaire to collect data from 405 respondents. Data analysis was conducted using SPSS, with multiple regressions applied to evaluate the combined effects of the cues. The model explained 96.3% of the variance in impulsive buying behavior ($R^2=0.963$), indicating a highly reliable model. Among the variables, aesthetic cues had the strongest influence on e-impulsive buying ($\beta=0.643$, $P=0.000$, $p\leq 0.05$), followed by social cues ($\beta=0.236$, $P=0.000$, $p\leq 0.05$), and task cues ($\beta=0.169$, $P=0.000$, $p\leq 0.05$), all showing statistically significant relationships.

These findings underline the critical role of digital interface elements in shaping impulsive behavior online. Businesses can enhance impulsive buying by prioritizing aesthetically engaging interfaces, integrating credible social elements, and ensuring functional ease of use. The study offers practical implications for e-commerce platforms aiming to increase spontaneous purchases and improve consumer experience. Future research could explore mediating variables such as emotional state, urgency, or contextual factors to further elaborate the psychological mechanisms behind online impulsivity.

Keywords: Atmospheric cues, e-Impulsive buying, aesthetic cues

1. Introduction

Traditional retail environments have long relied on atmospheric cues to influence consumer behavior, using elements such as lighting, music, scent, and store layout to create immersive shopping experiences (Baker, 1986^[4]; Baker *et al.*, 2002)^[5]. These cues were strategically designed to engage customers, prolong store visits, and stimulate unplanned purchases (Seock, 2009)^[29]. For example, soft ambient music and pleasant fragrances in luxury stores encouraged relaxed browsing, while product placements near checkout counters triggered last-minute impulse buys.

A major behavioral outcome of atmospheric cues is the tendency of consumers to make impulse purchases, (Floh & Madlberger, 2013)^[15] which are unplanned, emotionally driven buying decisions often made with little consideration of alternatives or consequences. As consumer shopping shifted from brick-and-mortar to digital platforms, these atmospheric cues evolved to fit the online environment, adapting to the possibilities and constraints of virtual retail spaces (Floh & Madlberger, 2013)^[15]. In physical stores, tactile and olfactory cues played a significant role, but in e-commerce, retailers turned to visual aesthetics, interactive website designs, and AI-driven personalization to replicate similar effects (Singh & Rani, 2025)^[30]. While in-store impulse buying was often sparked by sensory overload and product proximity, e-impulse buying is driven by personalized recommendations, engaging layouts, and real-time social interactions (Aragoncillo & Orus, 2018)^[11].

The integration of artificial intelligence, chatbots, and instant customer feedback has further transformed the online shopping experience, making impulsive buying more prevalent in digital contexts. (Bansal & Bansal, 2023) ^[2] E-atmospheric cues such as personalized. Visual layouts, interactive features, ease of navigation etc-capitalize on digital convenience, instant gratification, and persuasive design to nudge consumers toward spontaneous purchases. Within this evolving landscape, three primary categories of atmospheric cues play a crucial role in shaping e-impulsive buying behavior: task-related cues, which improve navigation and purchasing efficiency; aesthetic cues, which influence emotions through visual and interactive appeal; and social cues, which leverage peer influence and community engagement to encourage purchase decisions. This study examines the impact of these three atmospheric cues task, aesthetic, and social on e-impulsive buying behavior in online shopping platforms. By analyzing how these cues work individually and collectively, the research aims to offer insights into the mechanisms that drive unplanned purchases in digital retail spaces.

2. Literature Review

2.1 Atmospheric Cues

Atmospheric cues have long been recognized as a vital component of the retail experience, originating in brick-and-mortar environments where elements such as lighting, music, scent, store layout, and color schemes were deliberately designed to shape consumer perceptions and influence behavior. Early research by Baker (1986) ^[4] highlighted the importance of these environmental elements social factors, design features, and ambient conditions in creating store atmospheres that could stimulate impulse buying tendencies, a finding supported by later studies (Dawson and Kim 2010) ^[10]. As retailing expanded into digital spaces, the concept evolved to include online atmospheric cues, often referred to as “web atmospherics” (Childers *et al.* 2001) ^[7], which encompass website design and functional elements such as navigation structure, search engine features, one-click checkout processes, site aesthetics, and multimedia dimensions including text, images, audio, and video. (Rayburn & Voss, 2013) ^[27] describe these cues as factors provoking consumers’ online shopping intentions, including ease of navigation, site effectiveness, visual appeal, and the informativeness of content. Similarly, (Dailey, 2004) ^[9] defined the web atmosphere as a set of online environmental elements capable of enhancing purchase likelihood through favorable consumer responses. (Eroglu *et al.*, 2001) ^[13] categorized such cues into high task-relevant cues-features that directly facilitate shopping goal achievement-and low task-relevant cues-features that primarily enhance enjoyment without being essential to task completion. Other (Gounaris *et al.*, 2010) ^[17]; Wells *et al.*, 2011) ^[38] have conceptualized atmospheric cues in terms of product information, navigation, and aesthetics. Based on an extensive literature review and the recurrence of certain dimensions in prior studies, the present research focuses on three key atmospheric cues-aesthetic, social, and task cues (Liu, 2024) ^[22, 23]; Tang & Zhang, 2020) ^[33]-to examine their impact within the e-impulsive buying context.

2.2 E-Impulsive Buying

Online impulse buying has emerged as a significant

consumer behavior pattern, fueled by the rapid growth of e-commerce and the continuous advancements in information technology (Chan *et al.*, 2017) ^[6]. The digital environment has transformed the way consumers shop, providing instant access to a wide variety of products and services, which in turn amplifies the potential for spontaneous purchases. E-impulsive buying refers to unplanned, spur-of-the-moment purchases made by consumers while shopping online. Chan *et al.* (2017) ^[6] defined it as “a sudden and immediate online purchase with no pre-shopping intentions”, highlighting its spontaneous and emotionally driven nature.

For a purchase decision to be considered impulsive, it generally meets four key criteria: first, the decision occurs suddenly and without prior deliberation; second, it is made without evaluating potential consequences or alternative options; third, it is motivated more by emotions than by rational thought; and fourth, it results in an unplanned acquisition. These characteristics distinguish impulsive buying from planned purchasing behaviors, underlining its unique psychological underpinnings.

The prevalence of online impulsive buying can be attributed to the interplay of three primary stimuli: website, marketing, and affective factors. Website-related elements such as security, user-friendly design, and ease of navigation influence the overall shopping experience, making it more conducive to impulsive decisions. Marketing strategies, including limited-time offers, price discounts, and scarcity cues, are often used to create urgency and drive immediate purchases. Furthermore, affective factors-particularly emotional states like pleasure, excitement, and arousal-serve as strong triggers that push consumers toward making quick, unplanned purchases. Together, these stimuli create an online environment where impulsive buying is not only possible but actively encouraged (Zhao *et al.*, 2022) ^[41].

3. Research model and development of hypothesis

3.1 Aesthetic cues

Aesthetic cues refer to the visual and design elements of an online shopping platform-such as layout, color schemes, typography, and imagery-that shape user perception and enhance the overall shopping experience (Parboteeah *et al.*, 2009; Liu, 2024) ^[22, 23]. A well-designed interface creates an inviting and engaging environment, which encourages users to stay longer and explore more products.

Websites often form the first impression of an organization within seconds, and visual appeal is a key factor in whether users continue browsing or leave (Robins & Holmes, 2008) ^[28]. Design attractiveness is largely determined by elements like page layout and color usage (Van Der Heijden, 2003) ^[34], which together define the overall appeal of the site (Floh & Madlberger, 2013) ^[15].

(Baker 1986) ^[4] categorized store atmosphere into three dimensions, one of which is design, covering aspects such as color, structure, and spatial layout. These visual features are known to influence users' emotional responses. For example, static and dynamic images can enhance site enjoyment while image-based content tends to be more entertaining than text-heavy layouts (Oh *et al.*, 2019) ^[25]. Additionally, background color and music positively affect consumer pleasure and arousal (Wu *et al.*, 2008) ^[40].

Beyond visual pleasure, aesthetic cues also contribute to perceived brand credibility and trust. A clean, modern design signals reliability, while high-quality images and interactive visuals offer users better product understanding. Thoughtful use of contrast, whitespace, and design

hierarchy can guide attention to key areas, subtly influencing consumer behavior. Thus we hypothesize:-

H₁: Aesthetic cues in an online shopping platform have a significant impact on impulsive buying.

3.2 Task Cues

Task cues refer to the functional components of an online shopping platform that support smooth navigation, product discovery, and transaction completion. These include features such as search bars, filters, sorting options, and detailed product descriptions that enable users to locate relevant products quickly and efficiently. A well-structured layout, intuitive interface, and streamlined checkout process further enhance the shopping experience by reducing friction and simplifying the purchase journey.

Task-relevant cues are utilitarian in nature and contribute to the effectiveness and efficiency of task completion (Tang & Zhang, 2020) [33]. In online shopping, these cues encompass elements like navigation menus, informative product details, and shopping cart functions that guide consumers through the buying process (Parboteeah *et al.*, 2009) [26]. Such cues reflect the user's capacity to perform tasks effectively, as they offer essential information that facilitates performance (Driskell *et al.*, 1993) 12¹. Additionally, task cues such as clear and reliable product information, timely updates, and streamlined purchasing processes play a vital role in building consumer trust and enhancing task efficiency (Liu, 2024) [23].

A task-relevant environment consists of all textual and visual elements displayed on the website that support consumers in achieving their shopping goals, while less relevant environments contain information that does not directly aid task completion (Eroglu *et al.*, 2001) [13]. Building on this, (Mazaheri *et al.*, 2014) [24] suggested that consumers' emotional responses-such as pleasure, arousal, and dominance-are shaped by their perceptions of the website's atmospherics, including its informativeness, usability, and entertainment value. Specifically, site informativeness refers to how effectively a website delivers relevant information to users (Hoffman & Novak, 1996) [18]. By ensuring functionality, efficiency, and ease of use, task cues significantly enhance user satisfaction and engagement. Features like fast loading times, organized product categorization, and simplified payment options contribute to a seamless and convenient shopping experience. These elements not only support users in exploring and evaluating products but also enable them to complete transactions effortlessly, creating a more efficient digital retail environment. Kim and Lennon (2008) [21] showed that instrumental site cues, such as product descriptions and images, impact emotional responses. Based on this we hypothesize,

H₂: Task cues in an online shopping platform have a significant impact on impulsive buying.

3.3 Social Cues

Social cues refer to elements within an online shopping platform that leverage social influence to shape consumer behavior and decision-making. According to Tang and Zhang (2020) [33], social media cues-like product sharing, customer ratings, and reviews-are designed to promote interpersonal engagement. These features allow consumers

to connect with peers, friends, or other shoppers, creating a socially interactive space within the online shopping environment. In this context, social cues refer to elements such as integration with popular social platforms (e.g., Facebook, Twitter and Google+), user-generated reviews, and product ratings, all of which facilitate consumer-to-consumer interaction and merit further exploration. Social cues like user reviews and comments significantly enhance consumer confidence, highlighting the importance of incorporating interactive and community-driven features into e-commerce platforms (Liu, 2024) [22, 23]. These social features of a website trigger a social reaction in users, which in turn enhances their sense of enjoyment (Wakefield *et al.*, 2011) [36]. A central idea of this research is that when users perceive a website as a space for social interaction-enabled by embedded social features-they are more likely to behave as they would in real-world social contexts.

Beyond trust-building, social cues also create a sense of urgency and desirability. Features like "X people bought this in the last hour" or "Only a few left in stock" encourage consumers to act quickly, driven by the fear of missing out (FOMO). Additionally, community engagement through question-and-answer sections, social media integrations, and influencer endorsements further reinforce product credibility and influence buying behavior. Thus we hypothesize-

(H₃): Social cues in an online shopping platform have a significant impact on impulsive buying

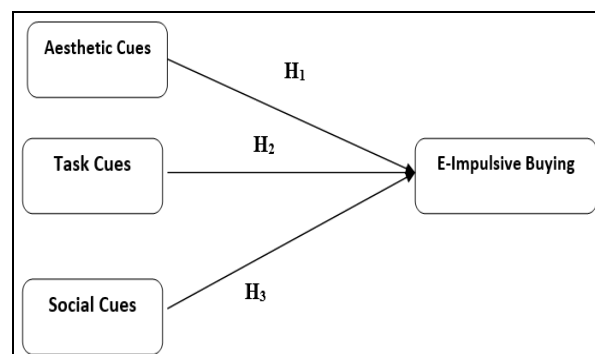


Fig 1: Research Framework

4. Research Methodology

4.1 Sample

The sample size for this study was determined using Cochran's formula, which is widely used to calculate the minimum sample size for proportion-based studies. The formula is given by:

$$N = (Z^2 \times p \times (1-p)) / E^2$$

Where,

- N =required sample size
- Z =Z-score (1.96 for a 95% confidence level)
- p =estimated proportion of the population (commonly 0.5 if unknown)
- E =margin of error (e.g., 0.05 for $\pm 5\%$)

Given the population size of Northern India, the minimum required sample size was calculated to be 384.16. Questionnaires were sent to receive the responses. Responses were received from 440 participants, of which 405 were selected for analysis after excluding incomplete or

inconsistent responses. This final sample size exceeds the minimum requirement, ensuring sufficient variability and reliability for regression analysis. The chosen responses were then used for further analysis in the study.

4.2 Measurement Scale

The questionnaire used in this study was developed based on a thorough review of existing literature and was adopted from various validated sources. It includes three independent variables-task cues, aesthetic cues, and social cues-and one dependent variable, impulsive buying. Items related to task cues were adopted from Tang and Zhang (2020) [33], who define task cues as functional elements of the online shopping environment, such as ease of navigation and information quality, which influence consumers' decision-making efficiency and may lead to impulsive purchases. Social cues, also sourced from Tang and Zhang (2020) [33], refer to interactive elements like reviews, ratings, or recommendations from others, which enhance social presence and can encourage spontaneous buying. Aesthetic cues were drawn from Parboteeah *et al.* (2009) [26] and include the visual and design aspects of the platform-such as layout, color, and imagery-that can trigger emotional responses and affect impulse buying tendencies. The dependent variable, impulsive buying, was measured using items from (Kacen & Lee, 2002 [20]; (Verhagen & Van Dolen, 2011) [35] who define it as an unplanned, spontaneous purchase influenced by external stimuli. All items were measured on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), ensuring consistency in data collection and facilitating robust statistical analysis.

4.3 Tools

SPSS 25 was utilized for data analysis, beginning with a reliability test to assess internal consistency. The overall Cronbach's alpha (Cronbach, 1951) [8] for the dataset was calculated as 0.9, indicating a high level of reliability, which is above the acceptable threshold of 0.7 (Forero, 2014) [16]. The Kaiser-Meyer-Olkin (KMO) (Kaiser, 1974) [19] measure of sampling adequacy was 0.878, confirming that the dataset was suitable for exploratory factor analysis (EFA). Additionally, Bartlett's test of sphericity (Bartlett, 1950) [3] was significant, further supporting the appropriateness of factor analysis. (Williams *et al.* 2010) [39]. EFA-Exploratory Factor Analysis (Spearman, 1904) [31] is a statistical technique used to identify the underlying structure of a set of observed variables by grouping them into factors based on their correlations (Watkins, 2018) [37]. Since the values exceeded the minimum threshold, (KMO-.875, Bartlett's Test of Sphericity -.000. (0.000 < 0.005) the data was deemed suitable for EFA (Tabachnick *et al.*, 2019) [32].

The study examined three independent variables-task-related cues, aesthetic cues, and social cues-along with e-impulsive buying as the dependent variable. To identify underlying factor structures, principal component analysis (PCA) was conducted using varimax rotation to enhance interpretability. Varimax rotation is considered the most effective and widely used orthogonal rotation method, as it enhances interpretability by maximizing the variance of factor loadings within each factor (Fabrigar *et al.*, 1999) [14]. Factors with eigenvalues greater than 1 were retained to ensure only meaningful constructs were considered. (Kaiser Criterion) Items with factor loadings above 0.50 were

accepted as valid indicators of their respective constructs.

After EFA, as there were no cross-loadings, the reliability of each factor was reassessed using Cronbach's alpha. The reliability values for all constructs were found to be above the acceptable threshold, confirming strong internal consistency. The final rotated component matrix, along with eigenvalues and reliability scores, is included in the appendix for reference.

| Constructs | Items | Factor Loading |
|------------|---|----------------|
| AC1 | The platform is visually pleasing. | 0.806 |
| AC2 | The platform displays a visually pleasing design. | 0.850 |
| AC3 | Overall, it is visually appealing. | 0.829 |
| TC1 | It has features that allow me to find product details. | 0.803 |
| TC2 | It has features that allow me to learn about a product. | 0.749 |
| TC3 | It has features that allow me to gather product details. | 0.734 |
| TC4 | It has features that allow me to examine a product. | 0.771 |
| SC1 | The platform allows me to communicate with others. | 0.801 |
| SC2 | It has features that allow me to share my experiences with others. | 0.812 |
| SC3 | It has features that allow me to seek others' opinions. | 0.858 |
| SC4 | It has features that allow me to contact others. | 0.795 |
| IB1 | I buy products online that I had not planned to purchase. | 0.833 |
| IB2 | When I see an interesting product online, I buy without considering the consequences. | 0.843 |
| IB3 | My purchases online are often spontaneous. | 0.788 |
| IB4 | Most of the time I cannot resist buying products from the platform. | 0.820 |

5. Results

5.1 Demographic Characteristic

Table: Demographic Profile of Respondents (N=405)

| Variable | Category | Frequency | Percentage (%) |
|------------------------------|---------------------|-----------|----------------|
| Gender | Male | 189 | 46.7% |
| | Female | 216 | 53.3% |
| Age | Below 18 | 65 | 16.0% |
| | 18-24 | 134 | 33.1% |
| | 25-34 | 151 | 37.3% |
| | 35 and above | 55 | 13.6% |
| Income Group | Below ₹2,00,000 | 50 | 12.3% |
| | ₹2,00,000-₹4,00,000 | 72 | 17.8% |
| | ₹4,00,000-₹6,00,000 | 103 | 25.4% |
| | ₹6,00,000-₹8,00,000 | 110 | 27.2% |
| | Above ₹8,00,000 | 70 | 17.3% |
| Frequency of Online Shopping | Rarely | 36 | 8.9% |
| | Sometimes | 99 | 24.4% |
| | Often | 189 | 46.7% |
| | Very Often | 81 | 20.0% |

The demographic profile of the study consisted of 405 respondents. In terms of gender distribution, 46.7% of the participants were male (N=189), while 53.3% were female (N=216), indicating a fairly balanced gender representation. The age distribution showed that 16.0% of respondents were below 18 years of age, 33.1% were in the 18-24 age group,

37.3% belonged to the 25-34 age group, and the remaining 13.6% were 35 years and above. This reflects a broad age range, primarily dominated by younger consumers.

Regarding income levels, 12.3% of participants reported an annual income below ₹2,00,000, 17.8% earned between ₹2,00,000 and ₹4,00,000, 25.4% were in the ₹4,00,000 to ₹6,00,000 range, 27.2% earned between ₹6,00,000 and ₹8,00,000, and 17.3% had annual incomes above ₹8,00,000. This distribution ensured the inclusion of participants from diverse economic backgrounds.

As for online shopping frequency, 8.9% of the respondents reported shopping rarely, 24.4% sometimes, 46.7% often, and 20.0% very often. This indicates that a majority of the respondents were active online shoppers, which adds relevance and strength to the findings of this study on e-

impulsive buying behavior.

5.2 Multiple Regression Analysis

Multiple regression analysis was conducted to examine the combined influence of digital atmospheric cues—specifically aesthetic, task, and social cues—on e-impulsive buying behavior. This statistical technique is suitable for analyzing how multiple independent variables simultaneously impact a dependent variable providing comprehensive insights into the significance and strength of these predictors. A significance level of 5% ($p \leq 0.05$) was adopted, which is widely accepted in behavioral research for hypothesis testing (Di Leo & Sardanelli, 2020) ^[11].

Summary of hypothesis testing

| Null Hypothesis | P-Value | Accept or Reject |
|---|------------------------|------------------|
| H₀₁: Aesthetic cues do not significantly influence consumers' e-impulsive buying. | $P=0.000, p \leq 0.05$ | Reject |
| H₀₂: Task cues do not significantly influence consumers' e-impulsive buying. | $P=0.000, p \leq 0.05$ | Reject |
| H₀₃: Social cues do not significantly influence consumers' e-impulsive buying. | $P=0.000, p \leq 0.05$ | Reject |

The model summary revealed that the independent variables explained 96.3% of the variance in impulsive buying behavior ($R^2=0.963$), indicating a very strong model fit. The ANOVA results confirmed the model's statistical significance, $F(3, 401)=3462.706, P=0.000$, indicating that the combination of aesthetic cues, task cues, and social cues significantly predicted impulsive buying.

Aesthetic cues demonstrated the strongest positive relationship with impulsive buying ($\beta=0.643, P=0.000$), suggesting that visually appealing designs and layouts on shopping platforms significantly enhance consumers' impulsive purchase behavior, thereby rejecting the null hypothesis. Task cues also showed a significant but smaller impact ($\beta=0.169, P=0.000$), indicating that ease of navigation, clarity, and functional aspects support impulsive decisions. Social cues had a moderate effect ($\beta=0.236, P=0.000$), emphasizing the influence of reviews, ratings, and social presence in triggering impulsive buying tendencies.

Overall, the findings support all three alternative hypotheses, establishing statistically significant relationships between each atmospheric cue and impulsive buying. Aesthetic cues had the highest influence, followed by social cues and task cues. The detailed regression output is included in the appendix for reference.

6. Managerial Implication

To enhance impulsive buying behavior, businesses must strategically implement aesthetic, social, and task-related cues across digital shopping platforms. The results of this study highlight that aesthetic cues exert the strongest influence on impulsive buying, followed by social cues, with task cues having a significant yet comparatively lesser effect. These insights serve as actionable guidance for digital marketers and UX designers aiming to stimulate spontaneous purchase decisions.

Given the dominant impact of aesthetic cues, organizations should prioritize the creation of visually engaging, emotionally resonant, and cohesive interface designs. High-resolution imagery, consistent color schemes, intuitive layouts, and animated transitions can heighten emotional engagement and draw users toward unplanned purchases. Investment in UI/UX expertise, along with A/B testing of

design elements, can help identify and deploy the most effective visual strategies.

Social cues also play a critical role by enhancing trust, credibility, and social validation. Retailers should prominently display authentic customer reviews, product ratings, and real-time purchase notifications. Incorporating features such as “top-rated,” “frequently bought together,” or “customers also liked” not only creates social proof but also nudges consumers toward impulse buying.

Although task cues rank lower in relative influence, they remain essential for supporting functionality and reducing cognitive effort. Clear navigation, efficient search bars, fast-loading pages, and streamlined checkout processes are foundational elements that sustain user interest and enable seamless transactions. Ensuring that shoppers encounter minimal friction while browsing and purchasing can indirectly reinforce impulsive behaviors triggered by design and social influence.

In summary, aesthetic design should lead digital strategy, supported by robust social features and efficient task structures. An integrated approach that balances visual appeal, community feedback, and operational usability can significantly elevate impulsive buying rates and overall customer satisfaction in online retail.

7. Limitations and Future Prospects

While this study provides valuable insights into the influence of aesthetic, task, and social cues on impulsive buying in digital environments, certain limitations must be acknowledged. Although data collection was conducted over a broad geographical area, enhancing the generalizability of findings to some extent, the use of a non-probability sampling technique still limits the representativeness of the sample. Therefore, caution should be exercised when extending these results to all consumer segments.

Additionally, the study focused exclusively on three specific digital cues—task, aesthetic, and social—while excluding other potentially influential variables such as emotional triggers, brand credibility, personalization, and perceived trust. Future studies should consider a more comprehensive set of atmospheric and psychological cues to develop a deeper and more holistic understanding of the factors driving e-

impulsive buying.

Another limitation is the reliance on self-reported data, which may be subject to social desirability bias or inaccuracies in respondents' recall. Incorporating observational methods, digital behavior analytics, or controlled experimental designs in future research can improve the reliability and depth of behavioral insights.

Furthermore, this study did not account for moderating or mediating variables such as age, personality traits, mood states, or situational factors (e.g., urgency or time pressure), which can significantly shape impulsive buying behavior. Exploring these dimensions can reveal nuanced interactions and help tailor marketing strategies more effectively.

In sum, while the study contributes meaningfully to understanding the impact of digital cues on impulsive buying; future research should expand its scope and methodological rigor to uncover richer and more generalizable insights.

8. Conclusion

This study underscores the pivotal role of aesthetic, task, and social cues in shaping impulsive buying behavior within online retail environments. Among the three, aesthetic cues emerged as the most influential, emphasizing the impact of visually appealing and emotionally engaging digital interfaces in triggering spontaneous purchases. Task-related cues also demonstrated a significant effect, indicating that seamless navigation, intuitive functionality, and clarity of information can facilitate impulse-driven decisions. While social cues had a relatively weaker influence, they still played a meaningful role by reinforcing purchase intent through customer reviews, ratings, and social proof mechanisms.

These findings offer practical insights for e-commerce platforms, highlighting the importance of optimizing website aesthetics, enhancing user experience, and embedding social validation strategies to encourage unplanned purchases. Although the study lays a strong foundation for understanding how sensory and functional cues drive impulsive buying, future research should investigate additional psychological and contextual factors, including emotional responses, trust, and consumer personality traits. Examining the interplay among these elements can provide a more comprehensive understanding of consumer impulsivity in digital spaces.

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Appendix

A)

| Coefficients ^a | | | | | |
|---------------------------|----------------|-----------------------------|------------|---------------------------|--------|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | T |
| | | B | Std. Error | Beta | |
| 1 | (Constant) | .940 | .040 | | 23.221 |
| | Aesthetic Cues | .581 | .022 | .643 | 26.452 |
| | Task Cues | .085 | .007 | .169 | 11.618 |
| | Social Cues | .112 | .009 | .236 | 11.976 |

a. Dependent Variable: Impulsive Buying

Rotated Component Matrix

B)

| Rotated Component Matrix^a | | | | |
|---|------------------|----------|----------|----------|
| | Component | | | |
| | 1 | 2 | 3 | 4 |
| AC1 | .271 | -.005 | .158 | .806 |
| AC2 | .230 | .046 | .183 | .850 |
| AC3 | .233 | .064 | .216 | .829 |
| SC1 | .186 | .801 | .015 | -.022 |
| SC2 | .076 | .812 | .176 | -.010 |
| SC3 | .092 | .858 | .059 | .061 |
| SC4 | .037 | .795 | .211 | .102 |
| TC1 | .027 | .121 | .803 | .018 |
| TC2 | .362 | .220 | .749 | .221 |
| TC3 | .194 | .081 | .734 | .332 |
| TC4 | .294 | .132 | .771 | .226 |
| IB1 | .833 | .094 | .158 | .151 |
| IB2 | .843 | .087 | .209 | .225 |
| IB3 | .788 | .110 | .167 | .218 |
| IB4 | .820 | .168 | .171 | .270 |

Extraction Method: Principal Component Analysis.**Rotation Method:** Varimax with Kaiser Normalization.^a

a. Rotation converged in 5 iterations.