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Master Of Business Administration

Impulse Buying Behavior Among Saudi Consumers

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2 Introduction

Over the last few decades, the phenomenon of impulse buying has sparked widespread interest across multiple disciplines—including marketing, psychology, and consumer behavior research (Virvalaite et al., 2009). Far from being a niche behavior, impulse buying has become a defining trait of modern consumer culture. Retailers have capitalized on this tendency, recognizing its potential to drive substantial profits (Munusamy et al., 2010). One industry leader even claimed that spontaneous purchases account for nearly 70% of their company's total revenue (Karmali, 2007). In fact, studies show that more than 70% of purchases made in supermarkets are unplanned, highlighting the pervasive nature of impulse-driven decisions (Mburu, 2010). With impulsive spending contributing an estimated \$4 billion annually in the U.S. alone, it's clear that this behavior is not only widespread but also economically significant (Agins, 2004).

Although impulse buying has been extensively documented in the United States (Agins, 2004), its dynamics in other regions remain largely unexplored. This gap underscores the need for cross-cultural research into what drives consumers to make spontaneous purchases.

As impulsive purchasing continues to shape consumer behavior, it has become imperative for retailers to decode the psychological drivers behind these decisions. Gaining deeper insights into the consumer mindset is essential for maintaining a competitive edge in today's fast-paced retail landscape (Badgaiyan and Verma, 2014).

Building on previously reported insights, this study aims to examine how situational and demographic factors—specifically gender and employment status—interplay and associate with impulsive purchasing behavior. (Yu and Bastin, 2010).

There is a notable scarcity in the data related to impulse buying in KSA. Such a huge knowledge gap remains yet to be addressed. While multiple studies report that, within the context of Kingdom of Saudi Arabia (KSA), product advertisement and family influence may be significantly associated with impulse buying behavior, such a transient yet recurrent customer behavior is at best 50% understood by specialized scientists (Singh et al., 2023; Alqutub, 2023). There is also a stress on the online shopping and e-commerce market, being a relatively new, developing, big,

and under-investigated market in KSA (**Arrafi et al., 2021**). The current study aims to help delineate the factors associated with online impulse buying behavior within KSA settings.

3 Study Problem

Impulsive online shopping has become increasingly prevalent with the rapid growth of e-commerce platforms and digital marketing strategies. In the KSA, where internet penetration and smartphone usage are among the highest in the region, consumers are frequently exposed to online advertisements and promotions that may trigger unplanned purchases (**Arrafi et al., 2021**). Despite the growing trend, there is limited empirical research exploring the psychological, social, and technological factors that contribute to impulsive online buying behavior in the Saudi context. Understanding these factors is crucial for businesses, marketers, and policymakers aiming to develop effective strategies for consumer engagement and financial well-being. The current study helped the clients recognize the driving factors of impulsive shopping and the online triggers that may allure them into an impulsive shopping spree. Moreover, the findings of the current study increased our understanding of the Saudi market and help organizations adjust their marketing strategies and annual projections in an evidence-based manner.

4 Study Importance

The current study was aimed to make major contribution in a number of aspects. For example, filling the knowledge gap of online customer behavior regarding impulsive buying tendencies may be considered an important enough reason to conduct the study (academic importance). Moreover, identification of the factors associated with arousal of KSA-located customers may help local authorities understand the population and help business owners tailor their marketing strategies to a more customer-tailored approach (practical importance). On top of that, the study findings may help increase the public awareness regarding impulse buying in KSA, which is reportedly poor (Alqutub, 2023).

5 Study Objective(s)

The primary objective of the current study was to provide a comprehensive and dedicated analysis of the magnitude and severity of online impulsive shopping within the Saudi context. Our secondary objectives were:

- To investigate key psychological, social, and technological factors that may be associated with impulsive online shopping in KSA.
- To examine the relationship between these factors and the frequency of impulsive online purchases.
- To assess the demographic variables (e.g., age, gender, income) that may be also associated with impulsive buying behavior.

6 Study Question(s)

- What are the main factors influencing impulsive online shopping behavior among consumers in KSA?
- How do psychological factors (e.g., self-control, mood) relate to impulsive online shopping?
- What role do social influences (e.g., peer pressure, social media) play in impulsive buying?
- How do technological factors (e.g., ease of access, mobile app features) contribute to impulsive purchases?
- Do demographic characteristics significantly affect the likelihood of impulsive online shopping?

7 Study Hypothesis

- *H1: Sales Promotion and price discounts are positively associated with online impulse buying behavior.*
- *H2: Money availability is positively associated with online impulsive buying behavior.*
- *H3: Perceived atmosphere of online store shopping experience is positively associated with online impulse buying behavior*
- *H4: Product country of origin is associated with online impulse buying behavior*
- *H5: Product brand reputation is associated with online impulse buying behavior*
- *H6: Social influence is associated with online impulse buying behavior*
- *H7: Time availability is associated with online impulse buying behavior*
- *H8: Other factors (such as gender, mood, and perceived urge) are associated with online impulse buying behavior*

8 Literature Review

8.1 Impulse buying

The conceptual roots of impulse buying trace back to Stern's seminal work in his 1962 work titled "The significance of impulse buying today", which categorized consumer purchases into three distinct types: planned, unplanned, and impulsive (**Stern, 1962**). Planned purchases are deliberate, involving careful research and logical evaluation, often taking considerable time. Unplanned buying, on the other hand, occurs without prior intention but lacks the emotional intensity of impulse buying. What sets impulse buying apart is the immediacy and emotional force behind it—it's driven by a sudden, compelling urge that overrides rational deliberation and leads to swift, often irrational, purchasing decisions (**Stern, 1962**).

Impulse buying was once confused with unplanned purchasing, as early theorists failed to distinguish between the two. However, modern research has addressed this dilemma, revealing that impulse buying is a far more nuanced and layered behavior. IN Madhavaram et al. 2004 work titled "Exploring impulse purchasing on the internet" and Muruganantham et al 2013 work titled "Apparel product attributes, web browsing, and e-impulse buying on shopping websites" distinction between the two definitions is seen clearly. Impulse buying manifests in several distinct forms, each driven by different psychological triggers. One variant, known as planned impulse buying, occurs when consumers make seemingly spontaneous purchases that are actually prompted by external incentives like discounts or promotional deals. In contrast, reminded impulse buying is sparked by in-store stimuli that jog the shopper's memory about a forgotten need. Suggestion impulse is another form where buying emerges from internal persuasion—where the consumer, upon encountering a product, convinces themselves of its necessity. The most extreme form, pure impulse buying, is entirely unpremeditated and emotionally charged, representing a complete break from the shopper's usual decision-making patterns (**Muruganantham and Bhakat, 2013; Madhavaram and Laverie, 2004**).

The definition and main characteristics of impulse buying are well documented in Beatty et al. 1998 work titled "Impulse buying: Modeling its precursors" as well as Bhatti and Latif 2014 work titled "The impact of visual merchandising on consumer impulse buying behavior". Impulse

buying has been defined in numerous ways over the years, but most descriptions converge on a few key traits: it is emotionally charged, irrational, and unplanned. It typically involves a swift decision made with little to no deliberation, driven by a powerful desire for immediate ownership **(Bhatti and Latif, 2014; Beatty and Ferrell, 1998)**. In their 2010 publication titled “Impulse Buying Behavior in Shopping Malls: A Malaysian Perspective: the Impulse Buying Behavior Among Consumers in the Shopping Malls in Malaysia”, Munusamy et al. reported that, rather than being a calculated act, it erupts spontaneously—often without any prior intention to purchase the item in question. This behavior is marked by heightened emotional arousal, minimal cognitive control, and a sense of urgency that overrides rational thought. Compared to planned purchases, impulse buying is more reactive, less reasoned, and often feels irresistible in the moment **(Munusamy et al., 2010)**.

Sharma et al. 2010 work titled “Impulse buying and variety seeking: A trait-correlates perspective” reported that impulse buying is closely tied to heightened emotional arousal, diminished cognitive restraint, and a tendency to act spontaneously when confronted with an enticing product or stimulus **(Sharma et al., 2010)**. Kannan and Vinayagamoorthy 2014 work titled “A Study on Influencing Impulse Buying Behaviour” reported that, while this behavior may appear to originate internally, it is often sparked by external triggers—visual cues, environmental stimuli, or marketing tactics—that ignite the impulse. These external factors, which lie beyond the consumer’s conscious control, play a pivotal role in shaping impulsive responses. As such, understanding how these situational influences drive impulsivity has become essential for decoding the mechanics of impulse buying **(Kannan and Vinayagamoorthy, 2014)**.

8.2 Factors associated with Impulse buying

Impulse buying has been strongly linked to intense emotional arousal, diminished cognitive regulation, and reactive behavior triggered by the presence of an enticing product or stimulus **(Sharma et al., 2010)**. While the impulse may feel internal, it is frequently set in motion by external stimuli—environmental cues that act as catalysts for spontaneous purchasing. This highlights the critical need to examine how situational factors beyond the consumer’s control influence impulsive tendencies **(Kannan and Vinayagamoorthy, 2014)**.

Husnain et al. 2019 work titled “Personal and in-store factors influencing impulse buying behavior among generation Y consumers of small cities” explored a wide array of contextual variables that shape impulse buying behavior. These include intrinsic elements such as mood and emotional state, as well as extrinsic factors like ambient lighting, background music, and store aesthetics. Broader environmental components—ranging from store layout and design to visual merchandising, point-of-sale displays, and both interior and exterior presentation—have also been identified as influential **(Husnain et al., 2019)**. These dimensions are systematically highlighted in the current literature review.

8.3 Price and Promotions

As per Koschate-Fischer et al 2012 work titled “Are consumers really willing to pay more for a favorable country image? A study of country-of-origin effects on willingness to pay” and in Sunderstrom et al 2013 work titled “Impulsive Buying Behaviour: The Role of Feelings When Shopping for Online Fashion”, a surprisingly low price can act as a powerful trigger for impulse buying, convincing shoppers that they’re spending less than anticipated. This perception of value—often shaped by discounts, limited-time offers, or promotional deals—creates a psychological urgency to act. The opportunity to acquire a product at a reduced cost evokes a strong emotional response, compelling consumers to take the deal rather than risk missing out **(Sundström et al., 2013; Koschate-Fischer et al., 2012)**.

In Park et al. 2012 work titled “Apparel product attributes, web browsing, and e-impulse buying on shopping websites” and in Lim et al. 2015 work titled “What internal and external factors influence impulsive buying behavior in online shopping”, the role of price discounts is highlighted. Price discounts are a dominant force behind impulse buying and remain one of the most widely used promotional strategies in retail. These markdowns don’t just lower the cost—they generate a surge of positive emotion that fuels spontaneous purchasing behavior. Consumers are significantly more prone to act on impulse when confronted with sales or promotional pricing. In many cases, the reduced price becomes the decisive factor, tipping the scale toward an unplanned purchase driven more by emotion than necessity **(Lim and Yazdanifard, 2015; Park et al., 2012)**. Another study published in 2015 by Jamal and Lodhi titled “Consumer shopping behavior in relation to factors influencing impulse buying: A case of superstores in Karachi, Pakistan” stated

that there is a positive relationship between consumer's impulse buying behavior and promotional activities (**Jamal and Lodhi, 2015**). These studies prove a positive and significant relationship between discount offering and impulsive buying.

H1: Sales Promotion and price discounts are positively associated with online impulse buying behavior.

8.4 Money availability

The availability of money plays a pivotal role in shaping impulsive buying behavior (**Beatty and Ferrell, 1998**). When consumers have greater financial flexibility, their original shopping intentions can quickly shift, opening the door to spontaneous purchases. A surplus of resources enhances perceived purchasing power, making it easier to justify unplanned spending (**Foroughi et al., 2013; Luo, 2004**). consistently shows that income levels significantly influence the likelihood of impulse buying (**Awan and Abbas, 2015**). Closely tied to this is the possession of credit cards, which further lowers the psychological barriers to spending. Together, these situational factors—cash on hand, access to credit, and income—create a fertile environment for impulsive decisions to take root (**Khan et al., 2015; Omar et al., 2014**).

H2: Money availability is positively associated with online impulsive buying behavior.

8.5 Store Atmosphere

In physical shopping, several studies have demonstrated that factors related to Graa et al. 2014 work titled “The impact of environmental factors on impulse buying behavior using the Mehrabian and Russell’s framework” reported that the sensory atmosphere of a retail space—its sounds, visuals, and scents—acts as a powerful psychological trigger, often stirring the urge to buy on impulse (**Graa et al., 2014**). Leenders et al. 2016 work titled “Ambient scent as a mood inducer in supermarkets: The role of scent intensity and time-pressure of shoppers” reported that strategic manipulation of these environmental elements through deliberate marketing design can significantly enhance the in-store experience, making navigation more intuitive and shopping more enjoyable. High-quality service from sales personnel further amplifies this effect, not only increasing the likelihood of impulsive purchases but also boosting the chances of repeat visits. A

well-crafted store environment—rich in appealing atmospheric cues—can elevate a shopper’s mood, which in turn becomes a key driver of impulsive buying behavior (Leenders et al., 2019). In online shopping, these factors may be approximated by the website browsing experience, its layout and design, the visual flow of product appetizers, and the algorithms tailored to provide best recommendations for each individual shopper.

H3: Perceived atmosphere of online store shopping experience is positively associated with online impulse buying behavior

8.6 Country of Origin

Samli 1995 work titled “International consumer behavior: Its impact on marketing strategy development” and Yue and Razak 2018 work titled “Impulse buying behavior among working ladies” have reported that the country of origin of a product significantly shapes consumer perceptions, often serving as a mental shortcut based on prior experiences or cultural associations with that nation’s manufacturing standards. This perception acts as a powerful image cue in global marketing, offering firms a potential competitive edge in international markets. Research has consistently shown that country of origin influences how consumers evaluate product quality, reliability, and desirability. In essence, the country of origin functions as a critical informational signal—one that can heavily sway acceptance and success of a product across diverse global markets (Yue and Razak, 2018; Samli, 1995).

H4: Product country of origin is associated with online impulse buying behavior

8.7 Brand reputation

Liapati et al. 2015 work titled “The role of fashion involvement, brand love and hedonic consumption tendency in fashion impulse purchasing” reported that brand identity plays a vital role in triggering impulse buying, largely due to the emotional and informational signals embedded in brand messaging. Consumers often lean heavily on brand reputation to assess product attributes such as authenticity, quality, and trustworthiness—especially in situations where quick decisions are made. The message a brand communicates can shape consumer preferences, evoke emotional responses, and ultimately heighten the likelihood of impulsive purchases. When a brand

successfully cultivates positive affect, it creates a fertile ground for spontaneous buying behavior to emerge (**Liapati et al., 2015**).

H5: Product brand reputation is associated with online impulse buying behavior

8.8 Social Influence/Family Influence

Zhang et al. 2014 work titled “How Online Shopping Interactions Affect Consumers’ Impulse Purchase on Group Shopping Websites” reported that socially driven interactions—particularly those involving peer opinions, product reviews, and perceived credibility—can significantly fuel impulsive buying behavior (**Zhang et al., 2014**). Additionally, Guido et al. 2006 work titled “Shopping motives, big five factors, and the hedonic/utilitarian shopping value: An integration and factorial study” reported that when consumers observe a high number of others purchasing a product or deal, it sends a strong social signal that the item is desirable. This herd behavior effect can lead individuals to interpret popularity as a proxy for quality or value, prompting them to act quickly to secure the same benefit. In essence, when a product gains visibility within a consumer’s social circle or broader market, it can become a catalyst for impulse buying. Moreover, the presence of others—whether physically in-store or virtually through online engagement—has been found to elevate emotional arousal and pleasure, further intensifying the likelihood of spontaneous purchases (**Guido et al., 2006**).

As per Underhill 2009 work titled “Why we buy: The science of shopping—updated and revised for the Internet, the global consumer, and beyond” and Lai 2017 work titled “The comparative research on online impulsive buying behaviour between the UK and China”, social dynamics play a critical role in shaping consumer behavior, particularly in the context of impulse buying. Studies have shown that interactions with friends, family, and acquaintances can significantly alter shopping patterns, with retail environments that attract groups—such as couples or friends—often yielding stronger sales performance (**Underhill, 2009**). Shopping with companions tends to amplify emotional engagement, as peer feedback is highly valued and contributes to a more positive shopping experience, thereby increasing the likelihood of impulsive purchases (**Lai, 2017**).

H6: Social influence is associated with online impulse buying behavior

8.9 Time Availability

As previously established, in Underhill 2009 and in Foroughi et al. 2013 work titled “Impulse buying behavior and moderating role of gender among Iranian shoppers”, the longer a shopper remains in a store, the more likely they are to make unplanned purchases. Time availability has been consistently linked to increased impulsive buying, with studies showing that consumers who aren’t rushed tend to deviate more from their original shopping intentions (**Foroughi et al., 2013; Underhill, 2009**). When the in-store environment is pleasant and engaging, it encourages customers to linger—creating more opportunities for spontaneous purchases to occur. In essence, time becomes a silent enabler of impulse buying, amplifying the effect of environmental and emotional triggers.

H7: Time availability is associated with online impulse buying behavior

8.10 Other factors

Other factors have also been reported to be found significantly associated with impulse buying. One of these factors is gender.

Mburu 2010 research titled “Impulse buying behaviour on country of origin products (home products) by expatriates and its marketing implications” suggests that men, who often view shopping as a task rather than a leisure activity, are less likely to engage in browsing—a behavior closely linked to impulsive purchases. This utilitarian approach to shopping may reduce their susceptibility to spontaneous buying decisions (**Mburu, 2010**). Another key driver is the perceived urge to buy—a sudden, compelling desire that can override rational restraint. Mood also plays a critical role. From a psychological standpoint, individuals in a positive emotional state are more inclined toward approach-oriented behaviors, including rewarding themselves through purchases. Positive affect not only increases the likelihood of impulse buying but also reinforces behaviors aimed at sustaining that elevated mood (**Beatty and Ferrell, 1998**).

H8: Other factors (such as gender, mood, and perceived urge) are associated with online impulse buying behavior

8.11 KSA context

There is a notable scarcity in the data related to impulse buying in KSA. Such a huge knowledge gaps remains yet to be addressed. Only three relevant studies could be found upon our literature review.

The first study was conducted by Singh et al. in 2023 and titled “Measuring social media impact on Impulse Buying Behavior”. The study aimed mainly to analyze the influence of social media on Impulse Buying Behavior among customers in Saudi Arabia. The quantitative study included data from 342 respondents from KSA. Authors reported that Social media advertising has been shown to exert a strong influence on consumers’ impulse buying intentions. In contrast, participation in social media communities appears to have no significant effect on such behavior. However, the explanatory power of the proposed model remains limited—accounting for only 50% of impulse buying intention and just 33% of actual impulse buying behavior. These findings underscore a critical gap in understanding online consumer behavior in the Kingdom of Saudi Arabia, signaling the need for deeper investigation and more nuanced research into the digital drivers of impulsivity in this context (Singh et al., 2023).

The second study was conducted by Alqutub et al. in 2032 and titled “Factors Influencing Impulse Buying Behavior Among Young Male Consumers in Saudi Arabia”. The study aimed to investigate the personal factors that affect impulse buying behavior among young men in Saudi Arabia in addition to investigating the effect of situational variables, including family influence, time availability, money availability, and hedonic shopping, on the impulse buying behavior of men in the Saudi Arabian context, focusing on the Western region. Authors report that time availability, financial flexibility, and hedonic motivations significantly drive impulse buying behavior among men in Saudi Arabia. Interestingly, the study also uncovered a counterbalancing force—family-related factors were found to suppress impulsive tendencies, suggesting that familial influence may act as a behavioral restraint in this demographic. However, the study’s conclusions must be interpreted with caution due to notable limitations, including a restricted sample size and narrow geographic focus. To build a more comprehensive understanding of impulse buying in the Saudi context, future research should expand its scope by incorporating a larger, more demographically and regionally diverse sample (Alqutub, 2023).

The third study was conducted by Arrafi et al. in 2021 and focused on electronic shopping. The paper was titled “Impulse Buying Model for Business-to-Consumer E-Commerce in Saudi Arabia”. Authors directly recommended the incorporation of strategies dedicated for increasing the magnitude of impulse buying in the Saudi e-commerce. Although study participants were familiar with e-commerce and the definition of impulse buying, the majority had a minimum knowledge regarding the effect that impulse buying can create to their purchase decisions. Authors reported that advertisement, impulsiveness as a personality trait, and promotion of products are the main factors that positively influence impulse buying in Saudi Arabia. In contrast, financial income showed no evidence of association with impulse buying (Arrafi et al., 2021).

On the other side of the table, Rahman et al. 2017 publication titled “New Emerging Buying Trends in KSA Customers” highlighted another side of the story. Authors reported that in the evolving Saudi market, consumers are becoming increasingly resistant to superficial marketing tactics. Shoppers in the Kingdom are no longer easily swayed by flashy packaging, catchy slogans, or polished advertisements. Instead, they are demanding substance—expecting transparency, authenticity, and real value from the products they consider. This shift in consumer mindset underscores the core objective of this research: to raise awareness among Saudi shoppers that surface-level marketing is no longer sufficient. Purchasing decisions must be grounded in a deeper understanding of product quality and worth. However, fostering this awareness is not without its challenges. Cultural habits, market inertia, and limited consumer education remain significant barriers (Rahman, 2017).

9 Theoretical Framework

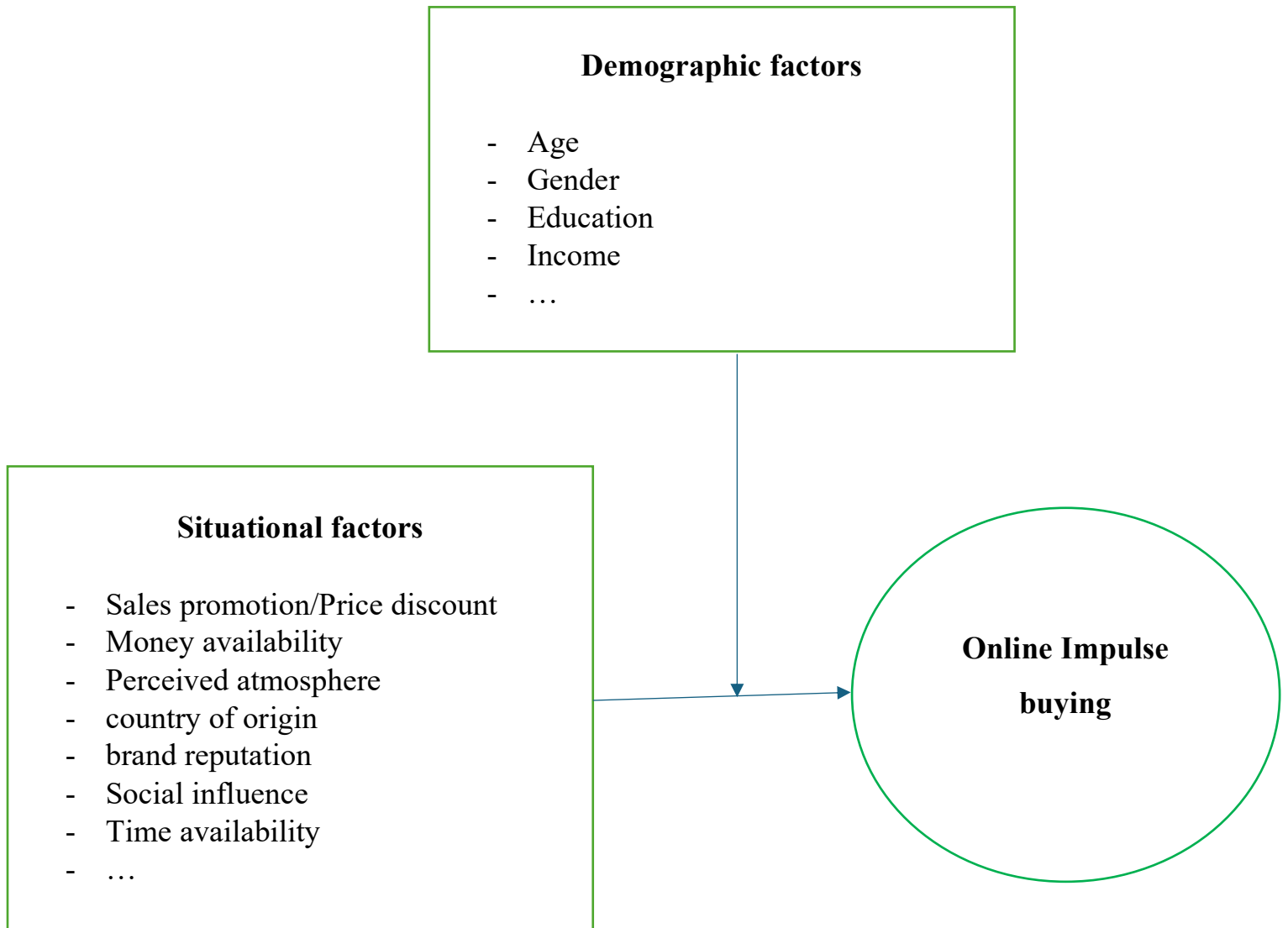


Figure A: *Theoretical framework of the current study.*

10 Methods

Design of the Study: The current study is proposed to adopt a cross-sectional, prospective, and quantitative design. Sampling will be based on convenience sampling and snowball sampling techniques with the aim of recruiting as many KSA-located customers as possible. Data collection tools will be disseminated through social media platforms as well as via physical booths where passer-by individuals will be asked to fill the online questionnaire on-site. To avoid bias, only one member of each family passing by will be asked to fill the questionnaire. An informed consent to participant in the current study will be obtained before-hands from all recruited individuals.

It was previously reported that sample size may be classified into three categories: $n < 100$ small; n between 150 and 200 medium; $n > 200$ large (**Kline, 2023**). We aim to recruit a minimal sample size of 200 complete responses from KSA-located customers.

10.1 Data Collection Tool

10.2 Data Analysis

11 Results

The current study included a total of 204 respondents who fulfilled out selection criteria. **Table 1** shows descriptive statistics of our measurements as stratified by gender. In our data, males represented 76/204 participants (37.3%) while females represented the majority of 128/204 (62.7%) with participants having an overall median age of 33 years. Among males, 33/76 of them were single (43.4%) while females were more commonly married rather than single (52.3%; p-value: 0.02). Among our sample, 114/204 (55.88%) are caregivers with no significant differences in the distribution between males and females (p-value: 0.99). Moreover, female participants were significantly more likely to have received more advanced education (p-value: 0.013). Employment status on the other hand showed no significant differences between genders (p-value: 0.15). However, significantly higher monthly income was reported among males compared to female participants (p-value: <0.001).

As for scores of different domains in our questionnaire, impulse buying behavior was significantly more pronounced among females (median score: 32 vs. 27.5 points; p-value: 0.036). Additionally, females showed a consistent pattern of more severe manifestations of impulse buying as seen in more severe social influence score (p-value: 0.021), hedonic value of shopping score (p-value: 0.002), perceived urge to buy score (p-value: 0.043), and positive mood score (p-value: 0.022).

Table 1: Comparing distribution of study measurements as per gender (n: 204)

		Gender		
Term	Overall N (%)	Male N (%) (n=76)	Female N (%) (n=128)	p-value
Nationality				0.267
Saudi	202 (99.02)	74 (97.4)	128 (100)	
Non-Saudi	2 (0.98)	2 (2.6)	0 (0)	
Marital status				0.02*
Single	63 (30.88)	33 (43.4)	30 (23.4)	
Married	93 (45.59)	26 (34.2)	67 (52.3)	
Separated	38 (18.63)	14 (18.4)	24 (18.8)	
Widow	10 (4.9)	3 (3.9)	7 (5.5)	
Caregiver				0.99
Yes	114 (55.88)	42 (55.3)	72 (56.2)	
No	90 (44.12)	34 (44.7)	56 (43.8)	
Education				0.013*
Before high school	2 (0.98)	1 (1.3)	1 (0.8)	
High school	21 (10.29)	14 (18.4)	7 (5.5)	
Bachelor	147 (72.06)	53 (69.7)	94 (73.4)	
Post-graduate	34 (16.67)	8 (10.5)	26 (20.3)	
Employment				0.15
Working	152 (74.51)	57 (75)	95 (74.2)	
Not working	31 (15.2)	8 (10.5)	23 (18)	
Study, no job	21 (10.29)	11 (14.5)	10 (7.8)	
Monthly income (SAR)				< 0.001***
<5000	60 (29.41)	17 (22.4)	43 (33.6)	
15000-24999	37 (18.14)	21 (27.6)	16 (12.5)	

		Gender		
Term	Overall N (%)	Male N (%) (n=76)	Female N (%) (n=128)	p-value
25000+	17 (8.33)	12 (15.8)	5 (3.9)	
5000-14999	90 (44.12)	26 (34.2)	64 (50)	
$\alpha = 0.05$. $p < 0.05^*$, $p < 0.01^{**}$, $p < 0.001^{***}$				
P-values obtained from Pearson's chi-square test of independence				
		Gender		
Term	Overall	Male	Female	p-value
Age (years)	Med (IQR) 33 (9)	34.5 (14)	32 (7.2)	U: 0.3791
Impulse score	Med (IQR) 31 (20)	27.5 (18.2)	32 (21.2)	U: 0.0367*
Advertisement score	Med (IQR) 10 (8.2)	9 (7)	12 (9)	U: 0.0674
Promotion score	Med (IQR) 12 (7)	11 (5)	12 (6)	U: 0.0736
Social score	Med (IQR) 19 (10)	17 (9)	20 (10)	U: 0.0216*
Hedonic score	Med (IQR) 12 (8)	10 (6)	13 (7.2)	U: 0.0027**
Perceived urge score	Med (IQR) 11 (8)	9 (6.2)	12 (8)	U: 0.0434*
Positive mood score	Med (IQR) 12 (7)	9.5 (7)	12 (6)	U: 0.0226*
Other factors score	Med (IQR) 12 (7)	11 (6.2)	12 (7)	U: 0.0535
$\alpha = 0.05$. $p < 0.05^*$, $p < 0.01^{**}$, $p < 0.001^{***}$				
P-values obtained from two-sample t-test (t) or Mann-Whitney test (U)				

Table 2 investigates a different type of relationship mainly directed towards how change in domain scores predict increase/decrease in other scores. As per the Spearman's correlation test, impulse buying behavior significantly decreases with older age (rho: -0.164). Moreover, impulse buying score demonstrated significant increases correlated with each of the other predictors, including positive mood score (rho: 0.89), perceived urge score (rho: 0.814), and advertisement score (rho: 0.81). Inter-domain correlations were also noted with correlation coefficients ranging from 0.725 up to 0.874.

Table 2: *Spearman's correlation matrix between age and outcome scores (n: 204)*

term	Age (years)	Impulse score	Advertisement score	Promotion score	Social score	Hedonic score	Perceived urge score	Positive mood score
Age (years)	-	-	-	-	-	-	-	-
Impulse score	-0.164*	-	-	-	-	-	-	-
Advertisement score	-0.06	0.813*	-	-	-	-	-	-
Promotion score	-0.025	0.778*	0.867*	-	-	-	-	-
Social score	-0.055	0.832*	0.792*	0.846*	-	-	-	-
Hedonic score	-0.053	0.722*	0.738*	0.768*	0.823*	-	-	-
Perceived urge score	-0.016	0.814*	0.855*	0.782*	0.788*	0.766*	-	-
Positive mood score	-0.07	0.898*	0.81*	0.775*	0.874*	0.825*	0.851*	-
Other factors score	-0.095	0.771*	0.833*	0.81*	0.797*	0.725*	0.863*	0.776*

Table 3 shows that impulse buying behavior is significantly associated with a multitude of sociodemographic factors. More advanced age was significantly associated with less impulsive shopping (coefficient: -0.45; p-value: 0.0045). Females were significantly more likely to express impulsive buying compared to males (coefficient: 5.75; p-value: 0.002). Compared to other categories, single participants showed evidence of a significant tendency towards impulsive buying behaviors (p-values: <0.05). In the same tone, participants who aren't caregivers also showed significantly higher tendency towards being impulsive during online shopping (p-value: <0.001). As for education, those with high school education were also more likely to be impulsive at shopping compared to Bachelor's holders (p-value: 0.0002). Compared to employed participants, those studying and not yet working were significantly less likely to show impulsive buying behaviors (p-value: 0.004).

Table 3: Multiple regression model for factors associated with impulse buying score (n: 204 complete cases)

term	coef (95% CI)	p-value
(Intercept)	53.339 (42.49 to 64.19)	< 0.0001***
Age (years)	-0.456 (-0.77 to -0.14)	0.0045**
Gender	-	-
Male	Ref	Ref
Female	5.575 (2.03 to 9.12)	0.0022**
Nationality	-	-
Saudi	Ref	Ref
Non-Saudi	11.747 (-5.3 to 28.79)	0.1756
Marital status	-	-
Single	Ref	Ref
Married	-6.309 (-11.1 to -1.52)	0.0101*
Separated	-8.505 (-14.46 to -2.55)	0.0053**
Widow	-11.645 (-20.48 to -2.81)	0.0101*
Caregiver	-	-
Yes	Ref	Ref
No	-9.904 (-13.9 to -5.9)	< 0.0001***
Education	-	-
Bachelor	Ref	Ref
Before high school	1.545 (-14.83 to 17.92)	0.8526
High school	11.339 (5.37 to 17.31)	0.0002***
Post-graduate	0.361 (-4.06 to 4.78)	0.8721
Employment	-	-
Working	Ref	Ref
Not working	-1.95 (-6.65 to 2.75)	0.4144
Study, no job	-9.395 (-15.89 to -2.9)	0.0048**

While previous findings are crucial in our understanding of the nature of impulse buying among our target population, evaluating the hypotheses at hand requires a dedicated multiple regression model. **Table 4** shows that more severe impulsive buying behaviors among our target population were significantly associated with advertisements (p-value: 0.005), social influence (p-value: 0.0002), and positive mood (p-value: <0.001). On the other hand, those with higher perceived hedonic value for shopping were less likely to show as severe impulsive behaviors (coefficient: -0.48; p-value: 0.001).

Table 4: *Multiple regression model for other scores associated with impulse buying score (n: 204 complete cases)*

term	coef (95% CI)	p-value
(Intercept)	2.176 (-0.09 to 4.44)	0.0596
Advertisement score	0.522 (0.16 to 0.89)	0.0051**
Promotion score	0.236 (-0.2 to 0.67)	0.2817
Social score	0.506 (0.24 to 0.77)	0.0002***
Hedonic score	-0.48 (-0.76 to -0.19)	0.0011**
Perceived urge score	0.198 (-0.2 to 0.6)	0.3296
Positive mood score	1.448 (1.08 to 1.82)	< 0.0001***
Other factors score	-0.051 (-0.4 to 0.29)	0.7703

All things considered, we have found evidence favoring hypotheses H1 (sales promotion), H6 (social influence), and H8 (other factors including gender, positive mood, and hedonic value of shopping). On the other hand, while evidence favoring all other hypotheses was found via bivariate analysis, multiple modelling failed to show sustained associations with impulsive buying and hence can be deemed irrelevant as per our data.

12 Discussion

The primary objective of the current study was to provide a comprehensive and dedicated analysis of the magnitude and severity of online impulsive shopping within the Saudi context. The need for such stud in the literature can help guide real world businesses and stakeholders alike by increasing the depth of our understanding of the Saudi customer behavior. Of eight proposed hypotheses, three were significantly associated with impulsive buying behaviors among our target population. These factors were advertisements and sales promotion, social influence from peers or family members, and other factors such as gender, positive mood, and hedonic value of shopping.

Findings from our study are in line with previously published data. As for, the factors that showed no significant association with impulse buying this may be considered cultural difference between KSA and other settings. Previously published papers have highlighted the positive relationship between advertisements and sales promotion from one hand and impulsive shopping on the other hand. In many cases, the reduced price becomes the decisive factor, tipping the scale toward an unplanned purchase driven more by emotion than necessity (**Lim and Yazdanifard, 2015; Jamal and Lodhi, 2015; Park et al., 2012**). As for social influence, previous papers have also highlighted the polyshaped association between it and impulsive buying. Socially driven interactions with close ones can fuel impulsive buying behavior (**Zhang et al., 2014**). When a product gains visibility within a consumer's social circle or broader market, it can become a catalyst for impulse buying. Moreover, the presence of others—whether physically in-store or virtually through online engagement—has been found to elevate emotional arousal and pleasure, further intensifying the likelihood of spontaneous purchases (**Guido et al., 2006**). Shopping patterns can be totally swapped for the presence of friends, possibly due to higher emotional engagement thereby increasing the likelihood of impulsive purchases (**Lai, 2017; Underhill, 2009**). Other factors have also been identified in published literature to be associated with impulsive buying. For example, men are said to view shopping as a task rather than a leisure activity, are less likely to engage in browsing—a behavior closely linked to impulsive purchases (**Mburu, 2010**). Mood also plays a critical role. Positive affect not only increases the likelihood of impulse buying but also reinforces behaviors aimed at sustaining that elevated mood (**Beatty and Ferrell, 1998**).

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