

Factors Affecting Arousal and Impulse Buying: The Moderating Effect of Online Campaigns in the Clothing Industry

Minhaj Ikram¹, Ayesha Ali², Mohib Frooqui³

^{1,2,3} Iqra University, Email: minhajikram@gmail.com, ayesha.g23461@iqra.edu.pk, mohib.g23444@iqra.edu.pk

DOI: <https://doi.org/10.70670/sra.v4i1.1857>

Abstract

Drawing on the Stimulus Organism Response model, this research investigates the primary factors affecting the impulse purchasing of clothing among the Generation Z in the clothing shops across Pakistan. Primary data was collected from 255 respondents and analysed using Partial Least Squares Structural Equation Modelling to thoroughly evaluate the measurement and the structural models. The results reveal that time limitations and quantity limitations have considerable knowledge effect on the emotional arousal of consumers. On the other hand, the product recommendation has a negative and reinforcing statistically significant effect on the excitement. Furthermore, arousal is one of the key determinants of impulse buying and online campaigns are a perfect tool to moderate this relationship by increasing the role of arousal on the spontaneous buying behavior. Demonstrating good explanatory power, this research gives important theoretical and managerial insights for optimizing digital commerce strategies in emerging markets.

Keywords: Online Campaign, Product Recommendation, Arousal, Limited Time Scarcity, Limited Quantity Scarcity, Impulse Buying

Introduction

Background of the study

Online shopping has changed the global consumer behavior especially for Generation Z and has introduced new ways of impulse purchasing in various markets. Spontaneous and unplanned purchase decisions are now a defining characteristic of digital commerce that is driven by changing electronic commerce strategies and changing consumer psychology (Lamis et al., 2022). Building on the analysis of the strategies of sales promotion and their global influence on impulse buying by Bandyopadhyay et al. (2021), this research notes how the fashion industry is adapting these strategies on a worldwide level, including well-known Pakistani brands such as Khaddi, Sapphire and Gul Ahmed, to local market dynamics. However, although global research is emphasizing the psychological and technological factors that influence impulse buying, localized knowledge in emerging markets such as Pakistan is greatly unexplored. This research is based on Stimulus Organism Response framework (Lamis et al., 2022) to find the impact of digital marketing tactics related to purchase impulse that differ in terms of cultural and economic context and most of all Pakistan Generation Z consumers. Internationally, studies have found that scarcity strategies such as the limited quantity warnings and the time sensitive deals are not only universally effective in the generation of emotional arousal and impulse buying (Liu et al., 2021). These tactics are further augmented by personalized product recommendations to create a very persuasive online shopping environment. Supporting the use of the Stimulus Organism Response model by Qu et al. (2023), our study discusses the role that global electronic commerce trends such as scarcity promotions and social commerce features play as stimuli that elicit emotional responses which lead to impulse purchases. The introduction of live stream shopping and urgency based marketing across the globe is consistent with the findings on the influence of scarcity cues

on consumer behaviors (Qu et al., 2023). However, the Pakistani electronic commerce landscape does possess some unique industry dynamics which are a combination of global trends and the local cultural and infrastructural factors. While international studies have been done previously of impulse buying across various channels online (Liu et al., 2021), there are fewer works done on how these behaviors are manifested in markets like Pakistan where mobile first shopping model, trust in social commerce and price sensitivity are pivotal.

The sudden rise of electronic commerce in Pakistan has significantly influenced the buying behavior that impulse purchasing has become a dominant trend among Generation Z consumers (Lamis et al., 2022). For both retail businesses and policymakers, it is important to know what the fundamental causes are that drive these purchase intentions, as they have a significant impact on economic growth and digital retail strategies in the marketplace. With the emergence of social media platforms such as TikTok and growing internet penetration in the country, this research focuses on the effects that the consumer behavior is being influenced by global digital practices. Our research fills the current void by examining the cross-relationship between digital marketing strategies and local consumer behaviour to influence impulse buys. The findings will provide comparative insights for retailers in terms of how global best practices can be tailored for local adaptation to positively affect digital consumer behaviour (Lamis et al., 2022). Previous literature has analyzed how impulse buying is affected by scarcity tactics and recommendations that lead to the emotional arousal of an individual (Liu et al., 2021; Qu et al., 2023). Studies have also been done on how buying decisions are highly influenced by limited time offers (Wu et al., 2021). Furthermore, Lamis et al. (2022) examined the effect of external stimuli and cognitive responses on impulse behavior using the Stimulus Organism Response framework. However, most of this research focuses on the markets of the Western and East Asian regions, to the neglect of the Pakistani context.

Despite the many studies conducted on the topic of impulse buying, there is still a big gap in both theoretical and contextual backgrounds. From a theoretical perspective, although the use of scarcity tactics to examine impulse behavior has been used, the impact these tactics have on the psychological triggers of an individual through live streaming is under explored. Moreover, the literature suggests that the effects of price and influencer marketing on impulse buying are yet to be examined in much detail. These drivers can affect impulse buying in different ways through the influence of applications such as Instagram and TikTok in the fashion industry (Lamis et al., 2022). This provides evidence of the need for localized research that can close the gap between what is theoretically known and the particular digital marketplace dynamics of Pakistan. In order to fill these critical gaps, this study uses the Stimulus Organism Response model to investigate the impact of this unique digital ecosystem on impulse buying behavior. The end results will give companies practical advice on how to interact with generation Z customers in an ethical way, while at the same time empowering consumers to make more informed choices in an increasingly convincing online retail landscape.

Literature Review

Theoretical Background

Stimulus-Organism-Response (SOR)

Mehrabian and Russell (1974) developed a theory named SOR which is the theory used in this research. This theory shows how various environmental stimuli impact the consumers affective responses. In previous researches, SOR framework is being extensively used throughout the research in the context of retail market to analyze the behaviors (Lee & Gan, 2020). Tan et al. (2023) examines how consumers decision making process and their impulse buying is impacted by the digital marketing elements like promotions tactics and scarcity elements. To analyze how digital marketing stimuli which includes the product recommendation, limited time scarcity, and limited quantity scarcity impacts the emotional arousal of an individual which leads towards the impulse buying, we have utilized SOR framework for this research (Liu et al., 2021). This research examines how online campaigning impact the Pakistan social media platform plus captures the psychological aspects which impacts an individuals impulse buying under the

framework (Tan et al., 2023). Through this we understand how Pakistani youth is attracted towards social media platform marketing rather than traditional marketing (Lamis et al., 2022). This framework also helps in exploring how consumer behaviour of GenZ is affected by marketing stimuli under the impression of cultural factors. (Qu et al., 2023). So by incorporating the emotional arousal as a mediator and online campaign as moderator, this study analyze how limited time scarcity, limited quantity scarcity, product recommendation impact the arousal, ultimately impacting the impulse buying of an individual under the framework of SOR model (Chopdar & Balakrishnan, 2020). In conclusion, this study aligns with the SOR theory by conceptualizing limited time scarcity, limited quantity scarcity, and product recommendation as the stimuli (S) that evoke emotional arousal (O), leading to impulse buying behavior (R) as the ultimate response. Furthermore, the inclusion of online campaign as a moderator strengthens the link between emotional arousal and impulse buying, emphasizing how digital marketing environments amplify consumers' impulsive tendencies. Thus, the proposed model effectively applies the SOR framework to explain how marketing stimuli influence psychological states and drive consumer behavior in the digital context.

Hypothesis Development

Limited Quantity Scarcity and its impact on Arousal

LQS refers to the marketing strategy in which only some amount of product is been made available for the public for sale. In LQS, businesses made product availability limited by restricting their quantity and making it feel like a scarce resource which results in creating a sense of FOMO in people. This make people to buy product out of the fear of missing out and crates emotional and psychological impact on them (Lamis et al., 2022). Businesses tends ot create LQS by using slogans like “first come first serve” and create a sense of missing out in people (Wu et al., 2021). This made people to think that the product is going to be scarce out of the market (Ullah, et al., 2021). This impacts their arousal out of tension, leading to impulse buying out of the risk of losing it out (Lianjie et al., 2023). It was seen that LQS often triggers the purchase desires of an individual and with the influence of flash sales, psychological aspects of an individual is impacted which results in impulse buying (Fathia & Vania, 2023). It was also found that arousal is also impacted by time pressure created through LQS (Dietrichsteiner et al., 2022). Lazada which is an online shopping platform used tactics like limited quantity and time to foster tension between people an made them do impulse buying (Catriana, 2020). People tend to feel contented when they purchase things before it goes out of stock. (Nigam et al., 2020). In conclusion, it was found out that Limited time quantity significantly impact the arousal and impulse buying of an individual. So under the above study, following hypothesis were made:

H1: Limited quantity scarcity has a significant positive impact on arousal.

Limited Time Scarcity and its impact on Arousal

It refers to the offers that are only present for a limited time regardless of the quantity of the stock behind. This strategy is used to make people do quick decision making and create a sense of urgency in them, making them to do impulse buying (Lamis et al., 2022). It simply focuses on the time restraint rather than the quantity or stock availability. So it triggers the pressure form inside rather than from outside that comes under competition (Broeder & Wentink, 2022). It is basically a psychological phase which is created among the individuals by putting them under pressure of doing quick decision making though alertness or emotional excitement (Sun et al., 2023). Lamis et al., (2022) investigated that by putting a timer on the sales, it creates a sense of urgency in people and make them do quick buying. Shopee increase their sales by doing flash sales and making people buy more. Fathia & Varia (2023) examined and analyzed that giving a shorter time period to react while hopping to the people leads to a higher impulse buying and it also increase the emotional arousal. Lastly, LTS can be used to create a fear of missing out in people leading to a panic situation where people just buy things out of a competitive behaviour (Lianjie et al., 2023). In special events like Ramadan, businesses employ LTS offers to make people excited and trigger their emotional arousal, increasing the impulse buying (Lamis et al.,

2022). The resulting heightened arousal is a key driver of consumer engagement and behavior. So following hypothesis was proposed;

H2: Limited-time scarcity has a significant positive impact on arousal.

Product Recommendation and its impact on Arousal

Product recommendations play a powerful role in stimulating emotional arousal, particularly in digital environments where consumers are constantly exposed to personalized and socially validated content. These recommendations function as environmental stimuli that can trigger immediate emotional responses, such as excitement, curiosity, and urgency. According to Kathuria and Bakshi (2024), personalized recommendations enhance the online shopping experience by aligning with a consumer's interests, preferences, and past behavior. This sense of relevance creates a personal connection that elevates emotional engagement and often results in impulsive buying decisions. On the other hand, Xu & Chen (2024) said that recommendation by people made people to purchase products which they weren't aware of. Peer recommendation is seen as an authentic and reliable source by the people to do purchases. Recommendation on social media platform boosts the individuals trust on the thing and make them do more purchases. So it is examined that people are more likely to do impulse purchasing when they are recommended by companion or peers. Lastly, when things are being made visible or appealing with the social validation on online websites, people seems to trust the online reviews and tends to buy it (Khan, et al., 2021). So these personal recommendation on online sites develops a trustworthy or psychological trigger which leads to emotional response leading to impulse buying of an item (Febrilia & Warokka, 2021). In conclusion, impulse buying was seemed to be significantly being impact by product recommendation elading to higher sales. So following hypothesis was proposed;

H3: Product recommendations has a significant positive impact on arousal.

Arousal and its impact on Impulse Buying

Arousal refers to a physiological level and an elevated or happy mood. It plays a significant role in shaping the behavior of an individual. It was analyzed that people seemed to be more inclined towards impulse buying when they are aroused on the basis of excitement or urgency (Yang et al., 2020). This could be triggered by promotional tactics, scarcity-based marketing strategies or by pressure of time. It was identified that people tend to be more aroused through flash sales or limited quantity thing under the influence of Pleasure Arousal Dominance Theory as per the results of Lamis et al., 2022). These things can trigger the arousal of people and made them do impulse buying. On the other hand, Guo et al., (2017) researched that people are more likely to do impulse buying when they are under the impression of price. Similarly, it was found out that when people are happy, they tends to do more shopping leading to unplanned buying behavior (Wu et al., 2021). Additionally, people tend to do unplanned or sudden purchases when they are triggered by the FOMO during sales or deals (Sugla & Sen, 2023). It is harder for people to resist when they are in contact of visual stimuli or by shopping environment (Feng et al., 2024; Sun et al., 2023). These moments of high emotional stimulation lower self-control and enhance the perceived value of the product in the moment, ultimately increasing impulse buying behavior. In essence, arousal transforms the shopping experience into an emotionally driven process. It overrides rational thinking and fosters urgency, which significantly contributes to impulsive purchase behavior. So following hypothesis was proposed;

H4: Arousal has a significant positive impact on impulse buying.

Online Campaign as a moderator between Arousal and Impulse Buying

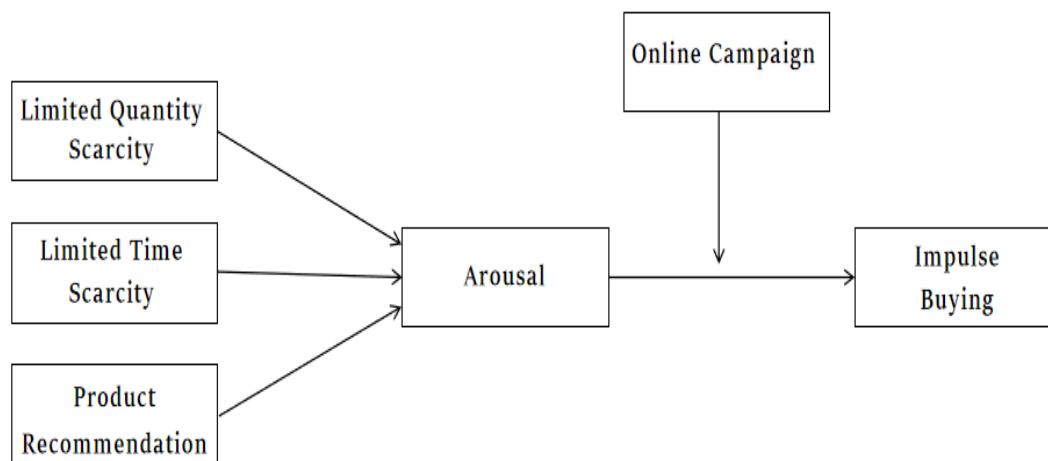
Kathuria and Bakshi (2024) emphasize that online campaigns, such as major shopping festivals, intensify consumer arousal by creating an emotionally charged shopping environment filled with excitement, urgency, and competitive energy. These campaigns enhance promotional appeal through limited-time offers, discounts, and attractive deals, heightening emotional stimulation and encouraging impulsive buying. The dynamic atmosphere fosters hedonic browsing, where

consumers shop for pleasure and entertainment, further increasing arousal levels. This elevated emotional state makes shoppers more susceptible to impulse purchases. Importantly, online campaigns serve as a moderator, reinforcing the connection between impulsive purchasing and arousal. In the presence of these campaigns, arousal becomes more influential, driving consumers to make spontaneous purchase decisions they might not make under normal circumstances. So following hypothesis was proposed;

H5: Online campaigns significantly positively moderate the relationship between arousal and impulse buying.

Conceptual Framework

Figure 01: Conceptual Model



Research Methodology

This chapter gives a thorough explanation of the research methodologies used in the study, including the target population, data sources, measurement tools, sample plan, research design, operational definitions of dependent and independent variables, and data collection techniques. Research methodologies are classified into three categories: mixed, qualitative, and quantitative. In order to evaluate theories, quantitative research uses structured surveys to gather numerical data. To comprehend experiences, qualitative research employs observations or interviews. To examine the relationships between variables, this study uses a quantitative technique (Kircher & Zipp, 2022). This study's explanatory goal is to make clear how the factors relate to one another and how that affects arousal and impulsive purchasing (Baran et al., 2022). The research also aims to examine and elucidate the main elements that influence consumers' impulsive purchasing decisions. To investigate the connections between the variables, a correlational research design is used (Ghanad, 2023). This design makes it possible to ascertain whether PR, LQS, and LTS are associated with one another and how their effects on arousal in turn affect impulsive purchasing. In this study, target population include the people in Pakistan who shop for clothes from popular local fashion brands. Participants were asked which brand they usually shop from Gul Ahmed, Sapphire, Khaadi, or any other. These brands were chosen because they are well-known and have a large number of regular customers. Since shoppers of these brands often see different promotions and product suggestions, they were the right fit for this study to understand how excitement or emotional arousal can impact impulse buying.

Sampling techniques are divided into probability and non-probability methods. Probability sampling gives each population member an equal chance of selection, enhancing representativeness. Non-probability sampling, including convenience sampling, does not (Shamsudin et al., 2024). This study used convenience sampling, selecting participants based on their availability and willingness to respond. It was chosen for its practicality, allowing quick data collection from online users, though it may limit generalizability due to potential sampling bias. We calculated the minimum sample size needed for our study using Daniel Soper's online sample size calculator. It showed a minimum data requirement as 161 individuals. An online

questionnaire was created and send towards the individuals through Whatsapp to gather data. The questionnaire contained statements and score range was employed through Likert scale 5 point from “Strongly agree” till “Strongly Disagree”.

This study used a 28-item questionnaire covering six variables to collect primary data from regular shoppers of popular Pakistani clothing brands. Distributed via WhatsApp, Instagram, and Facebook, the online survey used a 5-point Likert scale. Convenience sampling was applied, and responses were collected anonymously to ensure privacy and encourage honest, emotional, and attitudinal feedback. The item were adapted from pervious studies, which is presented in table 1 below:

Table 1: Definitions and Source of Items

Sr.	Construct	Definition	Source of Items
1	Limited Quantity Scarcity	LQS refers to restricting product availability to a fixed number, creating urgency and competition among consumers, which increases emotional arousal and purchase pressure	(Lamis et al., 2022).
2	Limited Time Scarcity	LTS involves offering promotions for a short duration, triggering urgency and emotional arousal as consumers fear missing out due to the time-limited nature of the deal	(Broeder & Wentink, 2022).
3	Product Recommendation	Product recommendations, whether algorithm-based or peer-generated, emotionally engage consumers by offering relevant or socially endorsed items, triggering arousal and influencing unplanned purchase behavior	(Yang et al., 2020).
4	Arousal	Arousal is a state of heightened emotional and physiological activation, such as excitement or anxiety, that influences spontaneous decision-making and increases susceptibility to impulse buying	
5	Impulse Buying	Impulse Buying is the urge to buy something without any plan due to the emotional connection, arousal or situational triggers	(Sugla & Sen, 2023).
6	Online Campaign	Online campaign refers to the any promotional events that are held to arouse the people and their emotional excitement to do impulse buying	(Kathuria & Bakshi, 2024).

Data Analysis

In this section, it explores and analyze the factors that impacts the impuls ebuying using 255 respondets data. To analyze the relationship between the variables SMART PLS-SEM 4 was employed. Using data of 50 people, pilot testing was done to ensure the reliability and clarity using questionnair (Ramlan et al., 2025). The outcome allowed to do a full scale data gathering as our Cronchbach alpha value comes greater than 0.7 which is the minimum limited (Lee et al., 2025). A data screening was occurred before testing the hypothesis to ensure whether the data is reliable, trustworthy or good or not, which would lead towards a better research finding. After using the SPSS, no such outlier or missing value was identified in the dataset. It shows that the data collected was clean and ready to use. This ensured the validity and reliability of the results.

Descriptive Analysis

Composition of Data

Table 2 displays the demographic profile of the respondents. Of the 255 participants, 59.2% were men and 40.8% were women, representing a slightly higher proportion of men. Only a small percentage of respondents were over 35, with 56.9% of respondents being between the ages of 18 and 24 and 36.1% being between the ages of 25 and 34. The monthly income of 31% of households was less than PKR 50,000, 21.6% was between PKR 50,001 and 80,000, and 19.6% was between PKR 80,001 and 120,000. The most popular clothing brands were Khaddi (18%), Sapphire (18.4%), and Gul Ahmed (24.3%), but 39.2% of buyers purchased from other brands. Most people only shopped infrequently (31.4%) or infrequently (32.5%).

Table 02: Demographic Profile

		Frequency	Percentage
Gender	Male	151	59.2%
	Female	104	40.8%
Age	18 - 24	145	56.9
	25 - 34	92	36.1
	35 - 44	14	5.5
	45 - 54 Above	4	1.6
Monthly Household Income	Less than 50,000	79	31
	50,001 - 80,000	55	21.6
	80,001 - 120,000	50	19.6
	120,001 - 200,000	39	15.3
Which brand do you usually shop from for clothing?	Above 200,000	32	12.5
	Gul Ahmed	62	24.3
	Sapphire	47	18.4
	Khaddi	46	18
How often do you shop for clothing online?	Others	100	39.2
	Rarely	83	32.5
	Occasionally	80	31.4
	Frequently	56	22
	Very Frequently	36	14.1

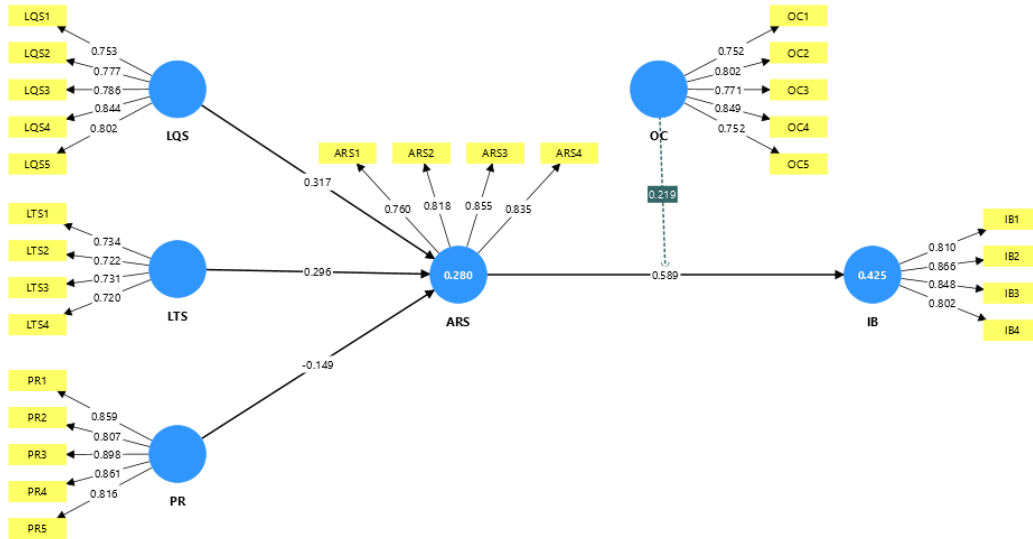
Data Analysis through PLS-SEM

Partial least squares structural equation modeling, or PLS-SEM, was utilized to analyze the hypotheses made in this study using the latest version of the SmartPLS 4 software. This technique is adopted because of its flexibility and advantages. Through this data can be handled without any strict parameter assumptions like outliers, which makes it ideal for assessing datasets with non-normal distributions (Alamer, 2025).

Outer Measurement Model

The outer measure model assessed the connection between hidden concepts and their indicators in order to guarantee validity and reliability (Hair et al., 2020). PLS-SEM was appropriate due to the model's complexity, which included numerous variables and mediators. By confirming that each indicator appropriately reflected its intended construct, exploratory factor evaluation or EFA, validated measurement accuracy.

Figure 03: Measurement of outer model



Reliability and Validity Testing

Convergent Validity shows the extent at which a set of items fully captures the underlying concept of the variables (Chin & Yao, 2024). It is evaluated based on three main factors. First, factor loadings should ideally be greater than 0.7 and statistically significant, though values above 0.6 may occasionally be considered acceptable (Hair et al., 2021). Second, if the AVE is greater than 0.5, there should be sufficient convergent validity. Third, composite reliability needs to be greater than 0.7 in order to guarantee that the constructs are measured accurately (Hair et al., 2020). Cronbach (1951) elaborates that a Cronbach’s alpha value of 0.6 or above indicates acceptable internal consistency (Lee et al., 2025). As shown in Table 03, every indicator in this study either meets or surpasses these thresholds, demonstrating the successful establishment of construct reliability and convergent validity.

Table 03: Reliability and Validity

	Items	Loadings	CR	AVE	α
Arousal	ARS1	0.760	0.890	0.669	0.835
	ARS2	0.818			
	ARS3	0.855			
	ARS4	0.835			
Impulse Buying	IB1	0.810	0.900	0.692	0.851
	IB2	0.866			
	IB3	0.848			
	IB4	0.802			
Limited Quantity Scarcity	LQS1	0.753	0.894	0.629	0.852
	LQS2	0.777			
	LQS3	0.786			
	LQS4	0.844			
	LQS5	0.802			
Limited Time	LTS1	0.734	0.818	0.528	0.704

Scarcity	LTS2	0.722			
	LTS3	0.731			
	LTS4	0.720			
	LTS5	Deleted			
Online Campaign	OC1	0.752	0.890	0.618	0.846
	OC2	0.802			
	OC3	0.771			
	OC4	0.849			
	OC5	0.752			
Product	PR1	0.859	0.928	0.720	0.903
Recommendation	PR2	0.807			
	PR3	0.898			
	PR4	0.861			
	PR5	0.816			

Discriminant Validity

Discriminant validity evaluates each item's capacity to distinguish across many constructs (Henseler et al., 2015). This study assessed discriminant validity using three methods. To ensure that each item's loading on its assigned build was at least 0.1 higher than its loadings on other constructions, cross-loadings were initially checked. Second, the Fornell-Larcker criterion (1981) was used to confirm that the square root of the Average Variance Extracted (AVE) for each construct was greater than its correlations with other constructs. Fornell-Larcker criterion is presented in table 4 below:

Table 04: Discriminant Validity by using Fornell and Larcker (1981) criterion

	ARS	IB	LQS	LTS	OC	PR
ARS	0.818					
IB	0.611	0.832				
LQS	0.442	0.542	0.793			
LTS	0.407	0.491	0.400	0.727		
OC	0.024	0.133	0.025	0.169	0.786	
PR	0.130	0.037	0.041	0.107	0.654	0.849

When the HTMT (Heterotrait-Monotrait) ratio was ultimately evaluated, discriminant validity was verified. Every number was below the 0.85 threshold, which is what Cheung et al. (2024) advise. The results of HTMT are presented below in table 5:

Table 05: Heterotrait-Monotrait Ratio (HTMT)

	ARS	IB	LQS	LTS	OC	PR	OCxARS
ARS							
IB	0.718						
LQS	0.515	0.636					
LTS	0.521	0.640	0.522				
OC	0.118	0.161	0.141	0.239			
PR	0.145	0.098	0.162	0.216	0.752		
OCxARS	0.130	0.317	0.176	0.232	0.553	0.319	

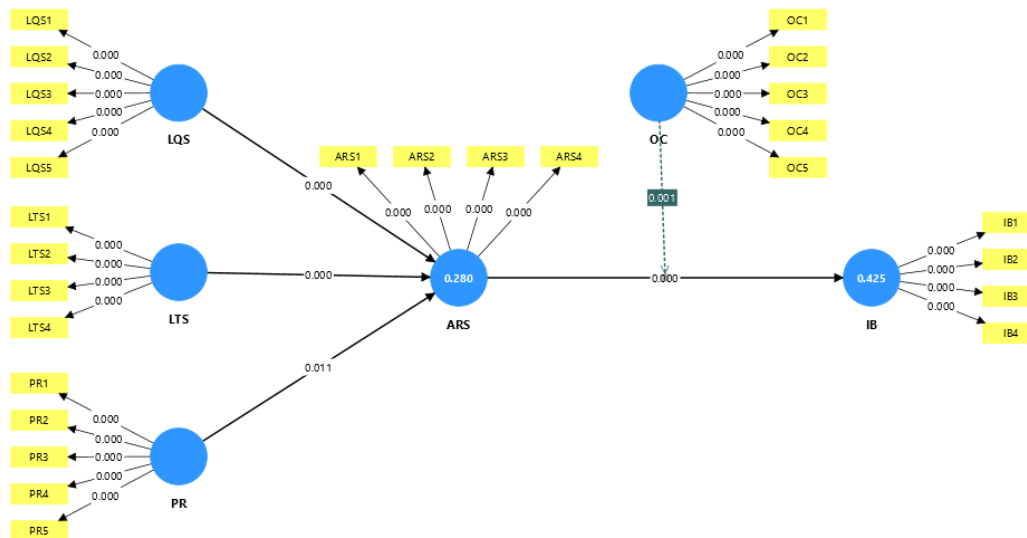
Hypothesis Testing

After the validity of the measurement model was confirmed, the structural model was assessed using SmartPLS 4. Because of the study's complexity and numerous variables, PLS-SEM was chosen. A t-value greater than 1.96 was considered significant at the 5% level, and path coefficients were evaluated using bootstrapping with 255 samples. H1 and H2, which relate LQS and LTS to ARS, were strongly supported, as Table 06 demonstrates. H3 was rejected because it showed a significant but unfavorable connection between PR and ARS. The idea was supported by H4, which showed that ARS had a significant favorable impact on IB. Likewise, H5 verified that OC × ARS had a statistically significant moderating effect on IB.

Table 06: Inner Model Results

Hypothesis No.	Hypothesized Effect	Coefficients	T-values	P-values	Decision
H1	LQS -> ARS	0.317	5.234	0.000	Accepted
H2	LTS -> ARS	0.296	4.978	0.000	Accepted
H3	PR -> ARS	-0.149	2.557	0.011	Rejected
H4	ARS -> IB	0.589	13.762	0.000	Accepted
H5	OC x ARS-> IB	0.219	3.254	0.001	Accepted

Figure 04: Hypothesis Testing after Bootstrapping



Predictive Power

In the last stage, the R2 values were used to evaluate the explanatory capacity of the structural model (Hair et al., 2022). The R2 values for ARS and IB were 0.280 and 0.425, respectively, with matching corrected R2 values of 0.272 and 0.418, as indicated in Table 07. Both constructs have appropriate explanatory power since they surpass the Kamdjoug (2025) recommended minimum threshold of 0.1. The findings demonstrate the model's higher predictive accuracy for

IB than for ARS, indicating that it explains a moderate amount of variance in IB and a smaller but still significant amount in ARS.

Table 07: Predictive Quality Indicators of the Model

	R-square	R-square adjusted
ARS	0.280	0.272
IB	0.425	0.418

Discussion

For this study, information was gathered from 255 people who frequently shop for clothes online. To guarantee accuracy and consistency, the data were initially vetted and put through pilot testing. After that, SPSS was used to verify the accuracy of the data, and SmartPLS 4 using the SEM technique was used to do the analysis. It employed alpha, CR, AVE, R2, Path coefficients to analyze the internal consistency, and to see which hypothesis are rejected and which are accepted.

Discussion of Results

This study highlights the main factors that affect the impulse buying behavior of the Generation Z consumers in Pakistan. The empirical results are consistent with the first two hypotheses and show that both limited time scarcity and limited quantity scarcity have a significant impact on emotional arousal. This suggests that scarcity cues are effective in triggering emotional excitement, which, in turn, causes impulse buying (Zhang et al., 2022). Interestingly, product recommendations showed a significant but negative effect on the arousal, and thus the third hypothesis was rejected. This suggests that consumers are motivated to impulse purchase by emotional urgency, rather than algorithmic suggestions. In this context, such recommendations could fail to raise excitement, but instead may be perceived as unreliable, unauthentic, or intrusive and have a negative effect on arousal. Impulse buying was significantly predicted by arousal, thus confirming the fourth hypothesis and showing it to be a key psychological mediator in the Stimulus Organism Response model (Li et al., 2021). Additionally, online campaigns greatly moderates the relationship between arousal and impulse buying. This supports the fifth hypothesis and shows that persuasive promotional campaigns increase the emotional states of individuals and positively influence their purchase decisions (Luo et al., 2021). The structural model had a moderate predictive power and the R square values for arousal and impulse buying were 0.280 and 0.425 respectively. These results are consistent with the previous research while pointing to culturally specific details relevant to the online shopping in Pakistan.

Conclusion

This research examined the effects of psychological stimuli and marketing factors on impulse buying behavior of Generation Z consumers in Pakistan. Utilizing the Stimulus Organism Response theory, the research looked into the impact of online campaigns, product recommendations and use of scarcity strategies. Data obtained from 255 respondents were examined with the Partial Least Squares Structural Equation Modeling and the results produced significant theoretical and practical implications. The results supported the efficacy of digital stimuli, which was confirmed by showing positive effects of limited quantity and limited time scarcity on emotional arousal (Broeder & Wentink, 2022; Zhang et al., 2022). On the contrary, arousal was adversely affected by product recommendations as it suggests Pakistani consumers make spontaneous purchases and it was based more on emotional urgency rather than algorithmic product recommendations (Lee et al., 2023). The function of arousal as a central psychological mechanism was reinforced because it was found to be a strong predictor of impulse buying (Guo et al., 2017). Furthermore, the contextual power of persuasive promotions was stressed by online campaigns, which significantly increased the relationship between arousal and impulsive purchasing behavior.

According to the predictive power of the model, a significant part of the behaviour of purchasing online can be explained by this combination of psychological triggers and digital marketing

strategies. This study has been successful in applying the theoretical framework to a South Asian context, which can provide important information regarding the moderating role of online campaigns and the mediating role of arousal. Contextually it bridges the unique realities of the mobile driven market in Pakistan but also the overall findings from the global electronic commerce. For the retail management, these results offer some tactics of practice which highlight the significance of providing scarcity cues, the need for an authentic expression of the products and the strategic inclusion of online marketing campaigns to maximize the user's interaction. Overall, the research adds to the academic body of literature, as well as provides retailers with useful strategies to engage Gen Z consumers in a changing and fast-paced digital marketplace.

Theoretical Contributions

By using the concepts of Stimulus Organism Response to the context of Digital Commerce in Pakistan, this study contributes immensely to the theoretical understanding. The research reveals that not all digital marketing strategies are equal and work with much productivity. Although the scarcity cues had similar results to global findings, the suggestion of products had surprising results which illustrate the subtleties of consumer psychology related to cultural skepticism and trust. Furthermore, understanding the psychological mechanisms through which digital promotions operate, the existence of the moderating effect of digital campaigns and the mediating role that arousal play is also of great help to increase the theoretical applications of the model. This adds to the academic information base on the factors that influence impulse buying in complex ways by a combination of contextual and emotional factors in developing retail markets.

Contextual Contributions

In the light of the electronic commerce environment in Pakistan, this study fills one of the major knowledge gaps relating to digital impulse buying. Although the previous research in East Asian and Western contexts show the importance of the use of recommendation algorithms and tactics of scarcity, this research finds unique cultural dynamics in a market heavily driven by mobile. The results show that Pakistani Generation Z consumers are very responsive to the scarcity cues especially the limited time and limited quantity offers which is an expression of heightened sensitivity to urgency based marketing. Product recommendations, on the other hand, were much less successful. This would suggest that consumer responses are impacted in different ways by perceived intrusiveness, underlying issues of trust or by specific cultural attitudes to artificial intelligence driven recommendations. In addition, the moderating effect of the online campaigns shows the great importance of contexts of promotions for increasing the impact of emotional arousal on spontaneous purchases.

Managerial Implications

The findings of this research provide very significant insights for any digital marketer, retailer or fashion brand who would like to enhance engagement levels of consumers and impulsive buying in Pakistan. Scarcity based tactics, such as limited stock and time restricted offers should be given top priority in from a strategic perspective as they are effective in increasing the level of emotional arousal of consumers as well as in stimulating the impulse buying behavior of consumers. However, product recommendations do have to be conducted with care and an over-reliance on automated algorithms may be perceived as impersonal or untrustworthy. Brands can also leverage influencer backing, user generated content, and authentic customer reviews to build credibility and create a stronger emotional connection.

Moreover, online campaigns act as an important moderating factor due to the intensification of the emotional response that actually results in impulse buying. Interactive marketing tools, such as live stream shopping events, influencer collaborations, and personalized social media advertising, can significantly boost consumer engagement and purchase intent. Retailers should take a data driven, yet human centric approach and make use of information gained from consumer behavior to create emotionally resonant and culturally relevant digital campaigns.

Finally, there has to be a fine balance between ethics of persuasion and ethics of pushing money or there will be a loss of consumer trust and loyalty in the long run. By successfully implementing these strategies, leading Pakistani brands such as Gul Ahmed, Sapphire, and Khaadi can not only capture the attention of Generation Z consumers, but also build long-term brand relationships and gain a competitive edge in the digital marketplace.

Limitations and Future direction

Despite its contribution to empirical knowledge, there are some methodological limitations in this study. First, the generalizability of the sample representing Pakistan or other demographic segments of the population is limited as the data was collected from 255 Generation Z consumers specifically located in Karachi. Future research should be conducted based on larger and more diverse samples based on different age groups and larger geographical areas. Second, there may have been social desirability bias in terms of mentioned self reported survey data. Including actual behavioral data from actual online purchase histories could go a long way towards improving the validity of measurement in future studies. Third, although the research covered online campaigns, product recommendations and scarcity, it did not address other factors relevant in the digital sphere such as influencer marketing, gamification and trust in payment systems. The addition of these additional variables into future conceptual models would constitute much more complete knowledge on digital impulse buying dynamics in developing nations.

References

- Alamer, A. (2025). Structural equation modeling in L2 writing research: Simple tutorial and useful recommendations. *Research Methods in Applied Linguistics*, 4(2), Article 100202. <https://doi.org/10.1016/j.rmal.2025.100202>
- Bandyopadhyay, N., Sivakumaran, B., Patro, S., & Kumar, R. S. (2021). Immediate or delayed! Whether various types of consumer sales promotions drive impulse buying? An empirical investigation. *Journal of Retailing and Consumer Services*, 61, Article 102532. <https://doi.org/10.1016/j.jretconser.2021.102532>
- Baran, M. L. (2022). Mixed methods research design. In *Research anthology on innovative research methodologies and utilization across multiple disciplines* (pp. 312 to 333). IGI Global.
- Broeder, P., & Wentink, E. (2022). Limited time scarcity and competitive arousal in e commerce. *The International Review of Retail, Distribution and Consumer Research*, 32(5), 549 to 567. <https://doi.org/10.1080/09593969.2022.2098360>
- Catriana, E. (2020, May 1). Selama Ramadhan ini promo dari Shopee, Tokopedia, hingga Lazada. *Kompas*. <https://money.kompas.com/read/2020/05/01/161100126/selama-ramadhan-ini-promo-dari-shopee-tokopedia-hingga-lazada?page=all>
- Cheung, G. W., Cooper Thomas, H. D., Lau, R. S., & Wang, L. C. (2024). Reporting reliability, convergent and discriminant validity with structural equation modeling: A review and best practice recommendations. *Asia Pacific Journal of Management*, 41(2), 745 to 783.
- Chin, C. L., & Yao, G. (2024). Convergent validity. In *Encyclopedia of quality of life and well being research* (pp. 1398 to 1399). Springer.
- Chopdar, P. K., & Balakrishnan, J. (2020). Consumers response towards mobile commerce applications: S O R approach. *International Journal of Information Management*, 53, Article 102106. <https://doi.org/10.1016/j.ijinfomgt.2020.102106>
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297 to 334.
- Dietrichsteiner, S., Lindgren, K., & Okanovic, I. (2022). A quantitative study on the effect LQS and LTS has on purchase intention in an online context. Unpublished manuscript.
- Fathia, N., & Vania, A. (2023). Impulsive buying behavior: Scarcity impact of flash sale through arousal as mediating variable. *Jurnal Mantik*, 7(3), 1766 to 1776. <https://doi.org/10.35335/mantik.v7i3.4189>

- Febrilia, I., & Warokka, A. (2021). Consumer traits and situational factors: Exploring the consumer online impulse buying in the pandemic time. *Social Sciences & Humanities Open*, 4(1), Article 100182. <https://doi.org/10.1016/j.ssaho.2021.100182>
- Feng, Z., Al Mamun, A., Masukujjaman, M., Wu, M., & Yang, Q. (2024). Impulse buying behavior during livestreaming: Moderating effects of scarcity persuasion and price perception. *Heliyon*, 10(7), Article e28347. <https://doi.org/10.1016/j.heliyon.2024.e28347>
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39 to 50. <https://doi.org/10.1177/002224378101800104>
- Ghanad, A. (2023). An overview of quantitative research methods. *International Journal of Multidisciplinary Research and Analysis*, 6(8), 3794 to 3803.
- Guo, J., Xin, L., & Wu, Y. (2017). Arousal or not? The effects of scarcity messages on online impulsive purchase. In *HCI in business, government and organizations. Supporting business: 4th international conference, HCIBGO 2017* (pp. 29 to 40). Springer. https://doi.org/10.1007/978-3-319-58484-3_3
- Hair, J. F., Jr., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS SEM using confirmatory composite analysis. *Journal of Business Research*, 109, 101 to 110.
- Hair, J. F., Jr., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial least squares structural equation modeling using R: A workbook*. Springer.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115 to 135.
- Kamdjou, J. R. K. (2025). Placeholder: Please update with the correct publication details for Kamdjou 2025.
- Kathuria, A., & Bakshi, A. (2024). Influence of promotional factors on online impulse buying: Exploring the mediating role of impulse buying tendency. *Current Psychology*, 1 to 17. <https://doi.org/10.1007/s12144-024-06911-8>
- Kircher, R., & Zipp, L. (2022). Questionnaires to elicit quantitative data. In *Research methods in language attitudes* (pp. 129 to 144). Cambridge University Press.
- Lamis, S. F., Handayani, P. W., & Fitriani, W. R. (2022). Impulse buying during flash sales in the online marketplace. *Cogent Business & Management*, 9(1), Article 2068402. <https://doi.org/10.1080/23311975.2022.2068402>
- Lee, J., Yi, M., Song, W., Dwyer, J., Williams, B., & Moskal, B. (2025). Revised calculus concept inventory: Measuring the learning gains of students in a first calculus course. *International Journal of Research in Undergraduate Mathematics Education*, 1 to 22.
- Lee, Y. Y., & Gan, C. L. (2020). Applications of SOR and para social interactions towards impulse buying: The Malaysian perspective. *Journal of Marketing Analytics*, 8, 85 to 98. <https://doi.org/10.1057/s41270-020-00077-5>
- Lee, Y. Y., Gan, C. L., & Liew, T. W. (2023). Rationality and impulse buying: Is your emotion a part of the equation? *Computers in Human Behavior Reports*, 12, Article 100337. <https://doi.org/10.1016/j.chbr.2023.100337>
- Li, B., Hu, M., Chen, X., & Lei, Y. (2021). The moderating role of anticipated regret and product involvement on online impulsive buying behavior. *Frontiers in Psychology*, 12, Article 732459. <https://doi.org/10.3389/fpsyg.2021.732459>
- Lianjie, C., Ahmad, A., & Kassim, A. A. M. (2023). Impact of scarcity on panic buying: Assessing the mediating role of anxiety and the moderating role of event perception. *International Journal of Professional Business Review*, 8(6), Article e02377. <https://doi.org/10.26668/businessreview/2023.v8i6.2377>
- Liu, X., Zhou, Y. W., Shen, Y., Ge, C., & Jiang, J. (2021). Zooming in the impacts of merchants participation in transformation from online flash sale to mixed sale e commerce platform.

- Luo, H., Cheng, S., Zhou, W., Song, W., Yu, S., & Lin, X. (2021). Research on the impact of online promotions on consumers impulsive online shopping intentions. *Journal of Theoretical and Applied Electronic Commerce Research*, 16(6), 2386 to 2404. <https://doi.org/10.3390/jtaer16060131>
- Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology*. MIT Press.
- Nigam, A., Dewani, P. P., & Behl, A. (2020). Exploring deal of the day: An e commerce strategy. *Benchmarking: An International Journal*, 27(10), 2807 to 2830. <https://doi.org/10.1108/BIJ-03-2020-0129>
- Qu, Y., Khan, J., Su, Y., Tong, J., & Zhao, S. (2023). Impulse buying tendency in live stream commerce: The role of viewing frequency and anticipated emotions influencing scarcity induced purchase decision. *Journal of Retailing and Consumer Services*, 75, Article 103534. <https://doi.org/10.1016/j.jretconser.2023.103534>
- Ramlan, A. F., Ridzuan, A. R., Hassan, M. S., & Ismail, S. N. (2025). A pilot study of self determination, online media credibility and non communicable disease prevention behavior. *e Journal of Media and Society*, 8(2), 106 to 121.
- Shamsudin, M. F., Hassim, A. A., & Abd Manaf, S. (2024). Mastering probability and non probability methods for accurate research insights. *Journal of Postgraduate Current Business Research*, 9(1), 38 to 53.
- Sugla, R., & Sen, S. (2023). Influence of social and economic factors on impulse buying: A research framework. *BIMTECH Business Perspectives*, 4(1). <https://doi.org/10.1177/25819542231185603>
- Sun, B., Zhang, Y., & Zheng, L. (2023). Relationship between time pressure and consumers impulsive buying: Role of perceived value and emotions. *Heliyon*, 9(12), Article e23185. <https://doi.org/10.1016/j.heliyon.2023.e23185>
- Tan, L., Li, H., Chang, Y. W., Chen, J., & Liou, J. W. (2023). How to motivate consumers impulse buying and repeat buying? The role of marketing stimuli, situational factors and personality. *Current Psychology*, 1 to 16. <https://doi.org/10.1007/s12144-022-04230-4>
- Ullah, R., Cavaliere, P. L., Hussain, B., Khan, A., & Gogosh, M. (2021). Does Human Resource Management Practices Increased Employees Performance?(An Analytical Study of Pakistan Telecom Corporation). *Elementary Education Online*, 20(3), 2259-2259.
- Wu, Y., Xin, L., Li, D., Yu, J., & Guo, J. (2021). How does scarcity promotion lead to impulse purchase in the online market? A field experiment. *Information & Management*, 58(1), Article 103283. <https://doi.org/10.1016/j.im.2020.103283>
- Xu, Y., & Chen, Z. (2024). Placeholder: Please update with the correct publication details for Xu and Chen 2024.
- Yang, K., Kim, H. J. M., & Zimmerman, J. (2020). Emotional branding on fashion brand websites: Harnessing the pleasure arousal dominance model. *Journal of Fashion Marketing and Management*, 24(4), 555 to 570. <https://doi.org/10.1108/JFMM-03-2019-0055>
- Zhang, J., Jiang, N., Turner, J. J., & Pahlevan Sharif, S. (2022a). The impact of scarcity on consumers impulse buying based on the SOR theory. *Frontiers in Psychology*, 13, Article 792419. <https://doi.org/10.3389/fpsyg.2022.792419>
- Zhang, Z., Zhang, N., & Wang, J. (2022b). The influencing factors on impulse buying behavior of consumers under the mode of hunger marketing in live commerce. *Sustainability*, 14(4), Article 2122. <https://doi.org/10.3390/su14042122>