

Exploring the Impact of Scarcity and Brand Awareness on Online Impulsive Buying Behavior: A Moderated Analysis

Tariq Jalees^{1*}, Adnan Anwar², Imran Zaman³, Sahar Qabool⁴

Abstract

Given the popularity of and easy access to the internet, consumers' attitudes towards life and shopping behavior have changed significantly, and so has online impulsive buying behavior. While there are numerous studies on online impulsive behavior, few have examined the moderating effects of scarcity and brand awareness on online impulsive buying behavior. As such, this study aims to fill these gaps by exploring the effects of value shopping, low price perception, and browsing on impulsive online buying and examining the moderating roles of scarcity and brand awareness. After recruiting six enumerators, we distributed 500 questionnaires and received 423 responses from target business universities. Using Smart PLS, we tested the proposed hypotheses. Of these six hypotheses, the results supported one direct and two moderating hypotheses. It was found that value shopping significantly affects impulsive online buying, whereas low price perception is negatively associated with online impulsive buying. Also, browsing had an insignificant association with impulsive online buying. Furthermore, scarcity was found to moderate the relationship between browsing and impulsive online buying, and brand awareness also moderated the relationship between low price perception and online impulse buying. However, the result did not support brand awareness moderating the relationship between value shopping and impulsive online buying.

Keywords: *Brand awareness, online impulsive buying behavior, browsing, perceived low price, scarcity, value shopping*

1 PAF Karachi Institute of Economics and Technology, Pakistan * Corresponding author, email: tariquej2004@yahoo.com

2 PAF Karachi Institute of Economics and Technology, Pakistan

3 Jinnah University for Women, Karachi, Pakistan

4 PAF Karachi Institute of Economics and Technology, Pakistan

1 INTRODUCTION

The emergence of technology has empowered consumers to visit online shopping sites frequently and that also allows consumers to compare prices of the same products at various sites. Compared to brick-and-mortar shopping, online shopping media is always accessible, allowing customers to purchase items from their homes, offices, or any other place of convenience. Due to consumer demand, private shopping clubs have emerged, catering to the special needs of consumers (Alzoubi et al., 2022). These clubs benefit from developing a loyal customer base, while customers benefit from the belief that the clubs may have products that will fulfill their needs. The availability and comparison of price offerings with the click of a button has made these consumers impulsively buy the product due to large assortment of

products from competing manufacturers simultaneously and the resulting price discounts at these sites (Alzoubi et al., 2022). Wadera and Sharma (2018) have described impulsive buying behavior as consumers' instant, unplanned urge to make a purchase decision due to exposure to stimulants. Consumers' impulsive purchase behavior is crucial to producers and retailers as it accounts for a substantial portion of their sales. Therefore, many companies try to understand the causes of online impulsive buying to create effective strategies to attract more and more customers for a constant inflow of profits (Zhao et al., 2022). Research in the area of impulsive buying and its causes, hence, has significant managerial implications (Yang et al., 2022).

The social media platform appeared on the horizon in the mid-1990s. By the start of the new millennium, the social media platform had gained a tremendous inflow of traffic at the global level. Platforms such as Facebook have become the source of contact for people worldwide (Piranda et al., 2022). Online shopping has gained momentum in the last decade, especially in developed countries like the UK, EU block, Japan, and China. As a result, marketing researchers focused on examining online impulsive buying in these countries. The number of internet users in developing countries like Pakistan, Bangladesh, and India has increased dramatically (Hanif et al., 2022). While a few studies have explored online impulsive behavior in developing countries, more research is required to gain a deeper understanding of this phenomenon (Hashmi et al., 2019).

The aim of this research study is to explore the impact of online purchase behavior in a developing country like Pakistan. Do online platforms also push consumers in Pakistan into impulsive buyers? The study attempts to answer these questions that may have significant impact on organizational marketing objectives and strategies.

The extant literature suggests that many studies are available on the association of value shopping and browsing (Indrawati et al., 2022). However, a limited amount of research has looked into the moderating effect of scarcity and brand awareness on browsing and online impulsive buying behavior (Prawira & Sihombing, 2021; Yigit & Tigli, 2018). Similarly, we only found limited studies that have examined the moderating effect of brand awareness on impulsive online buying (Yigit & Tigli, 2018). By addressing these gaps, the study intends to identify the moderating impact of scarcity and brand awareness on online shopping behavior. The study may contribute to the model development through theoretical contribution, as well as managerial applications, in terms of understanding the impact of the moderating factors on online purchase behavior. The results of the gaps identified may further aid the organizations in developing strategies that would serve as key managerial decisions to improve sales.

1.1 Dual Systems Theory: Reflective System and Impulsive System

Two parallel and conflicting information processing systems regulate human social behavior (Evans, 2008; Strack & Deutsch, 2004). The reflective system uses syllogistic norms to make deliberate decisions, whereas the impulsive system creates an involuntary and unconscious drive to engage in the behavior (Strack & Deutsch, 2004). The information processing schema of the Dual Systems Theory states that the reflective system normally processes after the impulsive system has been activated or may even become disengaged (Strack & Deutsch, 2004).

Strack and Deutsch (2004) developed a two-system model that identifies the joint operation of reflective and impulsive systems to explain social behavior. While the impulsive system evokes behaviors through associative connections and

motivational orientations (impulsive buying), the reflective system makes behavioral decisions based on knowledge about facts and values, i.e., intention. The impulsive system processes information faster and with a lower threshold than the reflecting system. With these benefits, the impulsive system takes priority over the reflective system. In other words, although the reflective system may or may not be functioning, the impulsive system is constantly engaged in processing (either independently or concurrently with its own activities). As a result, forming an impulse requires little to no cognitive work; however, acting on an impulse probably requires reflection processes. This model reinforces Weinberg and Gottwald's (1982) conceptualization of impulsive buying, which holds that buying impulsively is characterized by high consumer affective activation, little consumer intellectual control over the purchase decision, and largely automatic behavior triggered by a specific stimulus situation. In line with the two-system paradigm, Dholakia (2000) highlights the rate at which an urge to make impulsive purchases arises, which prohibits the analysis of incoming information. We only include one cognitive factor, namely the perception of low prices, because the current study aims to demonstrate the role of cognitive processing in online impulse buying (Rook & Fisher, 1995; Dholakia, 2000). Perceived low price is the assessment of a product price based on perceptions such as discounts (Zeithaml, 1988). Moreover, out of the two components of value shopping (i.e., hedonic and utilitarian value shopping), the utilitarian aspect involves the cognitive processing of information such as product quality.

2. LITERATURE REVIEW

A review of the current literature was carried out to identify the gaps that led to the development of the conceptual framework. The literature review helped identify and explain the variables and the corresponding theories to describe and validate the conceptual framework. A brief description of each variable is provided in the following section:

2.1 Theoretical Grounding and Conceptual Framework

Given the gaps discussed in the earlier section, we have developed a model with three direct relationships and three moderating variables. We have also discussed the academic support for the proposed hypotheses. This model serves to better explain the nature and impact of the gaps discussed in the preceding section and provides a theoretical basis for further exploration and research.

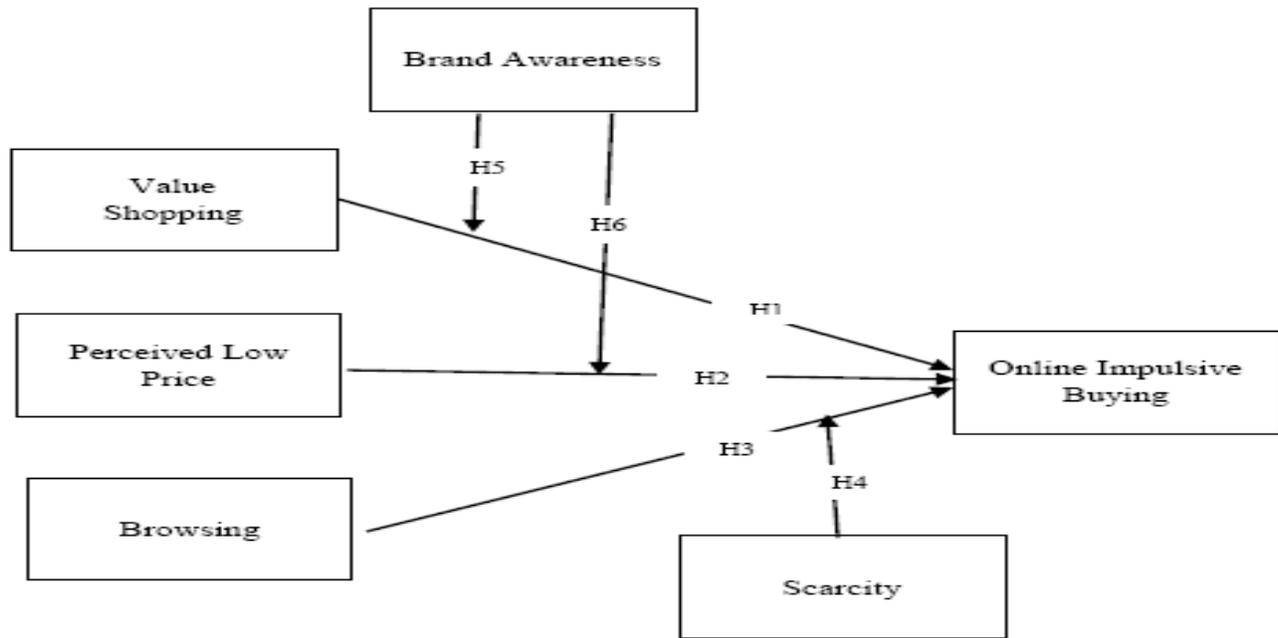


Fig 1. Conceptual Framework

2.2 Value Shopping and Online Impulse Behavior

Value shopping refers to making value-oriented purchasing decisions by comparing tangible, intangible, and the associated benefits and the cost of obtaining those benefits (Prawira & Sihombing, 2021; Moharana & Pradhan, 2020). From a seller's perspective, it is essential to understand what drives a shopper to engage in value shopping and compare the various costs and benefits of the transaction (Maqhfiroh & Prihandono, 2019). Value shopping reflects the involvement of hedonic and utilitarian aspects for the shopping consumers (Karim, 2012). Consumers seeking value shopping experience the amusement and excitement of the value purchase that are part of its hedonic. Consumers may also seek task-related aspects in the value purchase by focusing on its utilitarian values. The hedonic and utilitarian aspects can influence the shoppers individually or collectively for purchase action.

Online shoppers are often enticed to make unplanned or impulsive purchases due to the availability of discounts and special offers (Akram et al., 2018). Studies in consumer behavior indicate that shoppers feel a sense of accomplishment and even feel proud by availing of discounts on value transactions due to the hedonic aspect. Such consumers feel the excitement linked with smart purchases, scoring a better benefit-to-cost ratio than other shoppers (Sun et al., 2023; Hashmi et al., 2019). This perception of being a smart shopper gives them a sense of empowerment, a key encouraging factor leading to online impulsive buying behavior. Furthermore, researchers have drawn a strong correlation between hedonic value and value shopping related to attaining good deals, causing impulsive purchases (Maqhfiroh & Prihandono, 2019; Asnawati & Sri, 2018). Wahab et al. (2018) also concluded that receiving a significant discount stimulates personal fulfillment and satisfaction, causing shoppers' buying behavior impulsively. Therefore, it is clear that

value shopping can be an effective way to increase the satisfaction of the potential consumer even before his/her positive user experience with the product. This predetermined satisfaction with the value transaction and the hedonic and utilitarian aspects strongly encourage impulsive buying.

H1: Value shopping stimulates online impulsive buying.

2.3 Perceived Low Price and Online Impulsive Shopping

Price is an essential aspect that significantly affects consumers' attitudes and buying behavior. Chen and Ku (2021) argue that low prices motivate consumers to impulse buying, which means consumers generally feel good when they perceive that low prices would increase the value orientation of their purchase, causing them to indulge in impulsive online buying (Miranda et al., (2024). Hence, in developing a pricing strategy, marketers must determine consumer price perception to push them toward purchase action (Guo et al., 2017). Consumer price perception depends on many factors, including their previous experience and the competitors' prices. However, it is a subjective perception that varies from consumer to consumer (Pei & Paswan, 2018). Consumers compare the prices of goods and services on online shopping formats with conventional retailers and shopping marts to identify the highest value available through different sources to make the best possible value-oriented purchase.

If consumers believe the prices are the same in both channels, they may shop in either. In case of price variation, they may switch to the channel that offers low prices for the same product. However, this trend is more common in developing countries where consumers are highly price-sensitive (Chen et al., 2017). Pei and Paswan (2018) believe that low price perception by consumers influences their purchase motivation, which is why they ignore rational cues and adopt impulsiveness to buy products. Similarly, Chen & Ku (2021) believe that value orientation caused by discount offers boosts unplanned buying.

Lai (2017) carried out a comparative study between the consumers of the UK and China and found that Chinese consumers are more vulnerable to online impulsiveness than UK consumers when experiencing low prices. Although it is widely documented that product category, price, and other product symbolism affect consumers' unplanned buying, many authors assert that price is a key driver of impulsive buying (Chen, Yeh & Lo, 2017). Studies have also shown that coupons and discounts can further drive impulsive buying behavior (Chen & Ku, 2021).

H2: Perceived low price stimulates online impulsive buying.

2.4 Browsing and Online Shopping Behavior

Browsing is consumers' online search for goods and services or other formal and informal information (Chakraborty & Soodan, 2019). Given the easy access to the internet, people spend a significant amount of time browsing different search engines to satisfy their curiosity. Recent studies have shown that browsing online can significantly affect consumers' emotional states, making them more likely to engage in impulsive online purchases (Rachbini et al., 2024; Wei et al., 2017). Furthermore, the authors suggest that many online shoppers feel that browsing for a particular product and finding good value in a well-reputed brand for shopping enhances their self-respect (Wei et al., 2017). Research also indicates that browsing can lead to impulsive buying behavior, stimulating an individual's self-respect and creating

an urge for unplanned purchases (Kim, 2003; Wahab et al., 2018). Thus, it can be inferred that browsing can be a powerful tool to inspire unplanned purchases.

The two pioneering researchers who initially examined the association between online browsing and impulsive buying were Rook (1987) and Bellenger et al. (1978). Rook and Fisher (1995) believe that when consumers browse visuals on a shopping website and find discounts that enhance the value orientation of the brand, it stimulates a sudden urge to buy impulsively. Similarly, Bellenger et al. (1978) also found that browsing and impulsive buying are highly associated. Based on documentary evidence, Kim et al. (2017) concluded that the number of products purchased and time spent on browsing is positively associated. Additionally, those who enjoy shopping are more likely to take the time to browse, thus increasing their chances of making impulsive purchases (Wahab et al., 2018). These findings suggest that browsing online can lead to more impulsive buying behaviors.

H3: Browsing and Online Shopping Behavior stimulates online impulsive buying.

2.5 Scarcity as Moderator

The scarcity of a product can be perceived in terms of low quantity or non-availability of a recognized brand, which may be seen as the product being high in demand, causing impulsion in buying behavior (Murshid, 2021). Apart from other variables, scarcity is an essential predictor of impulsive buying, and researchers believe that online shopping forums do not use these aspects to attract consumers (Guo et al., 2017). Researchers believe that online forums can use scarcity as a tool by displaying "stock pointers" on the web pages, such as messages of limited stock availability or offers for a short duration. This strategy of utilizing scarcity is believed to influence online buying behavior positively.

Although this pointer strategy is effective for all customers, many researchers believe it is more effective for savvy customers (Wu et al., 2021). Chung et al. (2017) found that limited resources are a powerful stimulus, and they moderate hedonic shoppers' values and impulsive behavior. However, there is limited research on the moderating effect of scarcity on impulsive buying behavior.

H4: Scarcity moderates browsing and online impulsive buying

2.6 Brand Awareness as a Mediator

Aaker (1996) declares brand awareness as a "strength of brand existence in the consumers' mind." Furthermore, he considered brand awareness a significant predictor of brand equity. Similarly, Keller (2003) also advocates that brand awareness is an important component of his proposed customer brand equity model. Research has shown that consumers' brand preference is significantly dependent on brand awareness, and both, apart from other factors, significantly affect buying behavior (Liu et al., 2017; Shariq, 2019).

According to Heading et al. (2009), brand awareness is the initial stage in developing brand loyalty, a key indicator of purchase behavior. Furthermore, Macdonald and Sharp (2000) found that when consumers are familiar with a brand that meets their needs, they usually purchase it without researching other competitive brands due to the embedded trust factor associated with familiarity. Yigit and Tigli (2018) suggest that brand awareness increases the effect of value shopping and online impulsive buying behavior. On the other hand, low brand awareness would reduce the impact of

these two relationships (Dedeoğlu et al., 2020). Therefore, we can conclude that brand awareness plays a critical role in driving consumer purchasing behavior and propose that:

H5A: Brand awareness moderates browsing and online impulsive buying

H5B: Brand awareness moderates perceived low performance and online impulsive buying

2 RESEARCH METHODOLOGY

This study's population is business university students since they belong to a higher-income group and are actively involved in browsing and online shopping. For data collection, we recruited five enumerators who visited five leading business universities in Karachi. The minimum sample size for this study was 387 at a 95% confidence level and a 5% margin of error. Therefore, based on a non-probability purposive sampling technique, the enumerators distributed 500 questionnaires to the students and received 423 responses.

3.1 Respondents' Profile

The respondents' profile is summarized in Table 1 below:

Table 1: Respondents' Profile

Variable		Number	Percentage
Gender	Male	239	56.5
	Female	184	43.5
Age	20 to 30 yrs.	260	61.4
	31 to 40 yrs.	133	31.4
	41 to 50 yrs.	28	6.6
	50 years and above	02	0.47
Household Income	Less than 70k	11	2.6
	71,000 to 90,000	62	14.7
	91,000 to 1,00,000	68	16.1
	1,20,000 to 1,50,000	94	22.2
	1,50,000 and Above	188	44.4
Marital Status	Single	249	58.9
	Married	174	41.13
Program Enrolled In	Bachelors	241	57
	Masters	138	32.6
	Post-Graduation	44	10.4
Employment Status	Unemployed	268	63.4
	Employed	155	36.6

3.2 Scale and Measures

The questionnaire used in the study has two parts. Part one is related to demographics and has six questions, all based on a nominal scale. The second part has six constructs and 28 indicator variables. We have presented the questionnaire summary in Table 2.

Table 2: Summary of Scales

Construct	Source	Items
Online Impulsive Shopping	Verhagen and Van- Dolen, (2011)	5
Scarcity (SCA)	Wu et al. (2012)	5
Browsing	Beatty and Ferrell (1998)	4
Low Price Perception	Byun and Sternquist (2008)	5

Value Shopping	Akram et al. (2018)	5
Brand Awareness	Wang and Yang, (2010).	4

3.3 Statistical Analysis

The study used smart PLS for data analysis. It includes reliability, validity, and testing proposed hypotheses through structural modeling.

4 RESULTS AND ANALYSIS

4.1 Measurement Model

A measurement model was initially generated and presented in Figure 2. The following sections show the other related results.

4.1.1 Reliability and Converged Validity

The study has done reliability and convergent to assess the internal consistency of the latent variables used in the study. The convergent validity results are based on composite reliability values and average variance extracted. The results are summarized in Table 3.

Table 3: Reliability and Convergent Validity

	Cronbach's Alpha	Composite Reliability	AVE
Brand Awareness	0.716	0.837	0.632
Browsing	0.880	0.926	0.807
Online Impulsive Buying	0.844	0.896	0.682
Perceived Low Price	0.753	0.842	0.576
Scarcity	0.866	0.91	0.717
Value Shopping	0.801	0.869	0.625

The results show that Cronbach's Alpha values vary from $\alpha=0.716$ to $\alpha=0.880$. The lowest is for brand awareness (Mean=3.401, SD= 1.389, $\alpha=0.716$), and the highest is for browsing (Mean=3.603, SD= 1.098, $\alpha=0.880$). Given these results, we have inferred that the constructs used in the study have acceptable internal consistency (Viladrich et al., 2017). The results show that all the construct composite reliability is greater than 0.70, and AVE values are greater than 0.50, suggesting that the data fulfills the requirements of convergent validity (Strand et al., 2018). The study used Fornell Larcker's (1981) criteria to examine discriminant validity and summarized the results in Table 4.

Table 4: Discriminant Validity

	BA	Br.	OIM	PLT	SC.	VS
Brand Awareness	0.795					
Browsing	0.532	0.898				
Online Impulsive Buying	0.701	0.561	0.826			
Perceived Low Price	0.537	0.732	0.55	0.759		
Scarcity	0.633	0.681	0.58	0.735	0.846	
Value Shopping	0.67	0.687	0.78	0.727	0.7	0.79

The results show that the highest square root of AVE is 0.898, and the lowest is 0.799. The Pearson correlation values are lesser than the lowest AVE square value of 0.790, “suggesting that the construct used in the study is unique and distinct” (Fornell & Larcker, 1981).

4.2 Confirmatory Factor Analysis

We have assessed the CFA to find the theoretical association between latent variables and their indicators.

Table 5 presents the summarized results.

Table 5: CFA

	Brand Awareness	Browsing	Online Impulsive Buying	Perceived Low Price	Scarcity	Value Shopping
BA.1	0.747					
BA.2	0.803					
BA.3	0.836					
BA.4	0.679					
BR.1		0.897				
BR.2		0.929				
BR.3		0.868				
BR.4		0.679				
OIM.1			0.804			
OIM.2			0.821			
OIM.3			0.835			
OIM.4			0.842			
PLP.1				0.679		
PLP.2				0.823		
PLP.3				0.774		
PLP.4				0.726		
PLP.5				0.604		
SC.1					0.78	
SC.2					0.679	
SC.3					0.884	
SC.4					0.765	
SC.5					0.687	
VS.1						0.808
VS.2						0.824
VS.3						0.765
VS.4						0.763

The results show that all the factor loading is greater than 0.60, suggesting a theoretical association between the construct and indicator variables (Brown, 2015).

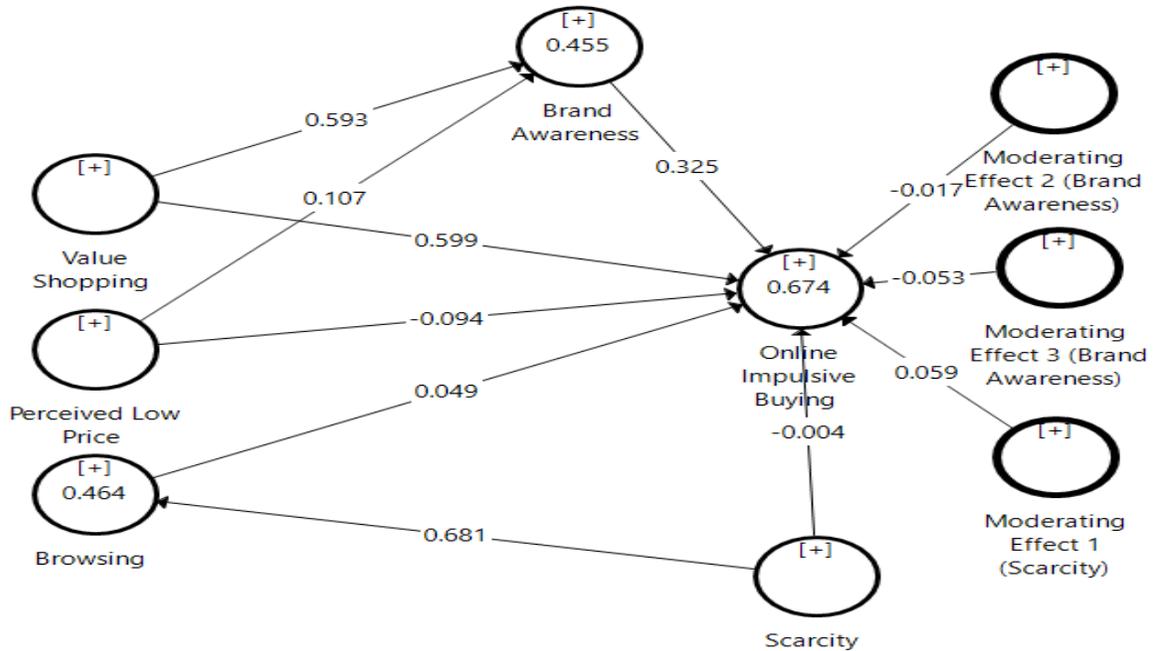


Fig 2. Measurement Model

4.3 Predictive Power of the Model

We have assessed the model's predictive power based on the R2 and Q2 values presented in Table 6, which suggest adequate predictive power (Shmueli et al., 2019).

Table 6: R Square and Q square

	R Square	R Square Adjusted	Q Square
Brand Awareness	0.455	0.454	0.277
Browsing	0.464	0.464	0.371
Online Impulsive Buying	0.674	0.671	0.453

The study proposed six hypotheses, three of which were direct and three of which were moderating. The results are depicted in Table 7, and the structural model in Figure 3.

Table 7: Hypothesis Results

	B	TStat.	P Values	Results
Value Shop. -> Online Imp. Buying (H1)	0.599	17.508	0	Accepted
Per. Low Price -> Online Imp. Buying (H2)	-0.094	3.181	0.002	Accepted
Browsing -> Online Imp Buying (H3)	0.049	1.724	0.085	Rejected
Moderating 1 (Scarcity) -> Online Imp. Buying (H4)	0.059	2.342	0.02	Accepted
Moderating 2 (Br. Awareness) -> Online Imp. Buying (H5)	-0.017	0.698	0.485	Rejected
Moderating 3 (Br. Aware) -> Online Imp. Buying (H6)	-0.053	2.183	0.03	Accepted

Hypothesis 1 states that value shopping significantly affects online impulsive behavior, which our result supports ($\beta=0.599$, $T=17.508$, $P<0.05$). Hypothesis 2, we found a weak association between perceived low price and impulsive online buying ($\beta=-0.094$, $t=3.181$, $p<0.05$). Although the hypothesis is accepted, the B value is leaning slightly towards the negative, illustrating not much significance in the relationship, and that may be due to other factors, such as some of the respondents connecting low prices with the unattractiveness of the product and strongly negative in their impulsion of buying that product. Hypothesis 3 states that browsing positively affects online impulsive buying behavior ($\beta=0.049$, $T=1.724$, $p>0.05$). Based on the findings, the hypothesis has been rejected. It could be due to the massive inflow of data in front of the browser that may cause a lack of attention towards the sales promotion efforts (Pacheco et al., 2022). Also, the constant bombardment of advertisements on the web with similar messages of discount may have reduced the effectiveness of such advertisements in garnering the browser's attention (Gao & Yee, 2022). Hypothesis 4 suggests that scarcity moderates browsing and online impulsive buying behavior ($\beta=0.059$, $t=2.342$, $p<0.05$). The hypothesis is accepted, and the result is consistent with prior studies (Alavijeh & Golestani, 2022). Hypothesis 5 has been rejected, suggesting brand awareness has a moderating impact on value shopping and online impulsive buying behavior ($\beta=-0.0179$, $T=0.689$, $p>0.05$). We found support for Hypothesis 6, which stated that brand awareness moderates perceived low price and impulsive online buying. ($\beta=-0.053$, $T=2.183$, $p<0.05$).

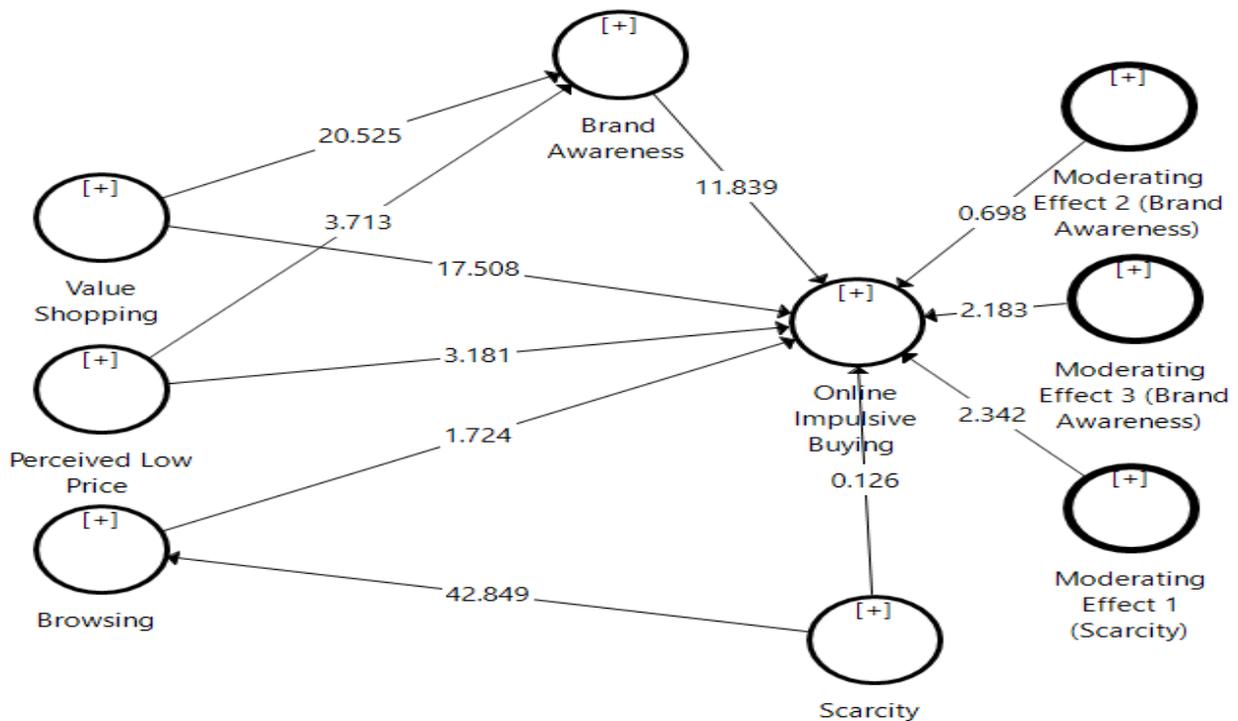


Fig 3. Structural Model

5 DISCUSSION AND CONCLUSION

In this study, six hypotheses were proposed, four of which were accepted and two rejected. The following sections discuss the hypotheses' results, their relevance to past studies, and their implications for future research.

The study found that value shopping stimulates impulsive online behavior. This finding validates earlier studies' findings (Moharana & Pradhan, 2020; Karim, 2020). The two important aspects of value shopping are hedonic and task-related. Many researchers believe that hedonic and task aspects individually and collectively motivate consumers toward impulsive buying (Karim, 2012). Many consumers find their moods lifted when discounts are offered, and the convenience of an instant online purchase stimulates their emotional excitement. Studies suggest that online forums should make their web page interactive and user-friendly to enhance consumers' shopping experience and boost their overall satisfaction (Hashmi et al., 2019). By providing a more enjoyable shopping experience, customers are more likely to return to the website and become loyal. Perceived low price perception affects online impulsive buying as the hypothesis is accepted through results. However, the slight negative beta value also indicates that other factors could be affecting this relationship, such as low perceived pricing that may relate to low-quality perception causing not-so-favorable responses from the people compared to a significantly positive relationship with a positive beta value. These findings somewhat agree with the empirical results of earlier studies, including Meng, Zhang, Li, and So (2019) and Chen and Ku (2021). Past literature suggests consumers are generally more satisfied with low prices, stimulating unplanned and unnecessary purchasing behavior. On the contrary, our results also indicate a price value perception that suggests that consumers draw a perception about the quality of the products based on prices. Consumers presume that low prices align with low quality and high prices with high quality. Researchers also believe that price-quality perception is not universal. It varies from one product category to another. In other words, we can say that product quality moderates the association between price and quality.

The results of this study have identified that online browsing and online impulsive buying behavior have no associations, contrary to earlier studies. Past literature suggests that browsing and online impulsive buying behavior are highly associated (Chakraborty & Soodan, 2019). Internet is now available to the lower-income strata of Pakistan. They access social media with their mobile. The number of social media users in Pakistan has significantly increased in the last few years. Consumers still have more trust in conventional stores. Most online stores take credit cards, which a low percentage of social media users own. Also, in developing countries like Pakistan, consumers have a high reluctance to share personal and bank-related information. The bulk of sales in online shopping forums depends on impulsive buyers. Thus, researchers believe online shopping forums should improve consumers' perceptions of trust (Wei et al., 2017).

Furthermore, the results support the moderating effect of scarcity on browsing and impulsive online buying, which validates the early literature of Murshid (2021) and Guo, Xin, and Wu (2017). Research suggests that scarcity is an essential precursor to impulsive buying. Chung et al. (2017) found that limited resources are a powerful stimulus and moderate impulsive behavior. Although the direct relationship between browsing and impulsive buying is not established, in our scenario, that could be because casual browsing may not strongly persuade the browser to engage

in impulsive buying. However, the positive moderation effect of scarcity indicates a slight increase in the possibility that a few of the browsers are engaged in impulsive buying.

Literature believes online shipping forums should take advantage of the "stock pointer strategy" more often. This strategy calls for displaying messages for "limited period only" or limited stock only. Booking.com has a similar strategy for stimulating impulsive purchases. For example, when consumers search for a hotel on the booking web page, they get the following messages: "One just now, four customers have booked this hotel" and "Limited rooms are available". After making a purchase, consumers may suffer from purchase dissonance, as they need reinforcement on their purchase decision. Book.com provides this very reinforcement by displaying a message after a successful booking, saying that the customer "could not have gotten a better deal than what they got".

We found that brand awareness does not moderate value shopping and online impulsive buying behavior but moderates perceived low price and online impulsive buying. Brand awareness is an important factor that leads to brand loyalty, brand equity, and sustainability (Liu et al., 2017). Researchers believe that consumer familiarity with a brand can enhance the association between perceived value price and impulsive online buying. At the same time, it also increases the impact of browsing and online impulsive buying behavior (Yigit & Tigli, 2018).

6 THEORETICAL IMPLICATIONS

This study determines that the background colours, as one of the important environmental cue and component of ambiance, in 3 dimensional Virtual Reality Retail stores have a significant effect on the emotional state (pleasure and arousal) of avatars, as well as their consequent approach/ avoidance behavioural responses. The effect of colours on shoppers in a retail setting has been confirmed by plethora of previous studies. However, this study provides more evidence that aligns with the findings of Rosenbaum and Massiah's (2011) study, which determined background colours as a significant atmospheric cue. This study examines the use of colours as a mean of determining the degrees of pleasure and arousal in 3D VRR stores, therefore supporting the findings of Reddy et al. (2011). Further, this study also revealed that the effect of colours on arousal, as well as enhanced degrees of arousal, had a favourable correlation with pleasure and approach/ avoidance behaviour. Moreover, the results of this study imply that the second and third indirect effect paths are significant, confirming that colours significantly affect arousal, leading to increased levels of pleasure and approach behaviour in avatars. Significantly, the present study has determined that the adaptation of the M-R (1974) within the 3D VRR stores reveals that the mediating variable of "arousal" does not have a significant direct effect on the approach/ avoidance behaviour of avatars. This study further validates the findings of a previous study conducted by Dad et al. (2018), which examined the impact of music in 3-dimensional retail settings with the help of convenience sampling.

Limitations are fundamental aspect of all research endeavours, and this particular study is not exempted from this reality. The scope of this study was restricted to Fashion & Style apparel stores in order to assess the conceptual model. Therefore, future research studies may investigate various other categories of 3D VRR stores. Moreover, the sample size of 140 participants, collected over a period of two and a half months, may be considered relatively small in representing the entire population of the Virtual World. And therefore, the findings of this study may not be certainly generalised. To address this limitation, it is recommended to increase the sample size and allocate more time for data

collection. Additionally, this study examined 3D VRR stores without any manipulation however, it is assumed that the manipulation of 3D VRR atmospherics has the potential to effect the overall results. This study investigated only 3 x dependent variables, which are arousal, pleasure, and behaviour, however, previous retail studies have investigated several dependent variables such as satisfaction, attitudes, and other related variables. And hence it is recommended that future research may not rely on pleasure, arousal and approach/avoidance behaviour as primary determinants.

7 MANAGERIAL IMPLICATIONS

One of the aims of the study was to identify the impact of the availability of online purchase platforms on consumers buying behavior and the results have the implications in the shape of recommendations for the policymakers and practitioners. The results found that scarcity moderates the association between browsing and impulsive online buying behavior; marketing managers should use online pointers with scarcity appeals, such as a limited offer for a week or only a few items left. Human beings tend to desire things that are difficult to obtain. Scarcity works on the same premise where a customer may feel motivated to buy the product due to the shortage in the marketplace, which he/she may perceive as a product of high demand (Wu et al., 2021). The study did not find that "brand awareness" moderates value shopping and online impulsive buying. The direct effect of value shopping is established through the results obtained in this study. In contrast, the moderating effect of brand awareness does not significantly influence value shopping and online impulsive buying. Since our result indicated that value shopping is already positively affecting impulsive buying, people are aware of the brand's utilitarian and hedonic aspects. Therefore, brand awareness as a separate moderator does not significantly influence online impulsive buying. Finally, the moderating effect of brand awareness on low price perception and online impulsive buying behavior is established through our results. Consumers generally have a low-quality perception of a product that is of low price compared to rival brands, but if the brand awareness is high, consumers will draw quality cues based on the brand image. High brand awareness positively pushes consumers to purchase the product when they perceive the offered price as lower than expected (Dabbous & Barakat, 2020).

Thus, online shopping forums should use various online platforms to increase brand awareness. This study also provides insights for e-commerce website managers and practitioners. Online store managers should be aware of website and marketing stimuli and take action to improve customers' online shopping experience. It is very important to increase IT capabilities in terms of website stimuli. Additionally, managers can emphasize product scarcity using IT-enabled inventory, employ big data approaches for marketing, and use traditional promotion strategies to persuade customers to buy. Similarly, e-commerce sites can use hunger marketing to encourage impulsive purchases, emphasizing scarcity and targeting customers to maximize the marketing impact. In particular, hunger marketing involves offering appealing pricing with limited availability to convey the impression that sales are in short supply. Companies can thus gain from the higher price while simultaneously enhancing the attraction of their brand.

Furthermore, the managers should (1) maintain a smooth purchasing flow to give customers a positive online shopping experience; (2) create a user-friendly interface to engage users and to provide them a pleasant experience while shopping online; and (3) offer specific service and precision marketing to raise customers' levels of arousal or pleasure. For instance, to increase the effectiveness of feedback and suggest items based on customers' consumption patterns and characteristics, online retailers should respond to customer inquiries and requests promptly and accurately.

8 Limitations and Direction for Future Research

This study also has some limitations that can be addressed by the researchers in the future. The study has explored three aspects that may promote online impulsive buying behavior (value shopping, low perceived price, and browsing). To get an in-depth knowledge of impulsive buying mechanisms, future researchers should explore the role of emotional intelligence, homophily, trust, self-concept, self-efficacy, and brand advocacy. The research studied two moderators (brand awareness and scarcity) to develop an understanding of the relationship of antecedents with online impulsive buying behavior. Future studies may explore brand ethicality as a moderator to examine the role of ethics on online impulsive buying behavior.

Moreover, the study focused on students at private business education institutes in Karachi. More studies are needed with the general consumers as the widespread use of smartphones in Pakistan have made the online retail platform available for all parts of the society (Ejaz et. al., 2023) The consequences of online impulsive buying behavior are essential, and we invite other researchers to assess the outcomes of impulsive buying behaviors. Most of the impulsive studies are either on conventional stores or online forums. There is a need for comparative studies on impulsive online buying and conventional store impulsive buying to analyze the effectiveness of both platforms.

REFERENCES

- Abir, T., Husain, T., Waliullah, S. S. A., Yazdani, D. M. N., Salahin, K. F., & Rahman, M. A. (2020). Consumer Buying Behavior towards E-Commerce: A Survey Study of Consumers at a Selected Online Shopping Site in Dhaka, Bangladesh. *Open Journal of Business and Management*, 8(6), 2716-2728.
- Akram, U., Hui, P., Khan, M. K., Yan, C., & Akram, Z. (2018). Factors affecting online impulse buying: evidence from Chinese social commerce environment. *Sustainability*, 10(2), 352.
- Alzoubi, H., Alshurideh, M., Kurdi, B., Alhyasat, K., & Ghazal, T. (2022). The effect of e-payment and online shopping on sales growth: Evidence from banking industry. *International Journal of Data and Network Science*, 6(4), 1369-1380.
- Aaker, D. (1996) Building Strong Brands. Free Press, New York, NY
- Asnawati, A., & Sri, W. (2018). The influence of hedonic shopping motivation to the impulse buying of online-shopping consumer on instagram. *Russian Journal of Agricultural and Socioeconomic Sciences*, 74(2), 99-107. <https://doi.org/10.18551/rjoas.2018-02.11>.
- Beatty, S. E., & Ferrell, M. E. (1998). Impulse buying: Modeling its precursors. *Journal of retailing*, 74(2), 169-191.
- Brock, T. C. (1968). Implications of commodity theory for value change. In *Psychological foundations of attitudes* (pp. 243-275). Academic Press
- Bellenger, D. N., D. H. Robertson and E. C. Hirschman. (1978). Impulse Buying Varies by Product. *Journal of Advertising Research*. 18. 61, 15-18
- Brown, T. A. (2015). *Confirmatory Factor Analysis for Applied Research*. Guilford Publications.
- Byun, S. E., & Sternquist, B. (2008). The antecedents of in-store hoarding: measurement and application in the fast fashion retail environment. *The International Review of Retail, Distribution and Consumer Research*, 18(2), 133-147.

- Chakraborty, S., & Soodan, V. (2019). Examining utilitarian and hedonic motivations in online shopping in India: Moderating effect of product browsing behavior. *International Journal of Recent Technology and Engineering (IJRTE)*, 8(1C2), 117-125.
- Chen, C. D., & Ku, E. C. (2021). Diversified Online Review Websites as Accelerators for Online Impulsive Buying: The Moderating Effect of Price Dispersion. *Journal of Internet Commerce*, 20(1), 113-135.
- Chen, T. Y., Yeh, T. L., & Lo, W. C. (2017). Impacts on online impulse purchase through perceived cognition. *Journal of International Consumer Marketing*, 29(5), 319-330.
- Chung, N., Song, H. G., & Lee, H. (2017). Consumers' impulsive buying behavior of restaurant products in social commerce. *International Journal of Contemporary Hospitality Management*, 29(2), 709-731. <https://doi.org/10.1108/IJCHM10-2015-060>
- Dabbous, A., & Barakat, K. A. (2020). Bridging the online offline gap: Assessing the impact of brands' social network content quality on brand awareness and purchase intention. *Journal of Retailing and Consumer Services*, 53, 101966.
- Dedeoğlu, B. B., van Niekerk, M., Küçükergin, K. G., De Martino, M., & Okumuş, F. (2020). Effect of social media sharing on destination brand awareness and destination quality. *Journal of Vacation Marketing*, 26(1), 33-56.
- Dholakia, U. M. (2000). Temptation and resistance: An integrated model of consumption impulse formation and enactment. *Psychology & Marketing*, 17(11), 955-982.
- Ejaz W, Altay S, Naeem G. Smartphone use and well-being in Pakistan: Comparing the effect of self-reported and actual smartphone use. *Digit Health*. 2023 Jul 12;9:20552076231186075. doi: 10.1177/20552076231186075. PMID: 37456126; PMCID: PMC10345932.
- Evans, J. S. B. (2008). Dual-processing accounts of reasoning, judgment, and social cognition. *Annual Reviews of Psychology*, 59, 255-278.
- Fornell, C. & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39-50.
- Guo, J., Xin, L., & Wu, Y. (2017, July). Arousal or not? The effects of scarcity messages on online impulsive purchase. In *International Conference on HCI in Business, Government, and Organizations* (pp. 29-40). Springer, Cham.
- Hanif, M. S., Wang, M., Mumtaz, M. U., Ahmed, Z., & Zaki, W. (2022). What attracts me or prevents me from mobile shopping? An adapted UTAUT2 model empirical research on behavioral intentions of aspirant young consumers in Pakistan. *Asia Pacific Journal of Marketing and Logistics*, 34(5), 1031-1059.
- Hashmi, H., Attiq, S., & Rasheed, F. (2019). Factors affecting online impulsive buying behavior: A stimulus organism response model approach. *Market Forces*, 14(1), 19-42
- Heding, T. Knudtzen, C., F. Bjerre, M. (2009) *Brand Management: Research, Theory and Practice. The Consumer Based Approach*. Routledge.
- Indrawati, I., Ramantoko, G., Widarmanti, T., Aziz, I. A., & Khan, F. U. (2022). Utilitarian, hedonic, and self-esteem motives in online shopping. *Spanish Journal of Marketing-ESIC*, (ahead-of-print).
- Karim, J. A., Kumar, M., & Rahman, S. A. (2012). Measuring shopping values of Malaysian retail consumers. *Asia Pacific Journal of Marketing and Logistics*, 25(2), 200-224. <https://doi.org/10.1108/13555851311314022>.
- Keller, K., L. (2003). *Strategic Brand Management: Building, Measuring, and Managing Brand Equity. Customer Based Brand Equity*. Pearson International Education

- Kent, R. J., & Allen, C. T. (1994). Competitive interference effects in consumer memory for advertising: the role of brand familiarity. *Journal of marketing*, 58(3), 97-105.
- Kim, J. (2003). College Students' Apparel Impulse Buying Behaviors in Relation to Visual Merchandising. Published Doctoral Dissertation, University of Georgia.
- Kim, M., Kim, J., Choi, J., & Trivedi, M. (2017). Mobile shopping through applications: Understanding application possession and mobile purchase. *Journal of Interactive Marketing*, 39, 55-68.
- Lai, J. (2017). The comparative research on online impulsive buying behaviour between the UK and China. *Journal of Residuals Science and Technology*, 14(S1), S119-S124.
- Liu, C. W., Hsieh, A. Y., Lo, S. K., & Hwang, Y. (2017). What consumers see when time is running out: Consumers' browsing behaviors on online shopping websites when under time pressure. *Computers in Human Behavior*, 70, 391-397.
- Macdonald, E. and B. Sharp. (2000). Brand Awareness Effects on Consumer Decision Making for a Common, Repeat Purchase Product: A Replication. *Journal of Business Research*. 48. 5-15.
- Maqhfiroh, L., & Prihandono, D. (2019). The role of time availability in moderating hedonic shopping motivation toward impulse buying of consumer online at Harbolnas's event. *Management Analysis Journal*, 8(2), 135-145. <https://doi.org/10.15294/maj.v8i2.26310>
- Meng, F., Zhang, P., Li, H., & So, K. K. F. (2019). Modeling precursors of impulsive tourist shopping behavior: Evidence from long-haul Chinese outbound tourists. *International Journal of Tourism Research*, 21(3), 344-358.
- Miranda, S., Borges-Tiago, M. T., Tiago, F., & Tu, X. (2024). To buy or not to buy? The impulse buying dilemma in livestream shopping. *Psychology & Marketing*, 41(5), 989-1005.
- Moharana, T. R., & Pradhan, D. (2020). Shopping value and patronage: When satisfaction and crowding count. *Marketing Intelligence & Planning*, 38(2), 137-150. <https://doi.org/10.1108/MIP-07-2018-0264>
- Mursid, A. (2021). Effects of Sentiment on Impulsive Buying Behavior: Evidence of COVID-19 in Indonesia. *Journal of Economics, Business, & Accountancy Ventura*, 23(3), 452-465.
- Nosakhare, U. H., & Bright, A. F. (2017). Evaluation of techniques for univariate normality test using Monte Carlo simulation. *American Journal of Theoretical and Applied Statistics*, 6(5-1), 51-61.
- Pei, Z., & Paswan, A. (2018). Consumers' legitimate and opportunistic product return behaviors in online shopping. *Journal of Electronic Commerce Research*, 19(4), 301-319.
- Piranda, D. R., Sinaga, D. Z., & Putri, E. E. (2022). Online Marketing Strategy In Facebook Marketplace As A Digital Marketing Tool. *Journal of Humanities, Social Sciences and Business (JHSSB)*, 1(3), 1-8.
- Pravwira, N. A., & Sihombing, S. O. (2021). Antecedents of Online Impulse Buying Behavior: An Empirical Study in Indonesia. *The Journal of Asian Finance, Economics, and Business*, 8(2), 533-543.
- Prawira, N. A., & Sihombing, S. O. (2021). Antecedents of Online Impulse Buying Behavior: An Empirical Study in Indonesia. *The Journal of Asian Finance, Economics, and Business*, 8(2), 533-543.
- Rachbini, W., Soeharso, S. Y., Wulandjani, H., Fathoni, M. A., & Rahmawati, E. (2024). From Boomers to Millennials: Unraveling the Complexities of Online Shopping Behavior in Indonesia. *Innovative Marketing*, 20(3), 144-157.
- Rook, D. W. (1987). The Buying Impulse. *Journal of Consumer Research*. 14. 21, 189-199

- Rook, D. W. and R. J. Fisher. (1995). Normative Influences on Impulsive Buying Behavior. *Journal of Consumer Research*, 22(31), 305-313.
- Shariq, M. (2019). A Study of Brand Equity Formation in the Fast Moving Consumer Goods Category. *Jindal Journal of Business Research*, 8(1), 36-50.
- Shmueli, G., Sarstedt, M., Hair, J. F., Cheah, J. H., Ting, H., Vaithilingam, S., & Ringle, C. M. (2019).. Predictive model assessment in PLS-SEM: Guidelines of using PLS predict, *European Journal of Marketing*, 53(11), 2322-2347.
- Strack, F., & Deutsch, R. (2004). Reflective and impulsive determinants of social behavior. *Personality and Social Psychology Review*, 8(3), 220-247.
- Strand, J. F., Brown, V. A., Merchant, M. B., Brown, H. E., & Smith, J. (2018). Measuring listening effort: Convergent validity, sensitivity, and links with cognitive and personality measures. *Journal of Speech, Language, and Hearing Research*, 61(6), 1463-1486.
- Sun, B., Zhang, Y., & Zheng, L. (2023). Relationship between time pressure and consumers' impulsive buying—Role of perceived value and emotions. *Heliyon*, 9(12).
- Verhagen, T., & Van Dolen, W. (2011). The influence of online store beliefs on consumer online impulse buying: A model and empirical application. *Information & Management*, 48(8), 320-327.
- Viladrich, C., Angulo-Brunet, A., & Doval, E. (2017). A journey around alpha and omega to estimate internal consistency reliability. *Annals of Psychology*, 33(3), 755-782.
- Wadera, D., & Sharma, V. (2018). Impulsive Buying Behavior in Online Fashion Apparel Shopping: An Investigation of the Influence of the Internal and External Factors among Indian Shoppers. *South Asian Journal of Management*, 25(3), 56-82
- Wang, X., & Yang, Z. (2010). The effect of brand credibility on consumers' brand purchase intention in emerging economies: The moderating role of brand awareness and brand image. *Journal of global marketing*, 23(3), 177-188. Oliver and Bearden's (1995)
- Wahab, Z., Shihab, M. S., Hanafi, A., & Mavilinda, H. F. (2018). The influence of online shopping motivation and product browsing toward impulsive buying of fashion products on a social commerce. *Jurnal Manajemen Motivasi*, 14(1), 32-40.
- Wei, J., Seedorf, S., Lowry, P. B., Thum, C., & Schulze, T. (2017). How increased social presence through co-browsing influences user engagement in collaborative online shopping. *Electronic Commerce Research and Applications*, 24, 84-99.
- Weinberg, P., & Gottwald, W. (1982). Impulsive consumer buying as a result of emotions. *Journal of Business Research*, 10(1), 43-57.
- 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), 1-10.
- Yang, L., Xu, M., & Xing, L. (2022). Exploring the core factors of online purchase decisions by building an E-Commerce network evolution model. *Journal of Retailing and Consumer Services*, 64, 102784.
- Yigit, M. K., & Tigli, M. (2018). The Moderator Role of Brand Awareness and Brand Loyalty on Consumers' Online Impulse Buying Behavior. *International Journal of Research in Business and Social Science (2147-4478)*, 7(1), 35-48.

Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: a means-end model and synthesis of evidence. *Journal of Marketing*, 52(3), 2-22.