

Article

The Effect of Time-Limited Promotion on E-Consumers' Public Self-Consciousness and Purchase Behavior

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Abstract: This paper explores the relationship between consumers' public self-consciousness, purchase behavior, post-purchase regret, and time-limited promotions in e-commerce. Time-limited flash sales have become a common promotion strategy in e-commerce, particularly in China, the largest e-commerce market. Firstly, the effect of public self-consciousness on consumers' impulsive purchase tendency and post-purchase regret is examined. Secondly, this paper extends the scope of previous studies and investigates how time pressure affects the relationships between self-consciousness, impulsive buying tendency, and post-purchase regret. Data were gathered via an anonymous online survey of 580 online shoppers and subjected to empirical analysis including validity testing and ANOVA. The results provide both practical and theoretical contributions to existing models and offer empirical evidence showing the positive relationships between public self-consciousness and impulse buying, between public self-consciousness and post-purchase regret, and between impulse buying and post-purchase regret.

Keywords: consumer experience; online consumer behavior; e-retailing; impulse purchase; post-purchase regret; public self-consciousness



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1. Introduction

Over the past 30 years, China's Internet technology has developed rapidly. In June 2021, the number of Chinese Internet users was over one billion, representing an Internet penetration rate of 71.6% [1]. Initially, online shopping in China lagged behind Western markets but in recent years it has been developing very rapidly [2], profoundly affecting bricks and mortar retail businesses [3]. China recently overtook the US as the e-commerce leader [4]. This trend has accelerated since the COVID-19 pandemic, when online shopping increased dramatically [5], and does not seem to be slowing or reverting to previous growth rates.

The number of online shopping users in China has reached 812 million, accounting for 80.3% of the total number of Internet users [1]. China has become the world's largest Internet community, with users easily accessing product information and consumer purchase reviews [6]. Often, e-commerce purchases are not based on actual demand but rather on impulsive consumption. According to L. Wu et al. [7], 82% of online consumers have experienced impulse consumption. The opportunities for sellers regarding impulse purchasing are immense and of great interest to a variety of stakeholders. Chinese e-commerce merchants are increasingly attracting consumers through innovative means that utilize consumer psychology, including the applied use of social media (SM) [8] and SM influencers [9], as well as an emphasis on impulse buying-focused strategies [10]. The importance of consumer psychology in relation to impulse buying, and the formation of marketing strategies that capitalize on it, is of increasing relevance and is the subject of this research.

This study aims to further explore the influence of time pressure on impulse buying by building on and extending the findings of critical study already conducted on the topic of time-limited promotions by Yin et al. [11]. While Yin et al. [11] examined the influences of public self-awareness on consumers' choice inconsistency and post-choice satisfaction, this research extends those findings, specifically by examining the extent and nature of the relationships between post-purchase regret, public self-consciousness, and impulse buying.

It is important to address the potential risk of impulse purchases to ensure sustainable growth in online consumption, as impulse buying has been reported to increase post-purchase regret [12].

To drive sales, merchants on e-commerce platforms are increasingly using innovative "smart" methods based on emerging technologies such as beacon-triggered promotions [13] and time-limited promotions. Time-limited promotions may offer substantial discounts within a limited time to promote consumers' impulse purchasing [14]. Findings in the existing literature are not in complete consensus on the results; limited-time promotions have also been found to reduce sales [15] because consumers may become anxious due to insufficient time available for decision making and consequently avoid purchasing [16]. The pressure caused by time-limited promotions may also affect consumers' purchasing decisions [17] because it is difficult for consumers to strike a balance between making fast and wise decisions and the actual or perceived value of discount pricing that is usually associated with time-limited promotions.

Yin et al. [11] reported that public self-consciousness affects consumer decision making through social e-commerce. Consumers increasingly focus on how others perceive them [18], known as public self-consciousness (PSC). This phenomenon is increasing steadily as the speed of information dissemination continues to accelerate [19]. In this case, consumers need to quickly process more information, much of which is tied to the notoriously complex emotional factors that affect purchase decisions [16]. When influenced by PSC, consumers' consumption behaviors can be affected and consumers are subsequently more prone to regret [20,21]. Although extensive research has been done on PSC, most of the existing research focuses on Western societies [22]. The generalizability of the existing literature to Eastern cultures, and specifically Chinese culture, is questionable and, considering the size of the e-commerce market, well worth deeper exploration [6,23]. It is the aim of this study to narrow the gap and further explore the impact of Chinese consumers' public self-consciousness on impulsive consumption.

This study continues with Section 2, Conceptual Framework and Hypothesis Development, which includes an examination of the time-limited promotion model in detail, as well as examinations of public self-consciousness, post-purchase regret, and impulse buying. Section 3 explains the survey instrument and sampling, Section 4 shares the results of the study, and Section 5 includes a discussion of theoretical and managerial implications. Finally, the limitations of this study and suggestions for further exploration are mentioned in Section 6.

This study explores a gap in the existing literature on how time pressure affects consumers' impulse buying when shopping online and builds on previous findings through an examination of the interrelationships between impulse purchases and post-purchase consciousness or regret.

2. Conceptual Framework and Hypotheses Development

2.1. Public Self-Consciousness

Public self-consciousness (PSC) has been defined as the consciousness of self in society and public situations [24]. Public self-consciousness is a self-directed state from the perspective of others and can be seen as self-consciousness through imagination [25]. In other words, consumers are concerned about specific aspects of public display due to public self-consciousness, including their appearance and behavior [18]. In the online environment, consumers' public self-consciousness also exists and may be an even greater influence than in the pre-online era [26]. People will show their image to others in online social interac-

tions and have been found to care about others' evaluations of themselves [21]. According to White et al. [21], public self-consciousness can add more identity-related expressions. People with high public self-consciousness will pay special attention to their social identity. They tend to want to show their social image and identity to gain social recognition and avoid disapproval [27]. This has been described as "the watching eyes phenomenon"; for example, when wearing unusual clothes in public and being watched by others, they pay attention to the reactions of others [28]. Therefore, feeling more sensitive to social cues is easier when one perceives themselves as being seen or "standing out" [29]. In other words, they are more likely to act in accordance with the ideas or evaluations of others [30].

2.2. Impulse Buying

Impulse buying is an unplanned immediate purchase driven by emotion [31]. Sun et al. [32] defined online shopping impulse buying as "sudden and immediate online purchases without pre-purchase intent." This impulse is short-lived and spontaneous, and can be influenced by anticipated regrets [33]. Consumers' buying behavior does not always follow the principles of economic theory. Customers are more likely to be driven by emotions or feelings [34]. Consumers purchase products for various purposes and do not always evaluate costs and benefits. In many cases, people's purchases are irrational, such as purchases made to relieve an unpleasant mood [35]. Impulse buying usually occurs after exposure to goods, and the purchase decision is made hastily without careful consideration of the reasons for buying the goods [32,36]. Compared to more well-informed consumers, consumers who make purchases impulsively do not thoroughly evaluate the purchase decision [37]. They are more willing to accept short-term spontaneous purchase intentions and pay attention to the short-term happiness and satisfaction that consumption brings [10,36]. Park et al. [38] determined that impulse buying is a widespread and common phenomenon. Consumers' impulse buying does not necessarily happen only once, it may happen many times [39], and because people are not always rational, nearly all consumers will have unplanned consumption at some point in their lives [40].

Consumers are influenced by internal and external factors that drive impulse buying [41]. Marketing activities, or stimuli, are examples of external factors that may increase purchasing behavior, repurchase intention [42], and impulse buying [43,44]. Increasing levels of visual clues, such as promotional incentives, will increase consumers' impulse purchases [39,45]. The internal factors relating to impulse buying directly focus on the individual's internal characteristics [46], including the consumer's personality characteristics or emotional state [44]. Internal factors will stimulate consumers to deal with emotions and cognition, thereby increasing the irresistible impulse to buy. As an internal factor, public self-consciousness plays a vital role in determining consumers' impulse buying behavior. Public self-consciousness is related to many consumer behaviors and decision making processes and will promote consumers to implement behavioral decisions [47]. People with high public self-consciousness are more likely to be more concerned about other people's comments. Burnkrant [48] also found that people with high public self-consciousness are more likely to seek ways to increase their self-image by increasing purchases of goods than people with low public self-consciousness. Thus, based on the findings of these studies, the following hypothesis is put forth for testing:

H1. *Public self-consciousness is positively related to post-purchase regret.*

In the Internet era, perfectionism (the desire to be, or appear to be, perfect [49]) has taken on a new meaning and relevance [50], resulting in public self-consciousness that often leads to negative emotions such as anxiety and helplessness [50,51]. Therefore, many people are more sensitive to negative social evaluations and are more willing to change their behavior to avoid social criticism [52]. Recent studies have shown that the higher the public self-consciousness, the higher the sensitivity to the evaluation of others and the more likely to engage in shopping [46]. Based on these findings, the following hypothesis is proposed for testing:

H2. Public self-consciousness is positively related to impulse buying tendency.

2.3. Post-Purchase Regret

Online shopping gives consumers more purchase choices, but it can also create confusion due to the vast number of comparable products offered to consumers [53]. Although consumers seek to purchase products that they perceive to be good, they may still have doubts about whether their choices are optimal. When consumers think that the products they have purchased will not bring a better experience than the unpurchased alternatives, they feel regret [54]. This is because, post purchase, consumers often compare their purchases with those alternatives that they did not purchase [55]. Many existing studies have conducted in-depth research on consumer post-purchase regret. Tata et al. [56] define post-purchase regret as consumers imagining that the current situation would have become better if different decisions had been made during the purchasing process. Through the lens of hindsight, an evaluation of the decision results in an unpleasant feeling after consumption, often combined with the desire to reverse the actual purchase. However, not all purchases produce negative emotions [57]. Since emotions such as regret will only be experienced after the decision to purchase has been acted on, research usually measures these emotions after the fulfilled purchase decision [58].

Kumar et al. [40] found that post-purchase regret is the difference between the expected performance of a product before purchase and the performance felt or perceived after the actual purchase. The greater the gap, the greater the negative emotions consumers will feel about the product, including dissatisfaction with the purchased product, the frequent return of products, and the generation of regret.

Impulse consumption is an impulse buying process dominated by emotions [32]. Lee and Chen [59] divided emotions into positive and negative influences. Consumers who consume impulsively usually do not receive optimum relative utility from the purchased goods and are more inclined to experience regret after purchasing the product [60]. Due to the lack of trade-offs, consumers frequently have negative emotions after impulsive consumption, such as regret and anxiety [59,61]. Rook [45] proposed that consumers only buy products impulsively because they are attracted to some “grabbing” appearance or visual appeal that the product has. Consumers tend to be emotionally satisfied with the temporary satisfaction brought about by impulse buying [36]; however, Rook and Fisher [10] found that 80% of consumers attribute negative shopping experiences to impulsive consumption. The pain caused by this impulse buying also includes financial overspending, social disapproval, and regret [45]. Research has also shown that consumers hope to reduce their post-purchase regret by reducing impulse consumption [62]. Following the discussion above, H3 is proposed:

H3. The impulse buying tendency is positively related to post-purchase regret.

2.4. Time-Limited Promotion and Time Pressure

E-commerce merchants hope to increase consumers' desire to buy through time-limited promotions [63]. Interestingly, although time pressure is a crucial factor affecting consumer decision making, there are relatively few studies on this variable. The same study reported that presenting a time limit sends a signal to consumers that pushes them to buy products [64]. However, under pressure due to limited time, consumers tend to disrupt their established purchase process. Because consumers need a lot of time to search and compare when making decisions, when decision-makers need to decide within a limited time it will cause pressure and increase the likelihood of poor decision making [16,33,65]. More recent research has supported the earlier findings that decision-making behavior is greatly impacted under time pressure [11]. When consumers need to make purchase decisions quickly within a limited time frame, or when faced with the prospect of a steadily reducing time such as a countdown clock, the result will likely be an incomplete shopping comparison and information search [66,67]. When decisions are made within a limited time, transaction speed must necessarily increase [68]. Under time pressure, the primary

effect plays an increasingly important role [69]. In other words, consumers are more likely to succumb to the primary image of the product, which in turn increases the likelihood of a sub-optimal decision [70] and subsequent post-purchase regret.

Public self-consciousness is a person's internal characteristics that affect individual decision-making behavior. The level of impulse buying will differ depending on individual characteristics and willingness [6,71]. The greater the time pressure, the more consumers are pushed to perceive or desire to be able to make a purchase decision quickly [72]. Based on the findings of prior research, the following hypothesis is put forth for testing:

H4. *Time pressure strengthens the positive relationship between public self-consciousness and impulse buying tendency.*

Consumers are more willing to use the most expeditious and quickest access time as their selection criteria [73]. When consumers perceive time pressure, it will lead to an increase in "cognitive loading" such that they tend to make decisions based on fewer attributes and think about fewer alternative models [74]. Time pressure encourages consumers to use heuristic methods to simplify complex problems [75]. Consumers will treat time as money and think about opportunity cost [74]. Baron and Bronfen [76] showed that customers who experience high time pressure are more likely to have negative emotions than consumers who do not have time pressure to consume. This negative sentiment leads to an increase in consumers' negative evaluations of the product [77]. The scarcity of preferential products will cause consumers to have a sense of urgency, thereby prompting consumers to make impulsive consumption decisions [78]. Based on these findings, the following hypothesis is put forth:

H5. *Time pressure strengthens the positive relationship between public self-consciousness and post-purchase regret.*

The visual passing of time, as in the counting down of a timer on an image of a product online, results in pressure signals being sent to consumers which promote consumers' willingness to spend [33]. Consumers often make poor decisions under time pressure and will have negative emotions about the product after purchase [65,74]. This is because consumers will show a willingness to consume impulsively under time pressure but will also tend to reduce the amount of information they process [79]. These customers do not have enough time to conduct a comprehensive evaluation of the product when they make a decision under time pressure [80,81]. In this case, consumers experience psychological pressure and increase the risk of feeling remorse or disappointment with the product after purchase [17,82]. Hence, the following hypothesis is put forth for testing:

H6. *Time pressure strengthens the positive relationship between post-purchase regret and impulse buying tendency.*

The Hypotheses, 1–6 as developed above can be depicted in the conceptual model, Figure 1.

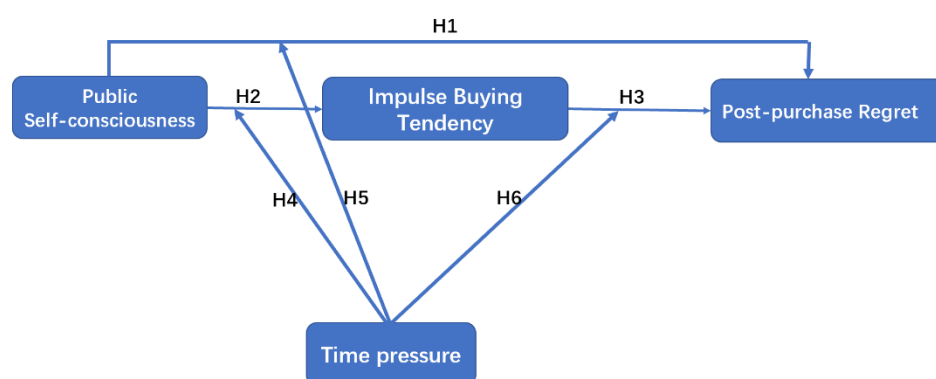


Figure 1. Conceptual model.

3. Methodology

3.1. Sampling

This study uses a cross-sectional design to select data at a single point in time. The sample population is those who engage in online shopping. Due to the high level of smartphone adoption in China, it is assumed that the participants used smartphones both for online shopping and for completing the survey. The variables examined by the scale include public self-consciousness and impulse buying, post-purchase regret, and the time pressure perceived by Chinese online shoppers. The data are derived from 580 anonymous responses to an online survey. The participants self-selected and self-identified as active online shoppers. For this survey, the initial questionnaire was designed in English. In order to facilitate Chinese online shopping customers completing the survey, the questionnaire was presented in bilingual form. These data were collected through the popular online social media platform WeChat (Appendix A).

3.2. Stimulus Materials

This study used stimulus materials and modified and adapted previous research survey questions [25,83,84] to better measure participants' public self-consciousness. The stimulus materials are designed to make participants imagine that the products they purchased need to be made publicly visible. For example, "The clothes you are going to buy are to be worn at a party, and many people will notice your clothes." The manipulation of time pressure follows the situational stimulation designed by Kruglanski and Webster [73]. Under time pressure, the participants were told that there were only 5 min left to make a purchase decision. At the same time, using pictures, the timer on the website represented the passing of time. Statements such as "clothes are too expensive, so you want to buy during discount price promotions" were used to emphasize the importance of a deadline for a purchase decision [11].

3.3. Instrumentation

The instrument was adapted from existing measurement tools and scales. Because the survey scales had been previously used and validated, and grouped into clusters by construct, validity was assumed. Four variables are included in the conceptual model. All measures were adapted from prior research. Four items that measure public self-consciousness were adapted from Greenberg [85] and Fenigstein [86]. The three items that measure time pressure were adapted from Peng et al. [16] and Yin et al. [11]. Items that measured post-purchase regret were adapted from Lee and Cotte [87], Lui and McClure [88], and Singh [89]. Impulse buying was measured with three items adapted from Verhagen and Dolan [90]. All responses were measured using a seven-item Likert scale where 1 represents strongly disagree and seven represents strongly agree. A seven-point scale is a recognized tool that is stated to provide reliability [91].

4. Analysis and Results

Data collected via the online survey were subjected to a series of analyses which began with Cronbach's Alpha being used to confirm the validity of the instrument and the consistency of responses. Subsequently, each hypothesis was tested separately through a series of ANOVA analyses. These tools were used as they are widely accepted and well known for hypothesis testing in research as a way to test hypotheses based on the relationships between independent and dependent variables and possible moderating effects on those relationships. The software package SPSS was used for the analyses.

4.1. Sample Characteristics

A total of 592 participants self-selected to participate in the online survey of this research. After eliminating invalid data due to incomplete surveys, 580 valid responses remained. The descriptive statistical results of the sample, which included 248 males (42.8%) and 332 females (57.2%), are shown in Table 1.

Table 1. Sample Demographics.

Variables	Subcategory	Frequency	Percent
Gender	Male	248	42.8
	Female	332	57.2
Age	20 or below	161	27.8
	21–30	249	42.9
	31–40	67	11.6
	41–50	85	14.7
	51 or above	18	3.1
Education	High school and lower	51	8.8
	Junior college and technical secondary school	109	18.8
	Undergraduate	395	68.1
	Postgraduate and higher	25	4.3
Occupation	Student	358	61.7
	Civil service	30	5.2
	Education	33	5.7
	Private company	41	7.1
	Self-employed	26	4.5
	Other	92	15.9
Expense	<CNY 2000	386	66.6
	CNY 2001–4000	126	21.7
	CNY 4001–6000	43	7.4
	>CNY 6001	25	4.3
Experience	Never	42	7.2
	Seldom	229	39.5
	Sometime	218	37.6
	Frequently	91	15.7

Among all participants, 161 (27.8%) were 20 or below, 249 (42.9%) were 21–30 years old, 67 (11.6%) were 31–40 years old, 85 (14.7%) were 41–50 years old, and 18 people were 51 or above (3.1%). The survey shows that the majority of respondents were undergraduates (68.1%), followed by those with junior college and technical secondary school education (18.8%); only 8.8% had an education level of high school or lower, and 4.3% were postgraduates or higher. Similarly, 61.7% of the survey sample were students, nearly 5% of respondents were engaged in civil service and educational work, 7.1% worked in private companies, and 4.5% were self-employed. Regarding average monthly spending on online shopping, 66.6% of the respondents spent less than CNY 2000 on online shopping, 21.7% of the respondents spent an average of CNY 4001–6000 per month, 7.4% of the respondents spent CNY 4001–6000, and only 4.3% of respondents spent more than CNY 6001 per month on average.

When asked about their experience with time-limited shopping, 229 people (39.5%) said that they seldom had experienced time-limited promotion, 218 participants (37.6%) had sometimes participated in time-limited promotions, 91 participants (15.7%) often had limited-time consumption experience, and 7.2% of the participants had never experienced time-limited shopping.

4.2. Reliability and Validity Assessment

To examine the measurement model's construct reliability and convergent validity, standard factor loadings, composite reliability, and average variance extracted (AVE) values were tested before examining the hypothesized relationships. The results for reliability and convergent validity are shown in Table 2. The survey used was a composite of previously used and validated questions. The questions were grouped based on common constructs and validity was assumed based on validation from prior studies. Reliability was confirmed by Cronbach's Alpha analysis. According to Hair et al. [92], factor loadings of all observed variables were well above the minimum cut-off limit of 0.7. Convergent validity is considered to be satisfactory when the average variance extracted (AVE) from each latent construct exceeds the 0.70 threshold.

Table 2. Validity.

Factor	Statements	Factor Loadings	Reliability	Variance Explained
Post-purchase regret			0.876	22.197%
	If I were to go back in time, I would choose something different.	0.778		
	Sometimes I regret the product choice that I made.	0.776		
	Sometimes I wish I hadn't bought a product because it is useless to me.	0.771		
	Sometimes I regret a purchase because I did not need the product.	0.765		
	Sometimes I wish I had chosen something other than what I purchased.	0.714		
Public self-consciousness			0.817	17.649%
	I usually try to present a good impression to others.	0.762		
	I always worry about the way I look.	0.760		
	I usually care about how others evaluate me.	0.759		
	I always look in the mirror to check my appearance before leaving home.	0.733		
Impulse buying tendency			0.804	15.561%
	Sometimes I could not resist making purchases during sales.	0.853		
	Sometimes I make spontaneous purchases.	0.825		
	Sometimes I make unplanned purchases.	0.816		
Time pressure			0.841	14.124%
	Under the time-limited promotion, sometimes I wish I had more time to make my purchases.	0.819		
	Under the time-limited promotion, sometimes I feel that the time is not enough.	0.776		
	Under the time-limited promotion, sometimes I feel that it is stressful to choose.	0.709		
			Overall reliability = 0.899	Overall variance = 69.531%

All questions measuring post-purchase regret factors were loaded separately. The total variance explained by this variable is 22.197%, and the reliability of this factor is found to be adequate as the reliability coefficient is 0.876.

All questions measuring the public self-consciousness factor were loaded separately. The total variance explained by this variable is 17.649%. The reliability of this factor is found to be adequate as the reliability coefficient is 0.817.

All questions measuring impulse buying tendency factors were loaded separately. The total variance explained by this variable is 15.561%. The reliability of this factor is found to be adequate as the reliability coefficient is 0.804.

All questions measuring the time pressure factor were loaded separately. The total variance explained by this variable is 14.124%. The reliability of this factor is found to be adequate as the reliability coefficient is 0.841.

The overall reliability of data is adequate at 0.899. The total variance explained by the factor solution is 69.531%, which is reasonable.

4.2.1. Public Self-Consciousness on Impulse Buying Tendency

Table 3 shows that public self-consciousness is positively related to post-purchase regret. The *p*-value is less than 0.05. The standardized coefficient beta value is 0.496, which shows that an increase of 1 unit in IV will lead to an increase of 0.496 units in DV. Therefore, H1 is accepted.

Table 3. Public Self-Consciousness and Post-Purchase Regret.

Panel A: Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	0.496 ^a	0.246	0.244	0.98791		
^a Predictors: (Constant), PublicSelf						
Panel B: ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	183.574	1	183.574	188.093	0.000 ^b
	Residual	564.112	578	0.976		
	Total	747.685	579			
^a Dependent Variable: Regret						
^b Predictors: (Constant), PublicSelf						
Panel C: Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.896	0.167		5.351	0
	PublicSelf	0.574	0.042	0.496	13.715	0
^a Dependent Variable: Regret						

4.2.2. Public Self-Consciousness on Impulse Buying Tendency

Table 4 shows that public self-consciousness has a significant positive relationship with impulse buying tendency. The *p*-value is less than 0.05 and the R square value is 0.313, which implies that 31.3% of the variation in DV is explained by public self-consciousness. The standardized coefficient beta value is 0.560, which shows that an increase of 1 unit in IV will lead to an increase of 0.560 units in DV. Therefore, H2 is accepted.

Table 4. Public Self-Consciousness and Impulse Buying Tendency.

Panel A: Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
2	0.560 ^a	0.313	0.312	1.05106		
^a Predictors: (Constant), PublicSelf						
Panel B: ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
2	Regression	291.281	1	291.281	263.665	0.000 ^b
	Residual	638.538	578	1.105		
	Total	929.818	579			
^a Dependent Variable: ImpulseBuy						
^b Predictors: (Constant), PublicSelf						
Panel C: Coefficients ^a						
Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
2	(Constant)	0.252	0.178		1.414	0.158
	PublicSelf	0.723	0.045	0.56	16.238	0.000 ^b
^a Dependent Variable: Regret						
^b Predictors: (Constant), PublicSelf						

4.2.3. Impulse Buying Tendency on Post-Purchase Regret

The model summary presented in Table 5 indicates that the R square value is 0.246, which implies that a 24.6% variation in DV is explained by public self-consciousness. This means that impulse buying tendency has a significant positive relationship with post-purchase regret. The *p*-value is less than 0.05. The model shows that the R square value is 0.291, which implies that 29.1% of the variation in DV is explained by public self-consciousness. The standardized coefficient beta value is 0.540, which shows that an increase of 1 unit in IV will lead to an increase of 0.540 units in DV. This indicates that the relationship is positive. Therefore, H3 is accepted.

Table 5. Impulse Buying Tendency on Post-purchase Regret.

Panel A: Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
3	0.540 ^a	0.291	0.29	0.95735		
^a Predictors: (Constant), ImpulseBuy						
Panel B: ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
3	Regression	217.939	1	217.939	237.79	0.000 ^b
	Residual	529.747	578	0.917		
	Total	747.685	579			
^a Dependent Variable: Regret						
^b Predictors: (Constant), ImpulseBuy						

Table 5. *Cont.*

Panel C: Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
3	(Constant)	1.643	0.104		15.817
	PublicSelf	0.484	0.031	0.540	15.420

^a Dependent Variable: Regret

4.2.4. Time Pressure on Public Self-Consciousness and Impulse Buying

As depicted in Table 6, a hierarchical moderation analysis was run to test the moderating effect of social influence on the relationship between perceived privacy and security and financial value. There was significant evidence of a moderation effect found. The value of R² increased from 0.344 in the second regression model to 0.353 in the third regression model. This shows that, with the addition of the interaction term, the variance explained also increased. The hypothesis was supported as the beta coefficient value for the interaction effect (0.468) had a *p*-value below 0.05. As IV had a beta coefficient value of 0.560 in model I, there was therefore an increase in the strength of the positive relationship between IV and DV due to the change in the beta coefficient value from 0.560 to 0.468; thus, a significant moderation effect was found for time pressure regarding the relationship between public self-consciousness and impulse buying tendency. Therefore, H4 is accepted.

Table 6. Time Pressure on Public Self-Consciousness and Impulse Buying.

	Model I	Model II	Model III
R ²	0.313	0.344	0.353
Adj R ²	0.312	0.342	0.349
F Statistic	263.665 (<i>p</i> < 0.05)	151.502 (<i>p</i> < 0.05)	104.653 (<i>p</i> < 0.05)
Independent Variable			
PublicSelf	0.560 (<i>p</i> < 0.05)		
Moderating Variable			
PublicSelf		0.499 (<i>p</i> < 0.05)	
TimePressure		0.186 (<i>p</i> < 0.05)	
Interaction Effect			
Interaction@Time			
Pressure@PublicSelf			0.468 (<i>p</i> < 0.05)

Dependent Variable: ImpulseBuy.

4.2.5. Time Pressure, Public Self-Consciousness, and Post-Purchase Regret

As depicted in Table 7, a hierarchical moderation analysis was run to test the moderating effect of social influence on the relationship between perceived privacy and security and financial value. Significant evidence of a moderation effect was found. The value of R² increased from 0.351 in the second regression model to 0.361 in the third regression model. This shows that, with the addition of the interaction term, the variance explained also increased. The hypothesis was supported as the beta coefficient value for the interaction effect (0.512) had a *p*-value below 0.05. As IV had a beta coefficient value of 0.496 in model I, there was therefore an increase in the strength of the positive relationship between IV and DV due to the change in the beta coefficient value from 0.496 to 0.512; thus, a significant moderation effect was found for time pressure on the relationship between public self-consciousness and post-purchase regret. Therefore, H5 is accepted.

Table 7. Time Pressure on Public Self-Consciousness and Post-Purchase Regret.

	Post-Purchase Regret	Post-Purchase Regret	Post-Purchase Regret
R2	0.246	0.351	0.361
Adj R2	0.244	0.349	0.358
F Statistic	188.093 ($p < 0.05$)	156.034 ($p < 0.05$)	108.538 ($p < 0.05$)
Independent Variable			
Public Self-Consciousness	0.496 ($p < 0.05$)		
Moderating Variable			
Public Self-Consciousness		0.384 ($p < 0.05$)	
Time Pressure		0.343 ($p < 0.05$)	
Interaction Effect			
Interaction TimePressure/PublicSelf			0.512 ($p < 0.05$)

Dependent Variable: Regret.

4.2.6. Time Pressure on Impulse Buying and Post-Purchase Regret

As depicted in Table 8, a hierarchical moderation analysis was run to test the moderating effect of social influence on the relationship between perceived privacy and security and financial value. There was evidence of a significant moderation effect found. The value of R2 increased from 0.381 in the second regression model to 0.392 in the third regression model. This shows that, with the addition of the interaction term, the variance explained also increased. The hypothesis was supported as the beta coefficient value for the interaction effect (0.419) had a p -value below 0.05. As IV had a beta coefficient value of 0.540 in model I, there was therefore an increase in the strength of the positive relationship between IV and DV due to the change in the beta coefficient value from 0.540 to 0.419; thus, a significant moderation effect was found for time pressure on the relationship between public self-consciousness and post-purchase regret. Therefore, H6 is accepted.

Table 8. Time Pressure on Impulse Buying and Post-Purchase Regret.

	Model I	Model II	Model III
R2	0.291	0.381	0.392
Adj R2	0.290	0.378	0.389
F Statistic	237.790 ($p < 0.05$)	177.300 ($p < 0.05$)	123.762 ($p < 0.05$)
Independent Variable			
ImpulseBuy	0.540 ($p < 0.05$)		
Moderating Variable			
ImpulseBuy		0.429 ($p < 0.05$)	
TimePressure		0.319 ($p < 0.05$)	
Interaction Effect			
Interaction@TimePressure@ ImpulseBuy			0.419 ($p < 0.05$)

Dependent Variable: Regret.

5. Discussion

5.1. General Discussion

The findings of this study provide theoretical contributions to the literature on Chinese online shopping consumers' rational consumption. An important finding of this study is that public self-consciousness and impulse buying are positively correlated. This result is consistent with and extends the findings of Xu [93], who reported a relationship between public self-consciousness and increased purchasing. One possible reason for this result is that people with high public self-consciousness are more likely to be concerned

about the evaluation of others, and they are more likely to experience that concern due to the negative emotions brought about by self-differentiation, which makes them more willing to use consumption to appease the desire to be praised by others and avoid possible negative comments from others [48]. Consumers with high public self-consciousness are more likely to use clothing to improve their public image and will thus use consumption as a tool to improve their public self-image. They hope to shape their social image through continuous consumption. However, due to a high degree of public self-consciousness leading to a high degree of material value commitment, when these consumers use frequent and repeated consumption as the primary way of enhancing their self-image it will lead to impulse buying [93]. Therefore, consumers with high public self-consciousness are more likely to purchase impulsively; these consumers believe that the purchase will improve their self-image due to the social image often brought about by purchasing a product, which therefore leads to impulse consumption.

Secondly, a new theoretical direction found in this study is that public self-consciousness is positively related to impulse buying tendency and post-purchase regret. The findings of this study indicate that public self-consciousness and post-purchase regret are positively correlated, which expands the post-purchase evaluation model. Some studies have investigated the frequency of post-purchase regret [94,95], but there appears to be an area of under-exploration in the systematic investigation of the relationship between public self-consciousness and post-purchase regret.

This study also provides a practical contribution by including public self-consciousness as a factor in the decision-making process. The positive relationship between public self-consciousness and post-purchase regret is strong among Chinese consumers [32]. The concept of “face” is highly formalized in Chinese culture. Similar to social self-consciousness, it represents a person’s social status and image [32]. One possible reason is that, due to the influence of self-esteem and social image, consumers just buy things without sufficient thinking for a short-term improvement to their image or because they blindly follow other people’s purchases. After seeing the product, since other friends have made a purchase for the sake of “face”, they may buy it directly regardless of whether they need it or not. Therefore, they are more likely to regret the purchase because of the unsatisfactory nature of the goods or due to a lack of usefulness (the product does not meet their expectations regarding the enhancement of their social image).

Additionally, a new theoretical direction was found in this study, namely that impulse buying has a significant and powerful direct effect on post-purchase regret. The same findings have been found in prior research [96,97]. One reason for this result may be that consumers are more likely to produce irrational behaviors when they consume impulsively. Consumers’ dissatisfaction post purchase results from consumers’ wisdom in making purchasing decisions being affected by marketing strategies. Dissatisfaction will further lead to post-purchase regret [98–100]. Consumers’ impulse buying behavior (buying immediately without considering the consequences in advance) will make them doubt their actual demand for the product after the purchase, which leads to disharmony regarding product perception. When consumers discover after impulse buying that the product cannot meet their needs or does not meet their pre-purchase expectations, they will experience regret and even feel that the feelings have been created by the merchant. This emotion produces a negative impact on consumers, perceived product disharmony.

Finally, considering the popularity of time-limited promotions, the model further proposes that time pressure is a moderating variable. The results show that time pressure strengthens the positive relationship between public self-consciousness and impulse buying tendency, as shown in Figure 2. Under time pressure, consumers with high public self-consciousness are more likely to show impulse consumption behaviors. Because of time constraints, consumers tend to use simple methods to process information and make purchasing decisions quickly [11]. The short time makes consumers feel eager to consume, and they are more susceptible to the timer on the page. An urgent desire to buy is more likely to increase impulsive consumption. In addition, this study confirmed that time pressure

strengthens the positive relationship between public self-consciousness and post-purchase regret, as shown in Figure 3, which as a result increases the negative emotions felt by consumers, such as regret felt by consumers after a purchase [101]. At the same time, the results show that time pressure significantly strengthens the positive relationship between impulse buying tendency and post-purchase regret, as shown in Figure 4. The reason is that time pressure reduces the amount of possible information processing and increases the amount of perceived risk [64]. Therefore, consumers who are prone to impulsive consumption under the stimulation of time pressure are more likely to impulse buy because of a lack of time to make the purchase, even if the goods purchased are not in actual demand. Therefore, consumers will regret the purchase.

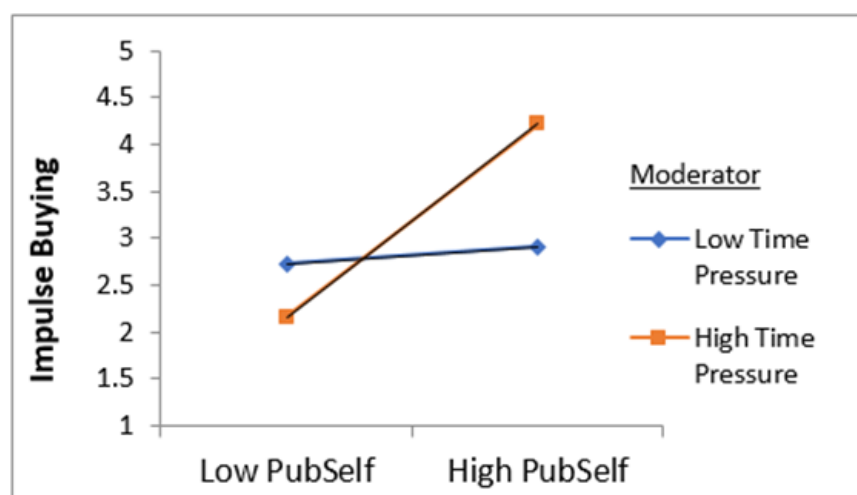


Figure 2. Interaction of time pressure and public self-consciousness on impulse buying.

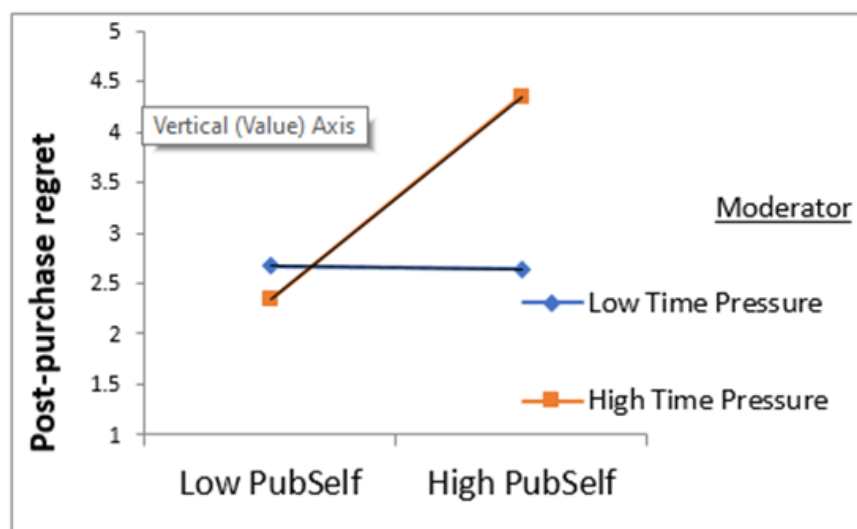


Figure 3. Interaction of time pressure and public self-consciousness on post-purchase regret.

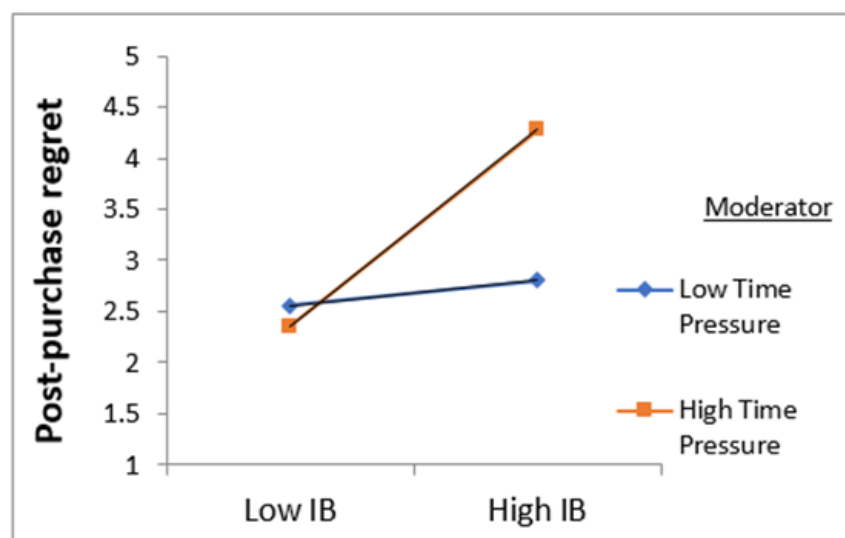


Figure 4. Interaction of time pressure and impulse buying (IB) on post-purchase regret.

5.2. Theoretical and Managerial Implications

The results of this study indicate that public self-consciousness and post-purchase regret are positively correlated, which expands the post-purchase evaluation model. Some studies have investigated the tendency to experience regret [94,95], but no studies have systematically discussed the relationship between public self-consciousness and post-purchase regret. This research provides a useful framework because it will serve as a factor in the decision-making process. Impulse buying is an uncontrollable but frequent consumption behavior. This behavior is more likely to occur under the influence of a consumption environment. As an important source of retailer profits, the importance of studying impulse buying is unquestionable [10]. New sales strategies are continuously emerging in the online sales environment, one of which is time-limited promotion. Possibly due to the relatively recent increase in the relevance of the topic, this subject appears to be under-explored.

This study extends existing research on marketing and psychology and has important implications for consumer behavior and the strategies of e-commerce merchants. First, e-commerce merchants can use consumers with high public self-consciousness to promote purchase behaviors. According to the results of this study, public self-consciousness and impulse buying have a positive relationship. Online sellers can focus on creating a socially evaluated shopping environment, as well as on improving evaluation and product description pages to arouse consumers' public self-consciousness to increase the possibility of buying. Increased consumer perception of interactions and active consumption intentions can be realized by increasing a product's social presence [102]. This can demonstrate the product's potential to shape a consumer's image, and can be enhanced by inserting social text, videos, and pictures [103–105]. Marketers can induce cognition by using social scenes or other people's comments. Value expression and utilitarian needs mean that self-expression is more likely to attract consumers who are actively eager to show their public self-image [106]. For example, to increase consumer purchases, salespersons can use "the top three most popular products" and "you look your best in it" as social cues to increase consumers' willingness to buy.

Secondly, time pressure can affect consumers' public self-consciousness and post-purchase regret. Online salespeople can create time pressure to push consumers who are not susceptible to public self-consciousness to make purchases by constraining consumers' decision time in order to enhance their immediate purchase and impulse consumption. However, it is worth noting that time pressure will also influence the public self-consciousness of consumers who regret purchasing. Merchant strategies aim to encourage consumers to make immediate purchases and consume impulsively and include

the implementation of time-limited promotions; however, this inadvertently increases negative emotions such as regret after purchase. The feeling of regretting buying a product is closely related to anxiety, which leads consumers to distrust the business [107]. Therefore, e-commerce merchants may actually benefit from reducing consumer regrets. Online shopping merchants must take proactive measures to cope with increased post-purchase regret, such as the implementation of an easy-to-use return policy. At the same time, online sellers can also release more product information, such as product functions and comparative advantages, to reduce time pressure for consumers when collecting information and thus alleviate regrets after impulsive consumption. Therefore, online sellers should consider using these measures to promote consumer purchases without increasing consumers' post-purchase regret.

6. Limitations and Future Research

Certain limitations affect the results obtained by this study. First of all, the data are based on scenarios where participants imagine other people to be present; therefore, the measurement standard is what consumers might do, and there is no certainty that they will have the same thoughts or same behaviors in real situations. Consequently, future research should address this issue and increase the reliability and consistency of measurement results with data gathered in actual situations. Secondly, in the context of online shopping, many factors affect consumers' buying behaviors and attitudes after purchase. In addition to time pressure caused by limited-time promotions, there are often other promotions, such as group discounts, cross-branding, repeat customer discounts, product giveaways, and free/discount samples, any of which may influence consumers' impulse purchases and regrets after purchase. While the analytical methods used in this study result in well-supported findings, future related research could provide a more robust analysis through use of the PROCESS Macro as either a secondary supplemental tool or as a replacement for the ANOVA model applied in this study. In addition, future research could further investigate whether different product types affect time pressure in relation to consumers' online purchase intentions. Finally, the research sample mostly comprised individuals 21–30 (42.9%) years of age who were university undergraduates (68.1%), and all of the participants were Chinese. These demographic and cultural characteristics may limit the generalizability of the results [108].

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Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

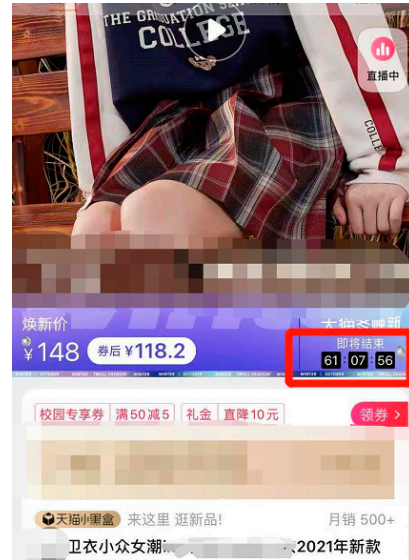
It usually takes approximately 3 min to complete the survey. Thanks for your participation!

A flash sale is a discount or promotion offered by e-commerce stores for a short time only. For example, Taobao's limited-time price promotion on November 11th. Using this promotional strategy, retailers offer big discounts for a limited time to encourage con-

sumers to buy their products. Time constraints create a sense of urgency and result in consumers making purchases that they regret later.

The item for sale is a coat.

If the purchase is made within the time countdown, there is discount of CNY 50.



Demographics:

1. What is your gender? [Single choice question]*

- ☐ Male
- ☐ Female
- ☐ Other

2. Age [Single choice question]*

- ☐ 20 or below
- ☐ 21–30 years
- ☐ 31–40 years
- ☐ 41–50 years
- ☐ 51 or above

3. Education Level [Single choice question]*

- ☐ High school and lower
- ☐ Junior college and technical secondary school
- ☐ Undergraduate
- ☐ Postgraduate and higher

4. What is your occupation? [Single choice question]*

- ☐ Student
- ☐ Civil service
- ☐ Education
- ☐ Private company
- ☐ Self-employed
- ☐ Other

5. What is your average monthly total expense for online shopping? [Single choice question]*

- ☐ <CNY 2000
- ☐ CNY 2001–4000
- ☐ CNY 4001–6000
- ☐ >CNY 6001

6. Experience participating in time-limited promotions [Single choice question]*

- ☐ Never
☐ Seldom
☐ Sometime
☐ Frequently

For each of the following statements, please check the one response that best describes how strongly you agree or disagree.

Note: Most of the questions in this survey are seven-point scale questions. The higher the score, the more important or the stronger your agreement is.

Public self-consciousness

Imagine that the clothes you are going to buy are going to be worn at a party, and many people will notice your clothes.

7. I usually try to present a good impression to others. [Single choice question]*

1	2	3	4	5	6	7
Strongly	Somewhat	Mildly	Neutral	Mildly	Somewhat	Strongly
Disagree	Disagree	Disagree		Agree	Agree	Agree

8. I always worry about the way I look. [Single choice question]*

1	2	3	4	5	6	7
Strongly	Somewhat	Mildly	Neutral	Mildly	Somewhat	Strongly
Disagree	Disagree	Disagree		Agree	Agree	Agree

9. I always look in the mirror to check my appearance before leaving home. [Single choice question]*

1	2	3	4	5	6	7
Strongly	Somewhat	Mildly	Neutral	Mildly	Somewhat	Strongly
Disagree	Disagree	Disagree		Agree	Agree	Agree

10. I usually care about how others evaluate me. [Single choice question]*

1	2	3	4	5	6	7
Strongly	Somewhat	Mildly	Neutral	Mildly	Somewhat	Strongly
Disagree	Disagree	Disagree		Agree	Agree	Agree

Time pressure

Imagine that clothes are too expensive, so you want to buy during discount price promotions.

11. Under the time-limited promotion, sometimes I feel that the time is not enough. [Single choice question]*

1	2	3	4	5	6	7
Strongly	Somewhat	Mildly	Neutral	Mildly	Somewhat	Strongly
Disagree	Disagree	Disagree		Agree	Agree	Agree

12. Under the time-limited promotion, sometimes I feel that it is stressful to choose. [Single choice question]*

1	2	3	4	5	6	7
Strongly	Somewhat	Mildly	Neutral	Mildly	Somewhat	Strongly
Disagree	Disagree	Disagree		Agree	Agree	Agree

13. Under the time-limited promotion, sometimes I wish I had more time to make my purchases. [Single choice question]*

1	2	3	4	5	6	7
Strongly	Somewhat	Mildly	Neutral	Mildly	Somewhat	Strongly
Disagree	Disagree	Disagree		Agree	Agree	Agree

Post-purchase regret

14. Sometimes I wish I had chosen something other than what I purchased. [Single choice question]*						
1	2	3	4	5	6	7
Strongly Disagree	Somewhat Disagree	Mildly Disagree	Neutral	Mildly Agree	Somewhat Agree	Strongly Agree
15. Sometimes I regret the product choice that I made. [Single choice question]*						
1	2	3	4	5	6	7
Strongly Disagree	Somewhat Disagree	Mildly Disagree	Neutral	Mildly Agree	Somewhat Agree	Strongly Agree
16. If I were to go back in time, I would choose something different. [Single choice question]*						
1	2	3	4	5	6	7
Strongly Disagree	Somewhat Disagree	Mildly Disagree	Neutral	Mildly Agree	Somewhat Agree	Strongly Agree
17. Sometimes I wish I hadn't bought a product because it is useless to me. [Single choice question]*						
1	2	3	4	5	6	7
Strongly Disagree	Somewhat Disagree	Mildly Disagree	Neutral	Mildly Agree	Somewhat Agree	Strongly Agree
18. Sometimes I regret a purchase because I did not need the product. [Single choice question]*						
1	2	3	4	5	6	7
Strongly Disagree	Somewhat Disagree	Mildly Disagree	Neutral	Mildly Agree	Somewhat Agree	Strongly Agree
Impulse buying tendency						
19. Sometimes I make spontaneous purchases. [Single choice question]*						
1	2	3	4	5	6	7
Strongly Disagree	Somewhat Disagree	Mildly Disagree	Neutral	Mildly Agree	Somewhat Agree	Strongly Agree
20. Sometimes I make unplanned purchases. [Single choice question]*						
1	2	3	4	5	6	7
Strongly Disagree	Somewhat Disagree	Mildly Disagree	Neutral	Mildly Agree	Somewhat Agree	Strongly Agree
21. Sometimes I could not resist making purchases during sales. [Single choice question]*						
1	2	3	4	5	6	7
Strongly Disagree	Somewhat Disagree	Mildly Disagree	Neutral	Mildly Agree	Somewhat Agree	Strongly Agree

References

- Setti, S.; Wanto, A. Analysis of Backpropagation Algorithm in Predicting the Most Number of Internet Users in the World. *J. Online Inform.* **2019**, *3*, 110–115. [\[CrossRef\]](#)
- Yi, L. *National Report on E-Commerce Development in China*; United Nations Industrial Development Organization: Vienna, Austria, 2017.
- Marjerison, R.K.; Gui, Y.; Hao, J. The Dilemma of Brick and Mortar Bookstores: An Exploration of Trends, Consumer Motives and Perceptions, and Possible Paths to Sustainability. *Rev. Integr. Bus. Econ. Res.* **2021**, *10*, 39–67.
- Kwak, J.; Zhang, Y.; Yu, J. Legitimacy building and E-Commerce Platform Development in China: The Experience of Alibaba. *Technol. Forecast. Soc. Chang.* **2018**, *139*, 115–124. [\[CrossRef\]](#)
- Gao, X.; Shi, X.; Guo, H.; Liu, Y. To Buy or Not Buy Food Online: The Impact of the COVID-19 Epidemic on the Adoption of e-Commerce in China. *PLoS ONE* **2020**, *15*, e0237900. [\[CrossRef\]](#)
- Akram, U.; Hui, P.; Kaleem Khan, M.; Tanveer, Y.; Mehmood, K.; Ahmad, W. How Website Quality Affects Online Impulse Buying: Moderating Effects of Sales Promotion and Credit Card Use. *Asia Pac. J. Mark. Logist.* **2018**, *30*, 235–256. [\[CrossRef\]](#)
- Wu, I.-L.; Chen, K.-W.; Chiu, M.-L. Defining Key Drivers of Online Impulse Purchasing: A Perspective of Both Impulse Shoppers and System Users. *Int. J. Inf. Manag.* **2016**, *36*, 284–296. [\[CrossRef\]](#)
- Marjerison, R.K.; Yipei, Y.; Chen, R. The Impact of Social Media Influencers on Purchase Intention Towards Cosmetic Products in China. *J. Behav. Stud. Bus.* **2019**, *12*, 1–18.
- Marjerison, R.K.; Gan, S. Social Media Influencers' Effect on Chinese Gen Z Consumers: Management and Use of Video Content Platforms. *J. Media Manag. Entrep.* **2020**, *2*, 1–18. [\[CrossRef\]](#)
- Rook, D.W.; Fisher, R.J. Normative Influences on Impulsive Buying Behavior. *J. Consum. Res.* **1995**, *22*, 305–313. [\[CrossRef\]](#)

11. Yin, C.-C.; Hsieh, Y.-C.; Chiu, H.-C.; Yu, J.-L. (Dis)Satisfied with Your Choices? How to Align Online Consumer's Self-Awareness, Time Pressure and Self-Consciousness. *Eur. J. Mark.* **2021**, *55*, 2367–2388. [[CrossRef](#)]
12. Zhao, Z.; Du, X.; Liang, F.; Zhu, X. Effect of Product Type and Time Pressure on Consumers' Online Impulse Buying Intention. *J. Contemp. Mark. Sci.* **2019**, *2*, 137–154. [[CrossRef](#)]
13. Đurđević, N.; Labus, A.; Barać, D.; Radenković, M.; Despotović-Zrakić, M. An Approach to Assessing Shopper Acceptance of Beacon Triggered Promotions in Smart Retail. *Sustainability* **2022**, *14*, 3256. [[CrossRef](#)]
14. Vakeel, K.A.; Sivakumar, K.; Jayasimha, K.; Dey, S. Service Failures after Online Flash Sales: Role of Deal Proneness, Attribution, and Emotion. *J. Serv. Manag.* **2018**, *29*, 253–276. [[CrossRef](#)]
15. Dror, I.E.; Basola, B.; Busemeyer, J.R. Decision Making under Time Pressure: An Independent Test of Sequential Sampling Models. *Mem. Cogn.* **1999**, *27*, 713–725. [[CrossRef](#)] [[PubMed](#)]
16. Peng, L.; Zhang, W.; Wang, X.; Liang, S. Moderating Effects of Time Pressure on the Relationship between Perceived Value and Purchase Intention in Social E-Commerce Sales Promotion: Considering the Impact of Product Involvement. *Inf. Manag.* **2018**, *56*, 317–328. [[CrossRef](#)]
17. Kocher, M.G.; Sutter, M. Time Is Money—Time Pressure, Incentives, and the Quality of Decision-Making. *J. Econ. Behav. Organ.* **2006**, *61*, 375–392. [[CrossRef](#)]
18. Alden, L.E.; Teschuk, M.; Tee, K. Public Self-Awareness and Withdrawal from Social Interactions. *Cogn. Ther. Res.* **1992**, *16*, 249–267. [[CrossRef](#)]
19. Lin, Y.; Marjerison, R.K.; Kennedy, S.I. Reposting Inclination of Chinese Millennials on Social Media: Consideration of Gender, Motivation, Content and Form. *J. Int. Bus. Cult. Stud.* **2019**, *12*, 1–20.
20. Pham, M.T.; Goukens, C.; Lehmann, D.R.; Stuart, J.A. Shaping Customer Satisfaction through Self-Awareness Cues. *J. Mark. Res.* **2010**, *47*, 920–932. [[CrossRef](#)]
21. White, K.; Stackhouse, M.; Argo, J.J. When Social Identity Threat Leads to the Selection of Identity-Reinforcing Options: The Role of Public Self-Awareness. *Organ. Behav. Hum. Decis. Process.* **2018**, *144*, 60–73. [[CrossRef](#)]
22. Stafford, T.F.; Turan, A.; Raisinghani, M.S. International and Cross-Cultural Influences on Online Shopping Behavior. *J. Glob. Inf. Technol. Manag.* **2004**, *7*, 70–87. [[CrossRef](#)]
23. Adler, N.J.; Campbell, N.; Laurent, A. In Search of Appropriate Methodology: From Outside the People's Republic of China Looking In. *J. Int. Bus. Stud.* **1989**, *20*, 61–74. [[CrossRef](#)]
24. Schoeneman, T.J. Reports of the Sources of Self-Knowledge. *J. Personal.* **1981**, *49*, 284–294. [[CrossRef](#)]
25. Fejfar, M.C.; Hoyle, R.H. Effect of Private Self-Awareness on Negative Affect and Self-Referent Attribution: A Quantitative Review. *Personal. Soc. Psychol. Rev.* **2000**, *4*, 132–142. [[CrossRef](#)]
26. López-Bonilla, L.M.; Sanz-Altamira, B.; López-Bonilla, J.M. Self-Consciousness in Online Shopping Behavior. *Mathematics* **2021**, *9*, 729. [[CrossRef](#)]
27. Doherty, K.; Schlenker, B.R. Self-Consciousness and Strategic Self-Presentation. *J. Personal.* **1991**, *59*, 1–18. [[CrossRef](#)]
28. Pfattheicher, S.; Keller, J. The Watching Eyes Phenomenon: The Role of a Sense of Being Seen and Public Self-awareness. *Eur. J. Soc. Psychol.* **2015**, *45*, 560–566. [[CrossRef](#)]
29. Gilovich, T.; Medvec, V.H.; Savitsky, K. The Spotlight Effect in Social Judgment: An Egocentric Bias in Estimates of the Salience of One's Own Actions and Appearance. *J. Personal. Soc. Psychol.* **2000**, *78*, 211–222. [[CrossRef](#)] [[PubMed](#)]
30. Van Bommel, M.; van Prooijen, J.-W.; Elffers, H.; Van Lange, P.A. Be Aware to Care: Public Self-Awareness Leads to a Reversal of the Bystander Effect. *J. Exp. Soc. Psychol.* **2012**, *48*, 926–930. [[CrossRef](#)]
31. Vohs, K.D.; Faber, R.J. Spent Resources: Self-Regulatory Resource Availability Affects Impulse Buying. *J. Consum. Res.* **2007**, *33*, 537–547. [[CrossRef](#)]
32. Sun, G.; Shen, F.; Ma, X. The Influence of Face on Online Purchases: Evidence From China. *Front. Psychol.* **2021**, *12*, 788063. [[CrossRef](#)] [[PubMed](#)]
33. Luo, H.; Cheng, S.; Zhou, W.; Song, W.; Yu, S.; Lin, X. Research on the Impact of Online Promotions on Consumers' Impulsive Online Shopping Intentions. *J. Theor. Appl. Electron. Commer. Res.* **2021**, *16*, 2386–2404. [[CrossRef](#)]
34. Etzioni, A. Rationality Is Anti-Entropic. *J. Econ. Psychol.* **1986**, *7*, 17–36. [[CrossRef](#)]
35. Han, Y.K.; Morgan, G.A.; Kotsiopulos, A.; Kang-Park, J. Impulse Buying Behavior of Apparel Purchasers. *Cloth. Text. Res. J.* **1991**, *9*, 15–21. [[CrossRef](#)]
36. Hoch, S.J.; Loewenstein, G.F. Time-Inconsistent Preferences and Consumer Self-Control. *J. Consum. Res.* **1991**, *17*, 492–507. [[CrossRef](#)]
37. Jones, M.A.; Reynolds, K.E.; Weun, S.; Beatty, S.E. The Product-Specific Nature of Impulse Buying Tendency. *J. Bus. Res.* **2003**, *56*, 505–511. [[CrossRef](#)]
38. Park, C.W.; Iyer, E.S.; Smith, D.C. The Effects of Situational Factors on In-Store Grocery Shopping Behavior: The Role of Store Environment and Time Available for Shopping. *J. Consum. Res.* **1989**, *15*, 422–433. [[CrossRef](#)]
39. Dholakia, U.M. Temptation and Resistance: An Integrated Model of Consumption Impulse Formation and Enactment. *Psychol. Mark.* **2000**, *17*, 955–982. [[CrossRef](#)]
40. Kumar, A.; Chaudhuri, S.; Bhardwaj, A.; Mishra, P. Impulse Buying and Post-Purchase Regret: A Study of Shopping Behaviour for the Purchase of Grocery Products. *Int. J. Manag.* **2020**, *11*, 614–624. [[CrossRef](#)]

41. Wansink, B. The Dark Side of Consumer Behavior: Empirical Examinations of Impulsive and Compulsive Consumption. In *Advances in Consumer Research*; Allen, C.T., John, D.R., Eds.; Association for Consumer Research: Provo, UT, USA, 1994; Volume 21.
42. Ji, K.; Ha, H.-Y. An Empirical Test of Mobile Service Provider Promotions on Repurchase Intentions. *Sustainability* **2021**, *13*, 2894. [[CrossRef](#)]
43. Farhani, N.; Herawaty, T.; Tresna, P.W. Influence of TV Commercial Toward Buying Interest (Comparison between BliBli.com and Lazada TV Commercial). *Rev. Integr. Bus. Econ. Res.* **2017**, *6*, 227–237.
44. Iyer, G.R.; Blut, M.; Xiao, S.H.; Grewal, D. Impulse Buying: A Meta-Analytic Review. *J. Acad. Mark. Sci.* **2020**, *48*, 384–404. [[CrossRef](#)]
45. Rook, D.W. The Buying Impulse. *J. Consum. Res.* **1987**, *14*, 189–199. [[CrossRef](#)]
46. Dawson, S.; Kim, M. External and Internal Trigger Cues of Impulse Buying Online. *Direct Mark. Int. J.* **2009**, *3*, 20–34. [[CrossRef](#)]
47. Vigneron, F.; Johnson, L.W. A Review and a Conceptual Framework of Prestige-Seeking Consumer Behavior. *Acad. Mark. Sci. Rev.* **1999**, *1*, 1–15.
48. Burnkrant, R.E. On the Management of Self Images in Social Situations: &Nbsp; the Role of Public Self Consciousness. In *Advances in Consumer Research*; Mitchell, A., Ed.; Association for Consumer Research: Ann Harbor, MI, USA, 1982; Volume 9.
49. Madigan, D.J. A Meta-Analysis of Perfectionism and Academic Achievement. *Educ. Psychol. Rev.* **2019**, *31*, 967–989. [[CrossRef](#)]
50. Flett, G.L.; Hewitt, P.L.; Nepon, T.; Sherry, S.B.; Smith, M. The Destructiveness and Public Health Significance of Socially Prescribed Perfectionism: A Review, Analysis, and Conceptual Extension. *Clin. Psychol. Rev.* **2022**, *93*, 102130. [[CrossRef](#)] [[PubMed](#)]
51. Jang, H. Differences in Depression, Anxiety, Self-Consciousness, Procrastination among College Women with Different Types of Perfectionism. Master's Thesis, Keimyung University, Daegu, Republic of Korea, 2002.
52. Lau-Gesk, L.; Drolet, A. The Publicly Self-Consciousness Consumer: Prepared to Be Embarrassed. *J. Consum. Psychol.* **2008**, *18*, 127–136. [[CrossRef](#)]
53. Simpson, P.M.; Sigauw, J.A.; Cadogan, J.W. Understanding the Consumer Propensity to Observe. *Eur. J. Mark.* **2008**, *42*, 196–221. [[CrossRef](#)]
54. Van de Ven, N.; Zeelenberg, M. On the Counterfactual Nature of Envy: “It Could Have Been Me”. *Cogn. Emot.* **2015**, *29*, 954–971. [[CrossRef](#)] [[PubMed](#)]
55. Shankar, A.; Cherrier, H.; Canniford, R. Consumer Empowerment: A Foucauldian Interpretation. *Eur. J. Mark.* **2006**, *40*, 1013–1030. [[CrossRef](#)]
56. Tata, S.V.; Prashar, S.; Parsad, C. Examining the Influence of Satisfaction and Regret on Online Shoppers' Post-Purchase Behaviour. *Benchmarking Int. J.* **2020**, *28*, 1987–2007. [[CrossRef](#)]
57. Sweeney, J.C.; Hausknecht, D.; Soutar, G.N. Cognitive Dissonance after Purchase: A Multidimensional Scale. *Psychol. Mark.* **2000**, *17*, 369–385. [[CrossRef](#)]
58. Zeelenberg, M. Anticipated Regret, Expected Feedback and Behavioral Decision Making. *J. Behav. Decis. Mak.* **1999**, *12*, 93–106. [[CrossRef](#)]
59. Lee, C.-H.; Chen, C.-W. Impulse Buying Behaviors in Live Streaming Commerce Based on the Stimulus-Organism-Response Framework. *Information* **2021**, *12*, 241. [[CrossRef](#)]
60. Krueger, D.W. On Compulsive Shopping and Spending: A Psychodynamic Inquiry. *Am. J. Psychother.* **1988**, *42*, 574–584. [[CrossRef](#)]
61. Chan, T.K.; Cheung, C.M.; Lee, Z.W. The State of Online Impulse-Buying Research: A Literature Analysis. *Inf. Manag.* **2017**, *54*, 204–217. [[CrossRef](#)]
62. Verplanken, B.; Sato, A. The Psychology of Impulse Buying: An Integrative Self-Regulation Approach. *J. Consum. Policy* **2011**, *34*, 197–210. [[CrossRef](#)]
63. Aggarwal, P.; Jun, S.Y.; Huh, J.H. Scarcity Messages. *J. Advert.* **2011**, *40*, 19–30. [[CrossRef](#)]
64. Mitomi, Y. What Is Marketing Time Pressure? *Ann. Bus. Adm. Sci.* **2017**, *16*, 275–285. [[CrossRef](#)]
65. Ordonez, L.; Benson, L., III. Decisions under Time Pressure: How Time Constraint Affects Risky Decision Making. *Organ. Behav. Hum. Decis. Process.* **1997**, *71*, 121–140. [[CrossRef](#)]
66. Dhar, R.; Nowlis, S.M. The Effect of Time Pressure on Consumer Choice Deferral. *J. Consum. Res.* **1999**, *25*, 369–384. [[CrossRef](#)]
67. Hogarth, R.M.; Makridakis, S. The Value of Decision Making in a Complex Environment: An Experimental Approach. *Manag. Sci.* **1981**, *27*, 93–107. [[CrossRef](#)]
68. Svenson, O.; Edland, A. Change of Preferences under Time Pressure: Choices and Judgements. *Scand. J. Psychol.* **1987**, *28*, 322–330. [[CrossRef](#)]
69. Dogra, J.; Karri, V.R.S. Prominence of Organic Image in Tourist Destinations: Indian Leisure Tourism Narrative. *Int. J. Cult. Tour. Hosp. Res.* **2021**, *15*, 565–579. [[CrossRef](#)]
70. Fan, X.; Zhang, C.; Yang, Y.; Shang, Y.; Zhang, X.; He, Z.; Xiao, Y.; Long, B.; Wu, L. Automatic Generation of Product-Image Sequence in E-Commerce. In Proceedings of the 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, Washington, DC, USA, 14–18 September 2022; Association for Computing Machinery: New York, NY, USA, 2022; pp. 2851–2859. [[CrossRef](#)]
71. Liu, Y.; Li, Q.; Yin, M. The Influence of Internet Shopping Festival Atmosphere on Consumer Impulse Buying. *Bus. Res.* **2018**, *7*, 18–23.

72. Carnevale, P.J.; Lawler, E.J. Time Pressure and the Development of Integrative Agreements in Bilateral Negotiations. *J. Confl. Resolut.* **1986**, *30*, 636–659. [\[CrossRef\]](#)
73. Kruglanski, A.W.; Webster, D.M. Motivated Closing of the Mind: “Seizing” and “Freezing”. *Psychol. Rev.* **1996**, *103*, 263–283. [\[CrossRef\]](#) [\[PubMed\]](#)
74. Payne, J.W.; Bettman, J.R.; Luce, M.F. When Time Is Money: Decision Behavior under Opportunity-Cost Time Pressure. *Organ. Behav. Hum. Decis. Process.* **1996**, *66*, 131–152. [\[CrossRef\]](#)
75. Bazerman, M.H.; Moore, D.A. *Judgment in Managerial Decision Making*; John Wiley and Sons: Hoboken, NJ, USA, 2012.
76. Baron, R.A.; Bronfen, M.I. A Whiff of Reality: Empirical Evidence Concerning the Effects of Pleasant Fragrances on Work-Related Behavior. *J. Appl. Soc. Psychol.* **1994**, *24*, 1179–1203. [\[CrossRef\]](#)
77. Leenders, M.A.; Smidts, A.; El Haji, A. Ambient Scent as a Mood Inducer in Supermarkets: The Role of Scent Intensity and Time-Pressure of Shoppers. *J. Retail. Consum. Serv.* **2019**, *48*, 270–280. [\[CrossRef\]](#)
78. Wu, Y.; Xin, L.; Li, D.; Yu, J.; Guo, J. How Does Scarcity Promotion Lead to Impulse Purchase in the Online Market? A Field Experiment. *Inf. Manag.* **2020**, *58*, 103283. [\[CrossRef\]](#)
79. Hu, Y.; Wang, D.; Pang, K.; Xu, G.; Guo, J. The Effect of Emotion and Time Pressure on Risk Decision-Making. *J. Risk Res.* **2015**, *18*, 637–650. [\[CrossRef\]](#)
80. De Paola, M.; Gioia, F. Who Performs Better under Time Pressure? Results from a Field Experiment. *J. Econ. Psychol.* **2016**, *53*, 37–53. [\[CrossRef\]](#)
81. Iyer, E.S. Unplanned Purchasing: Knowledge of Shopping Environment and Time Pressure. *J. Retail.* **1989**, *65*, 40–57.
82. Zeithaml, V.A. Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence. *J. Mark.* **1988**, *52*, 2–22. [\[CrossRef\]](#)
83. Ratner, R.K.; Kahn, B.E. The Impact of Private versus Public Consumption on Variety-Seeking Behavior. *J. Consum. Res.* **2002**, *29*, 246–257. [\[CrossRef\]](#)
84. White, K.; Peloza, J. Self-Benefit versus Other-Benefit Marketing Appeals: Their Effectiveness in Generating Charitable Support. *J. Mark.* **2009**, *73*, 109–124. [\[CrossRef\]](#)
85. Greenberg, J. Self-Image versus Impression Management in Adherence to Distributive Justice Standards: The Influence of Self-Awareness and Self-Consciousness. *J. Personal. Soc. Psychol.* **1983**, *44*, 5–19. [\[CrossRef\]](#)
86. Fenigstein, A.; Scheier, M.F.; Buss, A.H. Public and Private Self-Consciousness: Assessment and Theory. *J. Consult. Clin. Psychol.* **1975**, *43*, 522–527. [\[CrossRef\]](#)
87. Lee, S.H.; Cotte, J. Post-Purchase Consumer Regret: Conceptualization and Development of the PPCR Scale. In *Advances in Consumer Research*; McGill, A.L., Shavitt, S., Eds.; Association for Consumer Research: Duluth, MN, USA, 2009; Volume 36.
88. Liu, R.R.; McClure, P. Recognizing Cross-Cultural Differences in Consumer Complaint Behavior and Intentions: An Empirical Examination. *J. Consum. Mark.* **2001**, *8*, 54–75. [\[CrossRef\]](#)
89. Singh, J. Consumer Complaint Intentions and Behavior: Definitional and Taxonomical Issues. *J. Mark.* **1988**, *52*, 93–107. [\[Cross-Ref\]](#)
90. Verhagen, T.; van Dolen, W. The Influence of Online Store Beliefs on Consumer Online Impulse Buying: A Model and Empirical Application. *Inf. Manag.* **2011**, *48*, 320–327. [\[CrossRef\]](#)
91. Allen, I.E.; Seaman, C.A. Likert Scales and Data Analyses. *Qual. Prog.* **2007**, *40*, 64–65.
92. Hair, J.F. Multivariate Data Analysis: An Overview. In *International Encyclopedia of Statistical Science*; Lovric, M., Ed.; Springer: Berlin/Heidelberg, Germany, 2011; pp. 904–907.
93. Xu, Y. The Influence of Public Self-Consciousness and Materialism on Young Consumers’ Compulsive Buying. *Young Consum.* **2008**, *9*, 37–48. [\[CrossRef\]](#)
94. Kang, M.; Johnson, K. Identifying Characteristics of Consumers Who Frequently Return Apparel. *J. Fash. Mark. Manag. Int. J.* **2009**, *13*, 37–48. [\[CrossRef\]](#)
95. Lee, S.-H.; Workman, J.E. Consumer Tendency to Regret, Compulsive Buying, Gender, and Fashion Time-of-Adoption Groups. *Int. J. Fash. Des. Technol. Educ.* **2018**, *11*, 265–276. [\[CrossRef\]](#)
96. Abdel, M.; Saleh, H. An Investigation of the Relationship between Unplanned Buying and Post-Purchase Regret. *Int. J. Mark. Stud.* **2012**, *4*, 106.
97. Chen, W.-K.; Chen, C.-W.; Lin, Y.-C. Understanding the Influence of Impulse Buying toward Consumers’ Post-Purchase Dissonance and Return Intention: An Empirical Investigation of Apparel Websites. *J. Ambient. Intell. Humaniz. Comput.* **2020**. [\[CrossRef\]](#)
98. Inman, J.J.; Peter, A.C.; Raghubir, P. Framing the Deal: The Role of Restrictions in Accentuating Deal Value. *J. Consum. Res.* **1997**, *24*, 68–79. [\[CrossRef\]](#)
99. Taylor, S.E.; Schneider, S.K. Coping and the Simulation of Events. *Soc. Cogn.* **1989**, *7*, 174–194. [\[CrossRef\]](#)
100. Tsiros, M.; Mittal, V. Regret: A Model of Its Antecedents and Consequences in Consumer Decision Making. *J. Consum. Res.* **2000**, *26*, 401–417. [\[CrossRef\]](#)
101. Sohn, H.-K.; Lee, T.J. Tourists’ Impulse Buying Behavior at Duty-Free Shops: The Moderating Effects of Time Pressure and Shopping Involvement. *J. Travel Tour. Mark.* **2017**, *34*, 341–356. [\[CrossRef\]](#)
102. Jiang, C.; Rashid, R.M.; Wang, J. Investigating the Role of Social Presence Dimensions and Information Support on Consumers’ Trust and Shopping Intentions. *J. Retail. Consum. Serv.* **2019**, *51*, 263–270. [\[CrossRef\]](#)

-
103. Hassanein, K.; Head, M. Manipulating Perceived Social Presence through the Web Interface and Its Impact on Attitude towards Online Shopping. *Int. J. Hum. Comput. Stud.* **2007**, *65*, 689–708. [[CrossRef](#)]
 104. Shen, J. Social Comparison, Social Presence, and Enjoyment in the Acceptance of Social Shopping Websites. *J. Electron. Commer. Res.* **2012**, *13*, 198.
 105. Marjerison, R.K.; Lin, Y.; Kennedy, S.I. An Examination of Motivation and Media Type: Sharing Content on Chinese Social Media. *Int. J. Soc. Media Online Communities* **2019**, *11*, 15–34. [[CrossRef](#)]
 106. Johar, J.S.; Sirgy, M.J. Value-Expressive versus Utilitarian Advertising Appeals: When and Why to Use Which Appeal. *J. Advert.* **1991**, *20*, 23–33. [[CrossRef](#)]
 107. Workman, J.E.; Lee, S.-H. Fashion Trendsetting, Attitudes toward Money, and Tendency to Regret. *Int. J. Retail Distrib. Manag.* **2019**, *47*, 1203–1222. [[CrossRef](#)]
 108. Ling, Y.J.; Ariff, M.S.B.; Zakuan, N.; Tajudin, M.N.M.; Ishak, N.; Haji, L.T.; Ismail, K. Brand Personality, Brand Loyalty and Brand Quality Rating in the Contact Lens Perspective. *Rev. Integr. Bus. Econ. Res.* **2014**, *3*, 433–449.