A Cross-Cultural Investigation of Consumer Impulsive Buying Behavior during the Covid-19 Pandemic

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Abstract

Due to the pandemic, online purchases have become the new normal. This study, comparing Chinese and American consumers, explores the antecedents of impulsive online purchases during the COVID-19 pandemic. The purpose of the study is to find to what extent perceived usefulness and perceived enjoyment mediates Chinese and American purchases in the pandemic and to what degree these variables predict impulsive shopping behavior. The data was collected online, and the total sample was 440. A three-layer hierarchical model, based on S-O-R framework, was proposed to test the effect of the variables. The results indicated that the perceived usefulness of the product is a stronger predictor in China than in the USA, whereas product involvement was more highly valued among American consumers. Overall, it was found that the hedonic value is a direct predictor of impulsive behavior in China and in the USA. The proposed model fits well in both countries.

***Keywords**:* consumer behavior; cross-cultural study; impulsive shopping, hedonic shopping value, COVID-19 pandemic.

1. Introduction

As marketers tried to understand what kind of strategies can induce consumers to buy something immediately, concerns generated by impulse buying behavior has raised (Prashar et al., 2017; Zou, 2018). Multiple efforts on studying impulsive buying have been focused on understanding differences between online and of-line setting (i.e. Mohan et al., 2013; Chang et al., 2011). In today's online world, marketers are eager to adjust products displayed in an online retail setting to compel the online consumer to buy more impulsively. However, research is needed in understanding what kinds of motivations drive consumers to purchase impulsively in an online environment.

Due to the quarantine and social distance restrictions derived from the COVID 19 pandemic, increased online impulsive buying behavior has raised as public health concerns have been raised. This is not unexpected, as it is been found that consumers develop many unexplained behaviors during crisis moments (Sheth, 2020). The COVID 19 pandemic caused one of the most significant increases in e-commerce sales that the USA has ever experienced. The share of e-commerce sales in USA retail rose from 12% in February 2020 to 14.5% in May 2020 (eMarketer, 2020). A report shows that the share of e-commerce also increased 35% year-by-year from January to June of 2020 in the Chinese retail market (Kantar). Understanding the consumers' COVID-19 impulsive online buying is important at a domestic and international level. That is, a trans-national/ cross-cultural comparison is for a better understanding of impulsive online behavior.

This study aims to investigate the antecedents of impulsive purchase behavior on Chinese and America consumers during the COVID-19 pandemic. This study proposes a model to understand consumers' impulsive shopping by a) exploring the impact that the COVID 19 phenomenon along the website' tools play on consumers' perceived

usefulness, enjoyment, and easy to use b) and how these variables in turn, affect the relationship between product involvement, and hedonic values on the consumers' urge to buy products online.

2. Literature Review, Theory and Hypotheses Development

This study uses the stimulus-organism-response (S-O-R) framework to identify the stimuli affecting impulsive behavior. The S-O-R, derived from environmental psychology, is adapted in this study to model the antecedents of impulsive purchase behavior on Chinese and America consumers. The framework is based on work by Mehrabian and Russell (1974), who stated that environmental stimuli will lead to certain, mostly emotional, reactions which are defined here as the organism component in the S-O-R framework. This is a three-part conceptualization, which enables the creation of predictive models in the consumer decision-making process of online environments (i.e., Eroglu et al., 2001; Adelaar et al., 2003). Eroglu et al. (2001) applied the S-O-R framework to the online shopping problem, believing stimuli lead to cognitive reactions. Parboteeah et al. (2009) recommends the use of the S-O-R model to investigate impulsive purchasing behaviors across product categories. Parboteeah et al. (2016) developed their research, to investigate the online impulsive purchase of certain categories - wine products. Likewise, during the COVID-19 pandemic, a recent study applied this model to investigate unusual purchasing behavior while used information overload as stimuli (Laato et al., 2020).

2.1 Impulse Buying Behavior

Impulse buying is typically considered simply as unplanned buying behaviors. Piron (1991) defined impulse buying behavior as "a purchase that is unplanned, the result of an exposure to a stimulus, and decided on the spot" (p. 512). The more researchers started to study impulse buying in the 1960s, the more definitions were identified. Impulse buying was defined by Beatty & Ferrell (1998) as "a sudden and immediate purchase with no pre-shopping intentions either to buy the specific product category or to fulfill a specific buying task". Impulse purchasing behaviors usually happen after consumers have an urge to buy something without a lot of consideration, it usually happens spontaneously (i.e. it is 'impulsive'). The consumer decision process not only takes place in an in-store shopping environment but also takes place in an online shopping environment, this framework can be used for online impulse purchasing. Thus, impulse buying can be categorized as the "behavioral response" part in the S-O-R framework since consumers will have responses after they receive a stimulus in a purchase process.

2.1.1 Impulsive Buying in China

In relation to impulsive buying in China, Yu & Bastin (2010) confirmed the latter is closely associated with some emotions (e.g., fun, novelty, and praise from others) originally from hedonic shopping value among Chinese consumers. Recent studies discussed impulsive buying under emergency and crisis situations, such as that of COVID-19. For instance, a study revealed that the severity of a pandemic positively affects Chinese's impulsive consumption (Li et al., 2020). Similarly, Xiao et al. (2020) investigated that daily perceived uncertainty on COVID-19 affected daily information overload, which in turn, stimulated daily information anxiety, ultimately determining the daily impulsive buying. Xiao et al.'s (2020) claimed the mediating role of daily information overload and daily information produce anxiety, and in turn increased impulsive behavior.

2.1.2 Impulsive Buying in US

The literature on impulsive buying states that hedonic motivation moderated the relationship between social characteristics of the retail environment and Americans' positive emotional responses among American consumers (Chang et al., 2011). Wells and colleagues (2011) analyzed the effect of website attributes on the urge to buy impulsively and proposed that e-commerce companies should put many efforts into designing their web sites as these can predict consumer behavior. In addition, Zhang, and colleagues (2006) argued that impulsiveness had a positive effect on consumers' online shopping intention, and they recommend urged strategic use of impulsiveness for e-businesses to stimulate consumers' intention to purchase online.

2.2 Responses to Pandemic Cues

Research on the effect of pandemics focuses on preventive health behavior, not consumer behaviors (Laato eta al., 2020). Yet, this unique and unexpected situation demands a careful examination on how the communication tools affect consumer behaviors cross-culturally. In the communication context, a cue is a signal, or a sign given to the audience or consumers. Laato and colleagues (2020) documented an unusual purchasing behavior in March 2020 globally, and stated it was due to quarantine preparations. The preparation for the quarantine was in this case the

pandemic cue sent to consumers. That is, if a consumer engages on an activity because of the pandemic, it can be said it was due to a pandemic cue.

According to the S-O-R model (Parboteeah et al. 2016), there are relevant cues (high and low) representing the marketing stimuli that affect consumer behavior. In the context of the global outbreak, the perceived pandemic cue represents an essential predictor that led consumers to cognitive and affective reactions, as suggested in the S-O-R model. Therefore, the pandemic cues are included in the conceptual model an essential cue predicting impulsive behavior. See Figure 1.

2.3 The Impact of COVID-19 on Enjoyment, Usefulness, and Hedonic Values

The theory of acceptance model (TAM) has supported the assertion that perceived usefulness, perceived enjoyment, and perceived easy to use are key predictor of the intention to behave (Kwasi & Salam, 2004). Most studies on online shopping behavior support the contention that perceived usefulness, perceived enjoyment, and perceived ease of navigation are key determinants on impulsive behavior (e.i., Ramayah & Ignatius 2005; Davis et al.,1989). Likewise, the hedonic value regarding online purchase behavior has been found to be key a determinant explaining impulsiveness (Ramanathan et al., 2006; Chung et al., 2017). In the proposed research model (Figure 1), pandemic cues act as stimuli to test relationships with perceived usefulness, perceived enjoyment, and hedonic shopping value. Therefore, based on the S-O-R model, TAM theory and previous premises, the following hypothesis is proposed:

H1: Pandemic cues (PC) will have a significant effect on (a) perceived usefulness (PU), (b) perceived enjoyment (PE), and (c) hedonic shopping value (HSV).

2.4 Online Communication Stimuli: Easy to Use and Website Appearance

According to the Eroglu and colleagues (2001), the website characteristics on a consumer's impulsive purchase behavior can also serve as elements of stimuli that lead to cognitive and affective reactions. Based on the S-O-R model, the high task-relevant cues, existing in the utilitarian aspects of the website, includes ease of navigation (Bauer, et al. 2002), website security (Zhang & Von Dran, 2001–2002), download delay (Palmer, 2002), among others. As one of the low task relevant cues identified in the literature is the website appearance (Van der Heijden et al., 2003), which includes colors, music, and font (Eroglu et al., 2001). This model chose ease of navigation to represent high-task relevant cues and website appearance to represent low-task relevant cues. Both variables have been found to have a positive influence on usefulness and hedonic aspects of impulse buying (Parboteeah et al., 2016). Thus, the following hypothesis is proposed:

H2: Ease of navigation (EV) will positively affect (a) perceived usefulness (PU), (b) perceived enjoyment (PE) and (c) hedonic shopping value (HSV).

H3: Website appearance (WA) will positively affect (a) perceived usefulness (PU) and (b) perceived enjoyment (PE) (c) hedonic shopping value (HSV).

2.5 Product Involvement

Product involvement is typically defined as a consumer's enduring perceptions of a product based on inherent needs, values, and interests (Zaichkowsky, 1985; Mittal, 1995). Product involvement had been used as one of several explanatory variables in consumer behavioral studies (Dholakia, 1998). Li (2019) did an experiment to found that the level of product involvement directly affects perceived usefulness, such as perceived usefulness of product information. Juhl and Poulsen (2000) found that perceived shopping enjoyment can better explain the impact of product involvement than other cognitive factors.

The level of product involvement affects cognitive and behavioral processes; in other words, the involvement can be cognitive or effective during the consumer choice process (i.e., Chakravarti & Janiszewski, 2003). Previous researchers have also found that product involvement has a direct influence on product value and plays a moderating role in the paths between hedonic value and customer satisfaction (Lai & Chen, 2011). Therefore, the current study predicts that product involvement may cause varying effects on perceived usefulness and enjoyment, and hedonic shopping value. Thus, the following hypothesis is proposed:

H4: Product involvement (PI) will positively affect (a) perceived usefulness (PU), (b) perceived enjoyment (PE), and (c) hedonic shopping value (HSV).

2.6 Perceived Enjoyment and Perceived Usefulness

There are extensive studies concentrated on the interplay between cognition and affect (Shiv & Fedorikhin, 1999). Holbrook and Batra (1987) stated that cognition influences affect, then ultimately determines behavior. In integrated marketing, this definition can be used on consumer behavioral studies, such as on impulsive buying behavior. Parboteeah and colleagues (2009) concluded that there should be an interaction between perceived usefulness and perceived enjoyment to certain stimuli. They propose this relationship should be positive which will increase the enjoyment factor of online impulse buying. Thus, the following hypothesis is proposed:

H5: Perceived usefulness (PU) will positively affect perceived enjoyment (PE).

2.7 Hedonic Shopping Value

Hedonic shopping value (HSV) is an experiential, emotional, and irrational value. Consumers who seek hedonic shopping value have positive emotions when they are shopping (Babin et al.,1994). Kim and Eastin (2011) stated HSV is more effective than utilitarian shopping value because the former is linked to pleasure and entertainment. Shukla and Babin (2013) discussed consumers who are more likely to purchase in a new system often shop for fun. It is the same in online shopping environments because there are no time and location limitations, which results in consumers being more likely to make unplanned purchases, such as impulsive buying (LaRose, 2011). Thus, it is proposed HSV will significantly affect perceived enjoyment.

H6: Hedonic shopping values (HSV) will have a significant effect on perceived enjoyment (PE).

2.8 Urge to Buy Impulsively

According to S-O-R framework, an individual's emotional response to the environment will determine their behavior (Mehrabian & Russell, 1974). In other words, a consumer will change his or her decision when they receive affective reactions. The extant literature on impulse buying indicates hedonic shopping values has a direct effect on consumer impulse buying behaviors (Kukar-Kinney et al., 2015). Affective reactions have been stated to positively affect the urge to buy impulsively; this relationship was replicated in traditional shopping contexts (Beatty & Ferrell, 1998), as well as in online impulse buying (Adelaar et al., 2003; Parboteeah et al., 2009; Parboteeah et al. 2016). Thus, based on the work by Parboteeah and colleagues (2016), the following hypothesis are proposed:

H7: Hedonic Shopping Values (HSV) will positively affect the urge to buy impulsively.

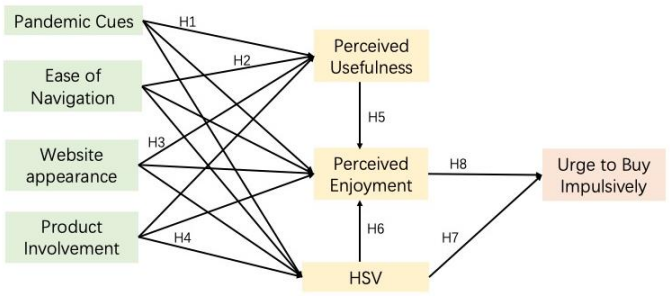
H8: Perceived enjoyment (PE) will positively affect the urge to buy impulsively.

2.9 Cross-cultural Comparisons

A cross-culture comparison in consumer behavior is increasingly essential for online business world. The literature claims that significant differences can be found between Chinese and American consumers (e.i., Mazaheri et al., 2011; Talor et al., 1997). Similarly, it has been claimed consumers with different cultures would be motivated by various values whenever in the online or the instore decision-making process (i.e., Mazaheri et al., 2011). Hofstede's (2005) framework of culture is usually employed to understand the role of cultural values on attitudes and behavior. He defines culture as "the collective programming of the mind which distinguishes the members of one group or category of people from another" (Hofstede, 2005, p. 6). Hofstede defines five dimensions of cross-cultural distinction: power distance, masculinity, or femininity, long-term or short-term orientation, uncertainty avoidance, and individualism or collectivism. China and the United States obtain different scores in these five dimensions (Hofstede et al., 2005). While Americans score higher in their levels of indulgence, short-term orientation, and values related with short and impulsive buying decision, Chinese consumers rate higher in restrain and long-term orientation. Considering their differences, a question is raised in this study:

RQ1: Is the American consumers' impulsive purchasing behavior different from Chinese consumers during the COVID-19 pandemic?

Figure 1. Conceptual Model



3. Research Design and Methodology

3.1 Sample and Data Collection

A two-step process was design for this study. First, a focus group was conducted to identify the item selection for the "pandemic cues" measure. Then, an online survey created in English and Mandarin was administered using convenience samples. The Mandarin survey was back translated to English for validation purposes. A total sample of 440 was collected from July to September 2020. The sample was composed of 208 Americans and 232 Chinese. Of these, most respondents are between the ages of 18 and 25 in the USA (96.2%), and between 25 and 40 in China (50.53%). In the USA and China, respectively, 98.6 and 53.9 percent of the respondents were women.

3.2 Measurements

The constructs used to measure the variables proposed in the conceptual model were adapted from already developed and validated scales. Taylor and colleagues' (2010) task-relevant cues scale were adapted to measure the perceived ease of navigation (6-item) and appearance of the website (7-item). The hedonic shopping value was measured using a 7-item scale adapted from Babin and colleagues, (1994) and Griffin and colleagues, (2000). Product Involvement was measured using the Zaichkowsky's (1994) 10- item scale. Perceived usefulness was measured by adapting the 4-item scale from Davis and colleagues, (1989). Perceived enjoyment was measured by using a 3-item scale adapted by Chang & Cheung (2001). A 3-item scale measuring purchase impulsivity was adapted from Rook & Fisher (1995). A 7-point Likert scale was used to measure all the variables mentioned above. A scale to measure the presence of the pandemic cue on consumers' purchases was created for this study; a 3-item construct using a 7-point Likert scale was developed and tested. Finally, the demographics questions were included as well.

4. Data Analysis and Results

4.1 Measures Validation

Given the scales adapted for this study were created in English and translated to Mandarin, there was a need to perform an Exploratory Factor Analysis as well as a Confirmatory Factor Analysis for validation purposes. First, following the Fornell and Larcker (1981) criteria, items with cross-loading and low loading were deleted. Cronbach's alphas were run to test reliability. Overall, the results revealed the reliability levels were above the recommended level of 0.7 (Nunnally & Bernstein, 1994). See the results in Table 1.

Table 1: EFA Standardized loadings and reliability coefficients for each construct.

Item	Item Loading	Cronbach's α
Factor 1: Pandemia cues (self-developed)		0.852
I bought the product(s) listed above because of the COVID-19 pandemic.	0.897	
I bought the product(s) listed above primarily because of the COVID-19 pandemic.		
I would not have bought the product(s) listed above if it was not for the COVID-19 pandemic.	0.933	
	0.803	
Factor 2: Ease of navigation (adapted Taylor et al., 2010)		0.934

Navigating these web pages where I purchased the item mentioned above was easy for me.	0.838	
I found that my interaction with the website where I purchased the item was clear and understandable.	0.893	
It is easy for me to become skillful at navigating the pages of this website where I purchased the item.	0.880	
Overall, I find the pages where I purchased the item easy to navigate.	0.899	
It was pleasant to follow the overall flow of the website where I purchased the item.	0.853	
It is pleasant to follow and use the menu structure of the site where I purchased the item.	0.842	
Factor 3: Website appearance (adapted Taylor et al., 2010)		
The shopping site where I purchased the item was visually pleasing.	0.856	0.938
The shopping site where I purchased the item displayed visually pleasing design.	0.879	
The shopping site where I purchased the item was visually appealing.		
The images and typographies used in the shopping sites where I purchased the item were stylish.	0.914 0.841	
The overall atmosphere and screen displays of the shopping sites where I purchased the item were well coordinated.	0.881	
It was pleasant to see the provided information on each screen of the shopping site where I purchased the item.	0.842	
Factor 4: Product involvement (adapted Zaichkowsky, 1994)		0.874
To me, the product(s) I purchased online is interesting.	0.816	
To me, the product(s) I purchased online is exciting.	0.845	
To me, the product(s) I purchased online is appealing.	0.897	
To me, the product(s) I purchased online is fascinating.	0.855	
Factor 5: Hedonic shopping value (adapted Babin et al., 1994; Griffin et al., 2000)		0.874
This online shopping experience was truly a joy during this hard time.	0.762	
I shopped online not because I had to, but because I wanted to.	0.621	
Compared to other things I could have done, the time spent online shopping was truly enjoyable.	0.844	
I enjoyed the online shopping for its own sake, not just for the items I may have purchased.	0.836	
During my online shopping, I felt the excitement of the hunt.	0.87	
While I was online shopping, I felt a sense of adventure.	0.773	
Factor 6: Perceived usefulness (adapted Davis et al., 1989)		0.883
Using the these product(s) I purchased online, I can improve my performance in life during the COVID-19 pandemic.	0.876	
Using the these product(s) I purchased online, I can increase my productivity during the COVID-19 pandemic.	0.847	
Using the these product(s) I purchased online, I can enhance my effectiveness in daily life during the COVID-19 pandemic.	0.904	
I would find product(s) I purchased online useful in my life during the COVID-19 pandemic.	0.817	
Factor 7: Perceived enjoyment (adapted Chang & Cheung, 2001)		0.907
My interaction with the product(s) purchased online during the COVID-19 pandemic is enjoyable.	0.924	

My interaction with product(s) purchased online during the COVID-19 pandemic is exciting.	0.914	
My interaction with product(s) purchased online during the COVID-19 pandemic is pleasant.	0.919	
Factor 7: Urge to buy impulsively (adapted Rook & Fisher, 1995)		0.929
During the COVID-19 pandemic, I had the urge to purchase items other than or in addition to my specific shopping goal.	0.921	
During the COVID-19 pandemic, I had a desire to buy items that did not pertain to my specific shopping goal.	0.945	
During the COVID-19 pandemic, I had the inclination to purchase items outside my specific shopping goal.	0.942	

For convergent validity, the average variance extracted (AVE) by each variable was confirmed. All variables satisfied the criteria of 0.50. In addition, the measure for the fit of each construct were run in a confirmatory factor analysis using Structural Equation Model. Overall, the runs showed good fit index for all constructs. See Table 2 & 3.

Table 2: Construct correlations and AVEs.

	AVE	PC	EV	WA	PI	HSV	PU	PE	IB
PC	**0.687**	**0.829**							
EV	**0.696**	0.002	**0.834**						
WA	**0.719**	0.114	0.739	**0.848**					
PI	**0.643**	0.087	0.431	0.437	**0.802**				
HSV	**0.554**	0.240	0.408	0.523	0.643	**0.745**			
PU	**0.661**	0.315	0.288	0.273	0.261	0.298	**0.813**		
PE	**0.767**	0.099	0.553	0.605	0.719	0.702	0.477	**0.876**	
IB	**0.816**	0.122	0.270	0.352	0.413	0.604	0.094	0.471	**0.903**

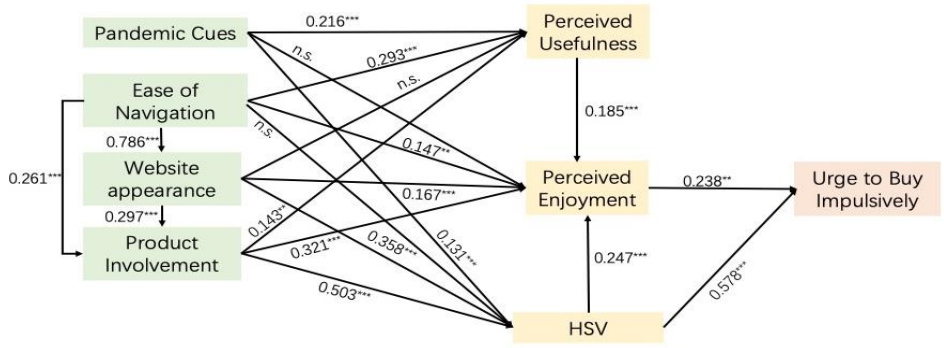
Table 3. Confirmatory factor analysis: construct validity test of variables

Model	χ2/df	GFI	AGFI	RMR	TLI	CFI	RMSEA	Cronbach's α
PC	-	-	-	-	-	-	-	0.852
WA	10.183	0.930	0.838	0.038	0.939	0.963	0.145	0.938
EV	30.033	0.832	0.609	0.066	0.811	0.887	0.257	0.934
PI	3.196	0.993	0.965	0.028	0.985	0.995	0.071	0.874
HSV	12.132	0.921	0.794	0.132	0.878	0.927	0.159	0.874
PU	12.911	0.974	0.868	0.057	0.927	0.976	0.165	0.883
PE	-	-	-	-	-	-	-	0.907
IB	-	-	-	-	-	-	-	0.929

4.2 Hypotheses Testing

To test the conceptual model and hypotheses, structural equation modeling (SEM) was used. The theoretical model fit indexes did not reach recommended levels: X2/Df =36.687, Goodness of fit Index (GFI = 0.818), Comparative Fit Index (CFI = 0.687) and Tucker-Lewis Fit Index (TLI =0.269), RMR = 0.258 and RMSEA with value of 0.285, were extremely low indicating the model did not correlate with expectations (Hair et al. 2016). Therefore, an alternative model was explored and tested using the modification index. The nested model proposes new relationships between ease of navigation to product involvement and website appearance, and website appearance to product involvement. The model rejects three relationships: pandemic cues to perceived enjoyment (H1b), ease of navigation to HSV (H2c), and website appearance to perceived usefulness (H3a), which coefficient paths were not significant. See Figure 2.

Figure. 2 Proposed Model



*****p < 0.001. **p < 0.01.**

A SEM multigroup analysis was used across dependent samples to test the invariance of the American and Chinese consumers to answer the research question. Overall, the fit index for the constrained model shows a better fit than the base model. In addition, the comparative chi-squared of the unconstrained model paths show some significant differences between the American and Chinese samples, indicating invariant measures and group differences. The path coefficients indicate that, among Americans, the influence of "ease of navigation" on "usefulness (ß= 0.153, p= 0.274), "web appearance" on "usefulness (ß= -0.198, p= 0.108), and "enjoyment" (ß= 0.098, p= 0.68) are not significantly. Whereas, on Chinese consumers, the effect of "ease of navigation" on "product involvement" (ß= 0.201, p= 0.100) was not significant.

Table 4. Fit Indexes and Chi-Squared Comparison

Measure	**Model-Based**	**Unconstrained Chinese vs Americans**	**Recommended Values**
X^2/ DF	2.63	82.74	< 3
p-value	p=0.002	<0.001	-
ΔX^2	-	80.11 (p=.002)	(Not Sig.)
GFI	0.947	-	>0.90
CFI	0.986	-	>0.90
TLI	0.967	0.009	>0.90
NFI	0.977	0.053	>0.90
RMSEA	0.061	-	<0.080

Note: Recommended values are based on Kline, R. B. (2005), Principles and Practice of Structural Equation Modeling.

Table 5. Parameter estimates for multi group analysis with un-constrained regression weights

		American			Chinese		
		Unstandardized		Stan-dardized	Unstandardized		Stan-dardized
		Estimate	SE		Estimate	SE	
H1a	PC>PU	0.149*	0.059	0.167	0.158***	0.030	0.251

H1b	PC>PE	-	-	-	-	-	-
H1c	PC>HSV	0.140***	0.043	0.164	0.099***	0.034	0.144
H2a	EN>PU	0.153	0.140	0.091	0.311***	0.087	0.279
H2b	EN>PE	0.098	0.054	0.079	0.270***	0.064	0.229
H2c	PE>HSV	-	-	-	-	-	-
H3a	WA>PU	-0.198	0.123	-0.136	0.348***	0.087	0.330
H3b	WB>PE	-	-	-	-	-	-
H3c	WB>HSV	0.370***	0.076	0.266	0.386***	0.061	0.335
H4a	PI>PU	0.312***	0.093	0.242	0.119*	0.047	0.131
H4b	PI>PE	0.534***	0.050	0.557	0.120*	0.050	0.124
H4c	PI>HSV	0.637***	0.067	0.517	0.437***	0.053	0.439
H5	PU>PE	0.152***	0.030	0.204	0.259***	0.057	0.245
H6	HSV>PE	0.174***	0.040	0.224	0.373***	0.052	0.386
H7	HSV>IB	0.541***	0.073	0.456	0.819***	0.067	0.625
H8	PE>IB	-	-	-	-	-	-

*** p-value is less than 0.001; **p-value is less than 0.01; * p-value is less than 0.05

The regression weights demonstrate that pandemic cues have a significant positive effect on "perceived usefulness" among Chinese (ß= 0.158, p <0.001) and Americans (ß= 0.149, p< 0.05); pandemic cues (PC) have a significant positive effect on HSV among Chinese consumers (ß= 0.099, p <0.01) and American consumers (ß= 0.140, p <0.01) as well. Thus, H1a and H1c are supported. "Website appearance" (WA) has a significant effect on HSV among samples from China (ß= 0.386, p <0.001) and samples from the U.S (ß= 0.370, p <0.001); therefore, H3c is supported. "Product involvement" (PI) significantly affects "perceived usefulness" (PU) among Chinese (ß= 0.119, p <0.05) and Americans (ß= 0.312, p <0.001); it also significantly affects "perceived enjoyment" (PE) among Chinese (ß= 0.120, p <0.05) and Americans (ß= 0.534, p <0.001). Product involvement (PI) has a significant effect on HSV among Chinese (ß= 0.437, p <0.001) and Americans (ß= 0.637, p <0.001). Thus, H4a, H4b, and H4c are supported. Perceived usefulness (PU) has a significant effect on perceived enjoyment (PE) among Chinese (ß= 0.259, p <0.001) and Americans (ß= 0.152, p <0.001); therefore, H5 is supported. HSV has a significant effect on perceived enjoyment (PE) among Chinese (ß= 0.373, p <0.001) and Americans (ß= 0.174, p <0.001), HSV also has a significant effect on urge to buy impulsively among Chinese (ß= 0.819, p <0.001) and Americans (ß= 0.541, p <0.001). Thus, H6, H7 is supported, while H1b, H2c, H3b, H8 are not supported.

5. Discussion

5.1 Conclusion

This study applies the S-O-R framework to investigate consumer impulsive behaviors while testing cross-national application of the extended model from Parboteeah et al. (2016) in the online shopping environment across the USA and China. This study also operates a multi-group analysis to explore group difference based on the proposed model. Overall, the results indicate HSV and perceived enjoyment were direct predictors of impulsive purchase behavior. The HSV was found to be a key mediator between all variables and impulsive behavior.

Additionally, the results showed a strong relation between pandemic cues, perceived usefulness, and hedonic shopping value. Even though the pandemic situations were different in USA and China during data collection, the influence of the COVID-19 pandemic cue on consumers' impulsive behavior was supported by a multigroup analysis cross-culturally. That is, although some differences are observed on the path coefficients, the model fit well in both countries with no significant differences produced by the change in the chi squared.

5.2 Theoretical Contributions

This study presents theoretical contributions for these results as follows: First, the study results emphasize that hedonic shopping value directly relates to impulsive purchase behavior in an unusual context, such as COVID-19 pandemic. Second, this study investigated the effects of product involvement to perceived usefulness, perceived enjoyment, and HSV. The result from Parboteeah and colleagues (2016) did not show significant relations between product involvement to perceived usefulness and enjoyment. This study not only confirmed these relations, but also supported a new relation of product involvement to HSV as well, and it concluded that product involvement positively affects hedonic and utilitarian experience with consumers in online context. Finally, congruent with Laato's and colleagues (2020) S-O-R framework, this study supports the assertion that relevant cues used as communication stimuli can explain unusual consumer behavior during the pandemic.

5.3 Limitations and Directions for Future Research

Despite the theoretical contributions of this study, there are several limitations. First, the data was collected online using different convenience sample techniques. As a result, the age group distribution was different across countries. Next, the model should test the invariance produced by a specific product category. Future research can focus on different product categories. Finally, the utilitarian shopping value was not included in the proposed model. Future research should explore its relationship with impulsive behavior during the Pandemic.

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