SOCIAL COMMUNITY, PERSONAL INVOLVEMENT AND PSYCHOLOGICAL PROCESSES: A STUDY OF IMPULSE BUYING IN THE ONLINE SHOPPING CARNIVAL

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ABSTRACT

The pomp of online shopping carnivals (OSC) and herein the frenzy of impulse buying (IB) have been extensively reported in media but received insufficient attention in academics. This study researched both the IB formation and enactment stages in "Double 11" OSC by conducting a large-scale online survey. Regarding the formation stage, consumers' social community and personal involvement were identified as significant factors in promoting the urge to buy impulsively (UBI) in the OSC. Specifically, consumers' OSC involvement appeared as their carnival experiences including participation, interaction, and pleasure; The social community consisted of their connections with e-commerce platforms, e-merchants, the media, net friends, close friends, and relatives during the OSC. Regarding the IB enactment stage, the cognitive evaluation revealed either a positive or negative effect on moderating the UBI-IB relationship via the direct path or the outcome expectancy-mediated path, respectively. Meanwhile, outcome expectancy exerted a dominant mediating effect on the UBI-IB relationship as the cognitive evaluation became sufficiently negative. These results yield valuable insights into 1) the distinguished preconditions of the OSC context facilitating consumers' impulse formation, 2) consumers' impulsive and reflective psychological processes behind the IB decision-making. This study also contributes substantially to IB theories and practical knowledge of OSC.

Keywords: Online shopping carnival; Impulse buying; Personal involvement; Social community; Reflective–impulsive model

1. Introduction

In China, the buzzword "Hands-chopping people" describes people who cannot restrain themselves from impulse buying (IB) but afterwards will regret the purchase so much that they almost wish to chop their hands for vigilance. This word gained considerable social attention and once became one of Chinese words [Xinhua 2015] owing to the annual online shopping carnival (OSC) —"Double 11" (also known as Single's Day). The "Double 11" has been generally regarded as the paradise for "hands-chopping people" because it incurred massive IB explosions among

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hundreds of millions of people every year. People took part in the OSC for good deals, but special discounts seemed not to be the only reason for the IB explosion of such a scale. To be specific, although steep discount (mostly 50%) used to be the main tactic in the initial period of "Double 11," the platforms and e-merchants had shrunk discount rates distinctly in recent years [Wu et al. 2016]. Many consumers also indicated that most offers in the "Double 11" OSC had lost appeal regarding the discounts or preferences. However, the renovating record volume of transactions year-on-year still showed the continuously rising enthusiasm and impulsiveness of "Double 11" consumers. Besides, although IB has been commonplace in both online and offline commerce, such massively exploded IB in "Double 11" is still a rather significant phenomenon in both the business field and people's daily life. Therefore, a more in-depth look into the consumers' IB set in the OSC (OSC-IB) may provide us with an excellent opportunity to better understand the antecedent factors and psychological mechanisms, and at the same time, benefit OSC practices and e-commerce operations.

The prevalence of OSC does not confine to China. "Black Friday" "Cyber Monday" and Amazon Prime Day are representative OSC prevalent worldwide other than "Double 11." While "Double 11," debuting in 2009, has become the largest OSC for its incomparable sales volume these years [Pham 2017; Custer 2014]. During the "Double 11" of 2018, merely on Alibaba's platforms, the sales record achieved RMB 213.5 billion ($30.8 billion) in gross merchandise volume [Alizila 2018] — far more than twice the combined sales of "Black Friday" and "Cyber Monday" in 2018 [Adobe 2018]. How could "Double 11" attain such an astonishing sales volume with such a short history? As commented by Coresight Research [2017], while American OSC and most commercial promotions still concerned mainly with pricing discounts, the "Double 11" had transferred the strategic focus to ritual marketing. The ritual marketing thought suggests that marketing campaigns can be packaged into shopping ceremonies to satisfy both the physical and spiritual needs of consumers [Fang 2011]. Shopping ceremonies could relieve people from routine life to a "carnivalistic life" where a new belief of carnivalism would come into being [Bakhtin 1984]. In this study, we endorsed this view and considered the carnival ritualistic manipulation to be a prerequisite for "Double 11" success. The "Double 11" OSC made the carnivalistic life perfectly realized by conducting a series of ritualizing strategies including incentivized gamification, Countdown Gala Celebration, raising carnival themes and signals, and enriching social interactions scenarios. A strategic analysis based on in-depth interviews with Alibaba senior managers suggested that the "Double 11" heavily exploited social network and incentivized gamifications to improve the marketing and sales [Wu et al. 2016]. It attests a basic view in ritual marketing thought, that is, the ritualistic manipulation takes desired effect on people who keep wide social contact and high event involvement for the specific case [Carey 2008; Fang 2011; Xu 2015]. During the "Double 11" OSC, consumers were led to construct their own social community with other stakeholders via multiple channels [Wu et al. 2016; Xu et al. 2017]. These social contacts laid the foundation for sharing and promoting the "OSC belief." Also, consumers were incentivized to join the specially designed carnival events; in such a condition, their OSC involvement could be manifested in return [Xu et al. 2017]. Thereupon, OSC consumers' participation in the social community and personal involvement could be two critical preconditions promoting their identification with the shopping ceremony and eventually breeding a specific ritualistic belief for the "Double 11."

Until now, only a few studies have paid attention to the OSC-IB. Akram et al. [2017] focused on OSC-IB factors of hedonic and utilitarian motivations, perceived usefulness and ease of use. Yan et al. [2016] identified OSC-IB factors like promotion, time pressure, social environment, and in-store slack. Zheng et al. [2013] confirmed that a prompt message of OSC frequency scarcity could increase IB. The above studies have come to a consensus that consumers' IB abounded in the OSC, but have primarily focused on the general factors undistinguished from other shopping contexts. In order to fill in this gap, a survey of OSC context-specific factors for IB is considered as a proper method in this study. Additionally, the psychological mechanism behind the OSC-IB is also stressed in this study. According to the reflective–impulsive model (RIM), consumer behaviors stem from the interplay between dual systems, i.e., the impulsive and reflective information processing systems [Hofmann et al. 2008; Hubert et al. 2013]. However, as for the psychological research surrounding IB, most studies concerned only about the irresistible forces or heuristic responses (impulsive system) [Liao et al. 2016; Dawson & Kim 2009]. While the reflective system of IB has been relatively ignored [Chan et al. 2017; Xiao & Nicholson 2013; Rook 1987]. Generally speaking, the rise of impulse does not necessarily lead to IB behaviors [Dholakia 2000]. During the "Double 11" OSC, almost every consumer had ample chance to experience a strong impulse to buy unplanned and unnecessary items, but many people still successfully resisted the impulse. Namely, Some OSC consumers were easily carried away by the impulse for the command of the impulsive system, while others were able to utilize the reflective system to curb their impulse and deliberate the IB decision in "Double 11" shopping. In this sense, the "Double 11" OSC provides us a great opportunity to investigate the dual system processing of consumers in the wake of impulse and thus compensate the existing IB psychological research. What is more, a clear understanding of when and how the reflective system thwarted the

impulse force could also contribute to marketing practitioners in better releasing consumers' urge and desire in the OSC.

In this study, we follow the classical consumption impulse formation and enactment (CIFE) model proposed by Dholakia [2000] and divide the entire IB execution into two successive stages, namely the impulse formation stage and IB enactment stage. For the impulse-formation stage, this work extends the situational factors of CIFE by searching into the influences of social community and personal involvement of OSC consumers. For the IB enactment stage, as the CIFE model suggests that consumers' cognitive evaluation and outcome expectancy may take effect in sequence to resist IB, this work validates the effects of these two psychological variables to disclose the processing of impulsive and reflective systems behind the OSC-IB.

2. Literature and Hypotheses

2.1. Online Shopping Carnival and Impulse Formation

Along with the "Double 11" OSC advancement, there has developed one school of thought in China about ritual marketing on the foundation of James Carey's ritual view of communication [Carey 2008]. A series of studies have confirmed the carnival ritualistic manipulation of "Double 11" by analyzing the propaganda elements and ceremony procedure design [e.g., Fang 2011; Liu 2013; Xu 2015]. Carey [2008] put forward five ritualistic elements for communication, that is, metaphor, characters, implications, function, and success criteria. As for the metaphor, the "Double 11" was originally endowed with the spirit of "shopping carnival"; as for the character, everyone could freely find his/her own role in the "Double 11"; as for the implication, a steady stream of merchandises served as the ritual instrument; as for the function, the "Double 11" made participants gather in one sphere to conduct the shopping ceremony across time; as for the success criteria of communication, consumers openly shared experience and formed a common belief for the "Double 11" [Liu 2013; Xu 2015]. In brief, social maintenance and belief sharing are the keys to conduct ritualistic communication [Carey 2008] and ritualizing the OSC [Fang 2011; Liu 2013; Xu 2015]. In consistent with the above works, this work regards the "Double 11" OSC as one typical application of ritual marketing. The "Double 11" distinguished itself from other one-day promotion campaigns by creating shopping ceremonies online and sharing a ritualistic belief among consumers, which emphasized the transaction value, the scarce opportunity, and the spiritual fulfilment brought about by "Double 11" shopping [Akram et al. 2017; Xu et al. 2017]. The carnival theory also suggested that the carnival scenery of OSC could free people from the sense of routine life to form a new carnivalistic belief about life [Bakhtin 1984; Xu et al. 2017]. Accordingly, we define such a ritualistic belief of OSC as shopping carnivalism, under which the OSC-IB becomes perfectly reasonable and sensible, and consumers' impulse could easily spiral out of control. Then a question naturally arises, that is, how exactly could the belief of shopping carnivalism be identified by individual consumers? The ritual marketing thought suggested that consumers' degree of socialization and activeness determined their susceptibility to the ritualistic manipulation [Carey 2008; Fang 2011; Xu 2015]. Accordingly, we infer that the "Double 11" OSC specific social community and personal involvement of individual consumers might affect the chance of their impulse being induced by the shopping carnivalism belief. In this work, we pay particular attention to the influences of these two factors in the impulse formation stage for the OSC-IB. Additionally, we adopt a commonly quoted notion, namely the urge to buy impulsively (UBI), to denote the sudden and powerful impulse that precedes and causes IB [Chan et al. 2017].

2.1.1. The Antecedent Effect of Social Community in the OSC

The OSC activities of consumers were no longer pure individual acts but social group acts correlating with multiple OSC stakeholders. During the "Double 11" OSC, consumers might interact with other consumers for sharing experience or participating in incentive games together, contact with the service staff, e-merchants, and logistics to obtain updates and services, and rely on the social media for access to information and knowledge. Such social interactions could impact, alone and together, on consumers' shopping ways in the OSC. In prior studies, Huang [2016] affirmed that consumers' peer communication was positively associated with their urge to buy in a social network; Suntornpithug and Khamalah [2010] proposed that both machine and person interactivity of the website could predict consumers' online purchase intentions; While Kervenoael et al. [2009] emphasized that the co-created social e-atmospherics by all stakeholders in the online channel was conducive to impulse buying. In this work, we also consider the ensemble of a consumer's social interaction ties during the OSC and adopt the concept of social community to generalize the entirety of the social ties. In terms of social capital theory, consumer's social community corresponds to the root of social capital [Nahapiet & Ghoshal 1998] where creative resources, emotional reliance, and shared beliefs could sprout up [Chen et al. 2015; Cummings & Dennis 2018; Huang 2016]. Accordingly, under the context of OSC, broader social community could expose more shopping stimuli to consumers [Huang 2016], lead them to experience more spiritual resonance and social identity [Williams 2006], and promote the common sense of collective symbols, beliefs, and norms of behavior [Chen et al. 2015, Kim & Park 2013]. Thereupon, the shopping carnivalism belief of OSC could spread across consumers' social community in forms of information, emotion, and

value, and eventually, drive consumers' urge or impulse. Thus, this work proposes that consumers' social community constituted by connections with other OSC stakeholders, i.e., e-commerce platforms, e-merchants, logistics, the media, net friends, close friends and relatives, relates positively with their UBI in the OSC.

H1: Consumers' social community in the OSC will positively affect their UBI.

2.1.2. The Antecedent Effect of Personal Involvement in the OSC

Numerous studies took in-store browsing as a precursor of offline IB behaviors [Beatty & Ferrell 1998; Jarboe & McDaniel 1987; Moe 2003]. Drawing upon flow theory [Hoffman & Novak 1996; Nel et al. 1999], when consumers are browsing intensively, they stand a good chance of experiencing the shopping involvement [Huang 2016; Hsul et al. 2011; Koufaris 2002], which implies high self-relevance and strong emotions with the products or the shopping events. Hence, shopping involvement can inspire great impulses on purchase [Huang et al. 2011; Koufaris 2002]. Actually, consumers' involvement could manifest itself in multiple activities during the purchase, such as resorting to others, seeking bargains, screening brands, and so on [Kassarjian 1981]. While under the OSC ceremony, certain activities could manifest customers' involvement with the OSC. In the light of carnival theory [Lensmire 1994], Xu et al. [2017] have generalized participation, interaction, and pleasure as three critical dimensions of OSC activities that could jointly determine a customer's OSC level. Participation stands for consumer's diverse personal OSC activities; interaction means consumer's interactive and collaborative events in the OSC; pleasure indexes the "fun and enjoyment" acquired from the OSC experience [Xu et al. 2017]. The three types of activities reveal consumers' attention, effort, and time spent in the OSC as well as their interests and importance attached to the OSC. Therefore, we believe that consumers' participation, interaction, and pleasure in the OSC could adequately represent their OSC involvement, signifying a match between consumers' intrinsic needs and values with the OSC [Zaichkowsky 1985]. Along this line of consideration, the deeper consumers were involved with the OSC, the more likely they would identify with the OSC ritualistic belief and indulge in the impulse of shopping carnivalism. Accordingly, we propose that the personal involvement of OSC consumers, with sub-dimensions of participation, interaction, and pleasure, could directly affect consumers' UBI.

H2: Consumers' personal involvement with the OSC will positively affect their UBI.

2.2. Psychological Processes and Impulse Buying Enactment

In IB research, the affinity between UBI and IB has been widely recognized [e.g., Beatty & Ferrell 1998; Huang 2016]. As a result, numerous studies used UBI as the surrogate measure of IB behavior [Liu et al. 2013; Wells et al., 2011] and overlooked the IB enactment, i.e., the transformation process from UBI into IB. These studies took IB as a heuristic and unreflective behavioral reaction to UBI and only highlighted the impulsive information processing behind the IB decision-making. However, according to the reflective-impulsive model (RIM), in consistent with other impulsive behaviors, IB is the joint outcome of both impulsive and reflective mental processes [Strack & Deutsch 2004]. The IB might result from deficient reflective system activation, or insufficient energy support for reflective system function, or dominated impulsive system activation [Hofmann et al. 2008; Hubert et al. 2013]. Anyhow, the reflective system could function more-or-less in the IB enactment. Dholakia [2000] presented CIFE model to elaborate on the psychological processes of IB enactment and resistance, as shown in Figure 1. According to the CIFE, after consumers' UBI being formed, potential constraining factors of IB will be evaluated automatically. Only when no constraining factor is identified, consumers will proceed to IB heuristically via the impulsive system. Otherwise, the cognitive evaluation and volitional system will be triggered successively to control the UBI and interfere with the IB enactment. Specifically, regarding the reflective processing of IB, the result of cognitive evaluation decides either the IB implement or the activation of the volitional system. Subsequently, if the volitional system comes into play, the outcome expectancy determines the resources for the volitional capacity and the success of impulse resistance [Dholakia 2000]. Therefore, this paper makes further investigation into the interplay between the dual systems on IB by analyzing the two crucial evaluative processes, i.e., cognitive evaluation and outcome expectancy, in IB enactment, thus advancing the exploration of the psychological mechanism behind IB decision-making.

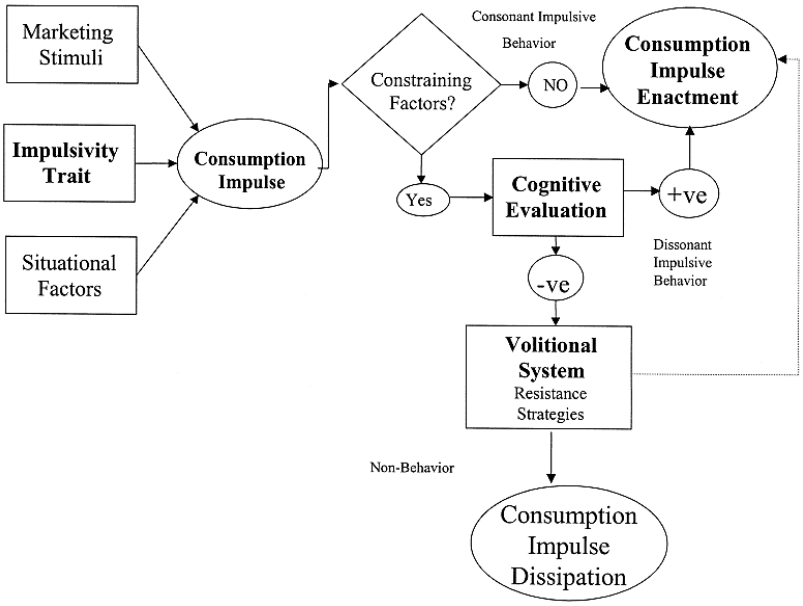


Figure 1: The CIFE Model [Dholakia 2000]

2.2.1. The Moderating Effect of Cognitive Evaluation

The cognitive evaluation refers to consumers' judgement about the pros and cons of IB in particular situations and was initially presented as normative evaluation [Dholakia 2000; Rook & Fisher 1995]. According to Rook & Fisher [1995], a normative evaluation may occur during the temporal delay between UBI and IB and moderate the UBI-IB relationship. Under positive evaluations, the UBI should result in IB directly for no normative constraint being identified. While under negative evaluations, the effect of UBI on IB will be mitigated for concern about normative discouragement. However, Dholakia [2000] replicated the experiment scenario but got a contrary result, i.e., a negative interaction of cognitive evaluation and consumers' impulsiveness on IB. In regard to CIFE, constraints evaluation and cognitive evaluation were separated as two successive processes for IB enactment. However, in a broad sense, the evaluation of constraining factors, including perceive current impediments, consider long-term deleterious consequences, and generate anticipatory emotions [Dholakia 2000], are also part of the situation-specific appropriateness judgement for IB. Hence, this work considers the cognitive evaluation as an evaluative process in IB enactment starting immediately from the impulse feeling to reaching a judgement about IB. When the IB is judged to be consonant and acceptable, the cognitive evaluation should be positive, otherwise negative. Furthermore, according to the finding of Rook & Fisher [1995] as well as the CIFE model, we agree that UBI would exert a significant effect on IB [Beatty & Ferrell 1998; Verhagen & Van Dolen 2011]. Then, when consumers evaluate the IB to be positive, the effect of UBI will not be impeded, and the enactment is likely to go forward smoothly. On the contrary, the negative evaluations would enable the volitional system to resist UBI and postpone the IB enactment [Bayley & Nancarrow 1998; Xiao & Nicholson 2013]. With attempts to reveal the functional condition of the impulsive and reflective psychological processes in IB enactment and to explain the divergence between Rook & Fisher [1995] and Dholakia [2000], this study forecasts a positive moderating effect of cognitive evaluation on UBI and IB relationship. Hypotheses are formulated as:

H3: Consumers' UBI positively affects their IB.

H4: The cognitive evaluation moderates the relationship between UBI and IB, such that the relationship is stronger when the cognitive evaluation is more positive.

2.2.2. The Mediating Effect of Outcome Expectancy

In the reflective processing of IB enactment, the volitional system switches on upon cognitive evaluation and plays the key role in countering the UBI by harnessing various resistance strategies [Dholakia 2000]. In reference to the volitional system's mechanism, although the impulse-resistance role can be achieved by applying various individuals or sets of strategies, the capacity for resistance is determined by outcome-expectancy evaluation [Dholakia 2000]. The general outcome expectancy refers to peoples' judgment about the likelihood of reducing perceived discrepancies from current behavioral states to their goals or standards [Rotter 1954; Scheier & Carver 1985]. It was suggested to influence peoples' subsequent performances in accomplishing their objectives [Armor & Taylor 1998; Carver & Scheier 1990]. In Dholakia's [2000] study, a specific outcome expectancy was defined as consumers'

perceived likelihood of success in resisting the UBI and was supposed to operate on energizing the volition system. Authenticating the effect of outcome expectancy helps to validate the volitional system function in IB enactment. First, the expectancy is directly affected by the UBI strength [Dholakia 2000]. Under strong UBI, consumers would be more reluctant to abandon the temptation, and their outcome expectancy would be more unfavorable than might otherwise be the case. Then, the evaluation of outcome expectancy determines the resources available for the volitional resistance and predicts the final IB decision [Dholakia 2000]. When the outcome expectancy is sufficiently favorable, the resistance of the volitional system continues to impulse dissipation. Rather, unfavorable outcome expectancy attenuates the IB resistance and results in IB enactment [Armor & Taylor 1998; Scheier & Carver 1985]. Hence, the outcome expectancy shows a mediating effect on UBI and IB relationship. We develop the hypothesis as:

H5: The outcome expectancy mediates the relationship between UBI and IB, and it negatively relates to both UBI and IB.

Furthermore, besides the UBI, the outcome expectancy is also influenced by the valence of cognitive evaluation [Dholakia 2000]. More specifically, only under negative IB evaluations, UBI could determine whether favorable or unfavorable outcome expectancies. Whereas, under positive IB evaluations, consumers would rarely invoke the volitional system no matter the UBI is strong or weak. Thus, the UBI loses influence in driving the outcome-expectancy evaluation so that the mediating effect of outcome expectancy would fade away. Accordingly, cognitive evaluation could moderate the mediation of outcome expectancy between UBI and IB by influencing the correlation between UBI and outcome expectancy. We develop the hypothesis as:

H6: The cognitive evaluation moderates the mediation of outcome expectancy on the relationship between UBI and IB, such that the mediating effect is weaker when the cognitive evaluation is more positive.

2.3. Research Model

The research model in Figure 2 presents the hypothetical causalities and correlations in the formation and enactment stages of consumers' OSC-IB. First, Consumers' social community (SC) and personal involvement (PI) are designated as two important antecedents in the formation of UBI accrue to the OSC context. Consumers' connections with e-commerce platforms, e-merchants, logistics, the media, net friends, close friends and relatives capture different aspects of SC in the OSC context and thus serve as formative indicators of SC construct [Petter et al. 2007]. Next, the three dimensions of PI, namely participation (Pa), interaction (In), and pleasure (Pl), are neither covariant nor interchangeable [Petter et al. 2007; Xu et al. 2017]. Accordingly, we model PI as a formative second-order construct composed of the three sub-constructs mentioned above. Second, in order to embody the IB enactment, the model delineates a moderated mediation effect on the relationship between UBI and IB with cognitive evaluation (CE) as the moderator and outcome expectancy (OE) as the mediator. At last, we include three commonly cited consumer traits, i.e., gender, age, the impulse buying tendency (IBT), as control variables that might impact on the UBI formation and IB enactment [Badgaiyan & Verma 2015; Floh & Madlberger 2013; Huang 2016].

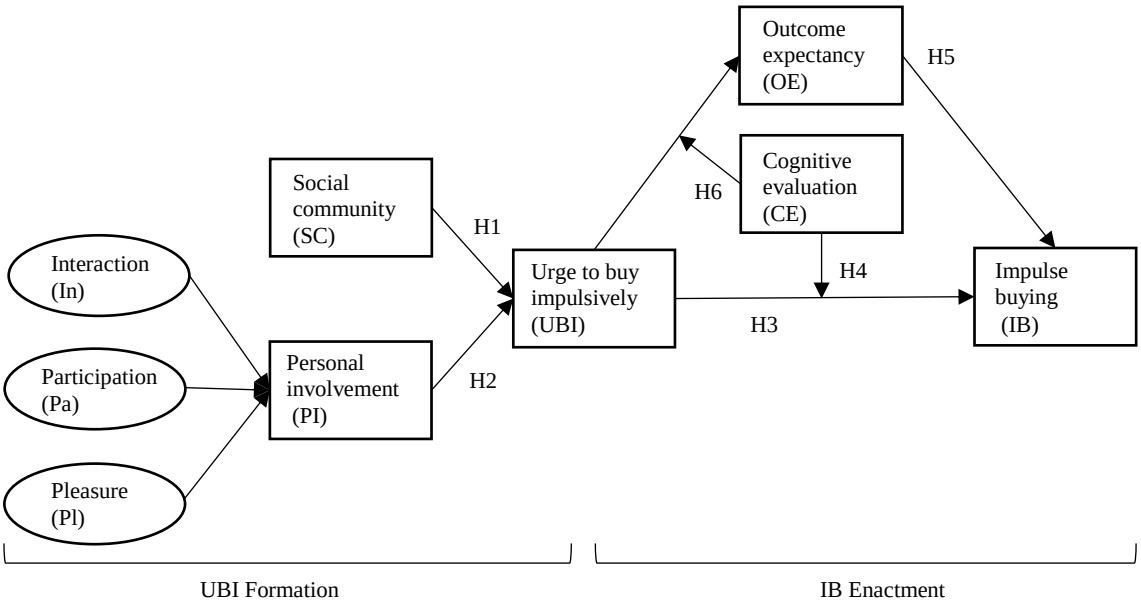


Figure 2: Research Model

3. Method

3.1. Measures

The study initiated designing the measurement of variables by searching validated instruments and definitions in the extant literature. For existing constructs (UBI, IB, In, Pa, Pl, IBT, and CE), we discerned items and fragments from mature scales and modified them according to the OSC context appropriately. For constructs without ready-made scales (OE and SC), new items were modestly developed according to their theoretical connotations. Notably, except for the formative items of the social community, a global item that generalizes the OSC social community was developed for assessing the property of this formative construct. Beyond developing measures from existing literature, we conducted focus group interviews to inspect whether the measurements effectively captured desired implications and covered the whole domains of constructs. As a result of group interviews, no additional items were required, and the preliminary item regarding the logistics in social community construct was removed from the scale. Logistics issues happened after ordering, and thus, consumers would hardly deem the connection with logistics as an element of the social community during OSC shopping. Following this, we employed content validity assessment on remaining items using the procedure of Hinkin & Tracey [1999] with the help of sixteen experienced consumers. What is more, we also conducted pre-tests to ensure the completeness and appropriateness of the scale with a panel of twelve academic and practical specialists. In consequence, while maintaining adequate measurement properties, we curtailed redundant items and modified ambiguous semantics and wordings to keep the scale precise and efficient. The appendix presents the complete list of items used in the final version of the questionnaire.

3.2. Sample and Data Collection

We built the electronic questionnaire on a professional online survey platform called Wenjuanxing (https://www.wjx.cn/). The content of the questionnaire fell into two parts. The first part collected participants' demographic data, which would serve as control variables in model testing. The second part formulated the constructs' items with a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Links of the questionnaire along with explanatory texts were disseminated on several sizable social networking sites from November 12 to November 14, 2018, immediately after the "Double 11" event. We anticipated sample size of about 500 (only "Double 11" online shoppers were counted) to ensure statistical power and external validity. However, as we were not able to estimate the actual "Double 11" participation rates in the websites accurately, we made the best effort to increase the accessibility and engagement of our survey. Besides, we inquired participants about their "Double 11" shopping experience in the questionnaire to sort out the participants who had accomplished the purchase in the "Double 11." In the end, 1493 people participated in the survey, and 742 had accomplished "Double 11" online shopping. Further, 62 participants were excluded for either wrong answers of attention check question (choosing the right answer of the "Double 11" OSC day from seven options), or same-direction scores in scales with reverse coded items, or abnormal completion time. The remaining valid 689 participants had an average age of 25.3 years and were 68.2 percent female. The age and sex distributions of the sample were close to the Chinese online shoppers' distribution in 2018 [China Internet Network Information Center 2018]. Thus, we believe that the sample is representative of this particular study.

3.3. Data Analysis Methods

This study used structural equation modeling (SEM) to evaluate the fit of the research model and test the validity of the hypotheses. To be specific, the partial least squares SEM (PLS-SEM) was selected considering that PLS-SEM works efficiently with complex models, makes no assumptions about sample distribution [Gefen et al. 2000], and most importantly, could handle both reflective and formative measurement models [Chin 1998]. SmartPLS 3.0 was employed to examine the quality of the measurement model and test the relationships in the structural model. Notably, reflective and formative measurement models own different evaluation criteria and thus should be discussed separately.

4. Data Analysis and Results

4.1. Measurement Validity and Reliability

4.1.1. Reflective Measurement Properties

The critical criteria of reflective measurement properties includes composite reliability, indicator reliability, convergent validity, and discriminant validity. First, to achieve internal consistency reliability, composite reliability should be higher than 0.707 [Bagozzi & Yi 1988], and Cronbach's alpha should be higher than 0.6 [Nunnally 1978]. Then, to ensure indicator reliability [Straub 1989] and convergent validity [Fornell & Larcker 1981], the indicator's outer loadings should be higher than 0.707, and the average variance explained (AVE) should be higher than 0.50. In addition, discriminant validity is achieved when the square root of AVE of each construct is higher than its highest correlation with other constructs [Fornell & Larcker 1981]. According to the result of running the PLS Algorithm of SmartPLS 3.0, all factor loadings are over the threshold except that the PI construct has three indicators with loadings

slightly below 0.707. Since the composite reliability (0.909) and AVE (0.528) of PI are well above critical values, showing solid internal consistency reliability and convergent validity, the three indicators of PI are retained. As Table 1 shows, the values of Cronbach's alpha, composite reliability, and AVE are all over the thresholds. The square root of AVE of each construct is also higher than its correlations with other constructs (there is no need to consider the discriminant validity between PI and its sub-constructs for their conceptual and operational dependencies [Hair et al. 2017]). The results qualify a satisfactory fit for the reflective measurement model.

Table 1: Test Results for Reflective Construct Measures

	PI	In	Pa	Pl	UBI	OE	CE	IB	IBT
PI	0.726								
In	0.843	0.905							
Pa	0.865	0.593	0.849						
Pl	0.816	0.491	0.605	0.833					
UBI	0.414	0.344	0.345	0.356	0.886				
OE	0.44	0.399	0.355	0.353	0.619	0.842			
CE	0.264	0.281	0.214	0.162	0.373	0.543	0.85		
IB	0.388	0.38	0.34	0.251	0.565	0.764	0.559	0.898	
IBT	0.509	0.331	0.565	0.422	0.583	0.47	0.235	0.713	0.904
AVE	0.528	0.819	0.721	0.694	0.785	0.709	0.722	0.807	0.787
Cronbach's Alpha	0.887	0.889	0.803	0.779	0.862	0.896	0.809	0.92	0.831
composite reliability	0.909	0.931	0.885	0.872	0.916	0.924	0.886	0.944	0.91

4.1.2. Formative Measurement Properties

The formative measurement model assessment focuses on whether each indicator exclusively contributes to the focal construct. First, based on redundancy analysis [Chin 1998], the correlation between a formative construct with its reflective measure should be higher than 0.80 in order to support the convergent validity. Accordingly, we created a model with the formatively measured SC construct as an exogenous variable and its global item as an endogenous variable. As a result, the path coefficient turns out to be 0.891 and thus affirms the convergent validity of SC. Next, to ensure no collinearity issues among formative indicators, the value of variance inflation factor (VIF) should not exceed 4.0 [Hair et al. 2017]. At last, an indicator's relative and absolute contributions to the construct hinge on the significance of its outer weight and the value of its outer loading, respectively. When either an indicator's weight is significant, or its loading value is higher than 0.50, the indicator should remain in the model [Hair et al. 2017]. Table 2 presents the testing results obtained from running the bootstrapping procedure and the PLS Algorithm of SmartPLS 3.0. All VIF values are under 4.0, indicating no collinearity issue. All indicators demonstrate significant outer weights other than SCf_2, who has a nonsignificant weight. However, as the loading value (0.693) is higher than 0.5, SCf_2 is finally retained in the measurement model.

Table 2: Test Results for Formative Indicators of Social Community Construct

	Scf_1	Scf_2	Scf_3	Scf_4	Scf_5
Weight	0.432**	0.047ns	0.315**	0.471***	0.358**
Loading	0.745***	0.693***	0.707***	0.817***	0.726***
VIF	2.282	1.106	1.931	1.419	1.343

Note: *p < 0.05, ** p < 0.01, *** p < 0.001, ns-not significant.

4.1.3. Common Method Bias

It is necessary to assess the common method bias (CMB) in this study because the self-reported survey yielded data of independent and dependent variables from the same informant and changeless contexts. We conducted Harmon's one-factor test on the six main constructs in the research model [MacKenzie et al. 2005]. The result generates five principal factors which show eigenvalues greater than 1.0 and account for 56.2% of the total variance. The first factor explains 29.18% covariance in the data. This result indicates that CMB would not contaminate the research findings.

4.2. Structural Model Evaluation

4.2.1. Collinearity Diagnostics

Before assessing the causal relationships in the structural model, we computed VIF values of predictor constructs in each set to check the collinearity issue [Diamantopoulos & Winklhofer 2001]. As set forth, a VIF value greater than

4.0 indicates the collinearity in the model. Table 3 shows that all the resultant VIF values are under the threshold. Therefore, there was not a collinearity problem within the estimation of the path model.

Table 3: VIF Values on Sets of Predictor Constructs

	Predictor construct	VIF
PI	In	2.012
	Pa	1.931
	Pl	1.848
UBI	PI	1.633
	SC	1.633
IB	UBI	1.872
	CE	1.952
	OE	2.830

4.2.2. Antecedent Effects Test

We utilize the PLS Algorithm to get the path coefficients and explained variances (R^2 values) for the structural model and the bootstrapping procedure to examine the significance of path coefficients. The test began by assessing a base model without the mediator. Figure 3 presents the main effects of SC and PI on UBI and the simple effects of UBI, CE, and CE×UBI (the interaction of CE and UBI) on IB. According to the results, PI as a formative second-order construct is effectively measured with three sub-constructs, namely, In ($\beta = 0.436$, $p < 0.001$), Pa ($\beta = 0.393$, $p < 0.001$), and Pl ($\beta = 0.358$, $p < 0.001$). Both direct effects drawn from SC and PI to UBI are confirmed by significant path coefficients ($\beta = 0.303$, $p < 0.001$; $\beta = 0.457$, $p < 0.001$, respectively). Moreover, the two antecedents jointly explain 42.7 percent of the variance in UBI, thus showing a moderate level of predictive accuracy [Henseler et al. 2009]. These results support hypotheses H1, H2 regarding the main effects of social community and personal involvement on consumers' UBI.

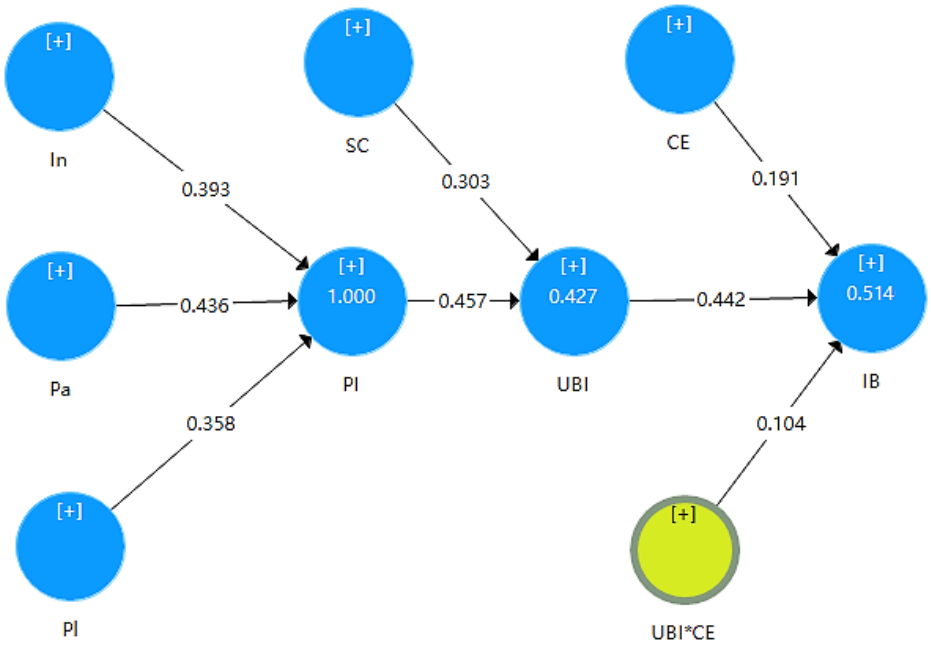


Figure 3: Main Effects and Simple Effects in Structural Model

4.2.3. Moderation and Mediation Tests

The coefficient of UBI-IB path ($\beta = 0.442$, $p < 0.001$), as shown in Figure 3, supports the hypothesis H3 that UBI exerted a significant and positive effect on IB. The CE×UBI term also shows a significant correlation with IB ($\beta = 0.104$, $p < 0.05$) and contributes to explaining 3.3 percent of IB variance ($\triangle R_{adj} = 0.033$, $p < 0.001$). Thus, hypothesis H4 is preliminarily supported. In addition, the moderation model explains 51.4 percent of the total variance and thus shows a moderate explanatory power for consumers' IB. In order to facilitate the interpretation of CE's moderating

effect, we conducted simple slopes analysis according to Aiken & West [1991] and plotted the interaction effect graphically, as in Figure 4. The positive and negative CE values were calculated by adding and subtracting one standard deviation from the mean, respectively. Then, we examined whether the slopes for the lines constructed on IB versus UBI at the positive and negative levels of CE differed from zero and each other. It is revealed that UBI's positive effect on IB is significant for either positive ($\beta = 0.586$, $p < 0.001$) or negative CE level ($\beta = 0.378$, $p < 0.001$), and the former is significantly stronger ($t = 2.06$; $p < 0.05$). Thus, hypothesis H4 is well verified. We conclude that the positive effect of UBI on IB is stronger when CE is more positive.

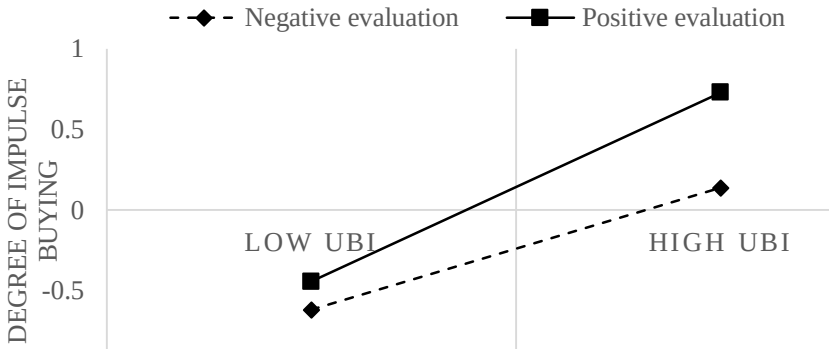


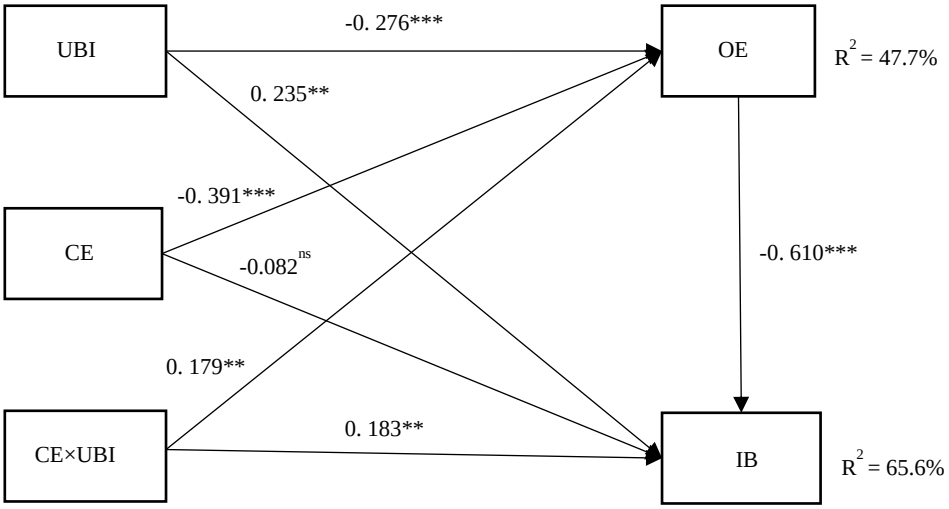
Figure 4: Interaction between Cognitive Evaluation and UBI on IB

Afterwards, we left out the moderator and investigated OE's mediation on the UBI-IB relationship following the procedure of Preacher & Hayes [2008]. As a result, all the path coefficients in the mediation model are significant ($\beta = -0.225$, $p < 0.01$ for UBI to OE; $\beta = -0.593$, $p < 0.001$ for OE to IB; $\beta = 0.290$, $p < 0.001$ for UBI to IB). Then, we checked the significance of indirect effect by testing the product of UBI-OE and OE-IB path coefficients (by dividing the product value by its bootstrapping standard errors with Microsoft Excel. Details please refer to Hair et al. [2017]). However, it appears to be not significant for the indirect effect ($t = 1.75$, $p = 0.081$). Hence, we did not accept the hypothesis H5 that OE mediates the UBI-IB relationship, although OE shows significant negative correlations with both UBI and IB.

4.2.4. Moderated Mediation Effect Test

At last, we conducted the moderated mediation analysis. Figure 5 illustrates the model with the simple effects of UBI, CE, and CE×UBI on both OE and IB as well as the direct effect of OE on IB. It shows that all direct paths are significant except for the CE-IB path ($\beta = -0.082$, $p = 0.07$). This model explains 47.7 percent of OE variance and 65.6 percent of IB variance. The CE moderates both the relationships of UBI with IB and with OE judged from the significant paths from CE×UBI to IB ($\beta = 0.183$, $p < 0.01$) and to OE ($\beta = 0.179$, $p < 0.01$) respectively. We further explored CE's moderation on the UBI-OE relationship. As Figure 6 exhibits, UBI shows negative correlations with OE in visual inspection. While the correlation is significant at the negative level of CE with a slope of -0.455 ($t = 4.58$, $p < 0.001$) but not significant at the positive level ($t = 1.63$, $p = 0.103$). It affirms that CE moderates the UBI-OE relationship such that the negative effect of UBI on OE gets significant only for negative CE. Further, we investigated the moderated mediation effect by assessing OE's mediations on the UBI-IB relationship at positive, moderate, and negative levels of CE. When CE is positive (one standard deviation above the mean), the OE's mediation is not significant ($t = 1.84$, $p = 0.066$); When CE is at the mean, the indirect path is significant with a coefficient of 0.168 ($t = 2.77$, $p < 0.01$) and OE mediates 41.7 percent of UBI's total effect on IB; When CE is negative (one standard deviation below the mean), the indirect path is significant with a coefficient of 0.278 ($t = 6.06$, $p < 0.001$) and OE mediates 83.4 percent of the total effect. Briefly, OE's mediation on the UBI-IB relationship greatly enlarges from zero as CE turns into negative from positive. This result well supports hypothesis H6.

In addition, in order to investigate thoroughly on CE's moderating effect, we analyzed both the indirect moderation via the mediation path and the direct moderation on the UBI-IB relationship in the moderated mediation model. With reference to Hair et al. [2017], the product of coefficients of paths from CE×UBI to OE and from OE to IB turns out to be significant with a value of -0.109 ($t = 3.11$; $p < 0.01$). This result corroborates a negative effect of CE on moderating the UBI-IB relationship via OE. Meanwhile, the direct moderation of CE on the UBI-IB relationship shows a positive effect ($\beta = 0.183$, $p < 0.01$).



Note: *p < 0.05, ** p < 0.01, *** p < 0.001, ns-not significant.

Figure 5: Simple Effects in Moderated Mediation Model

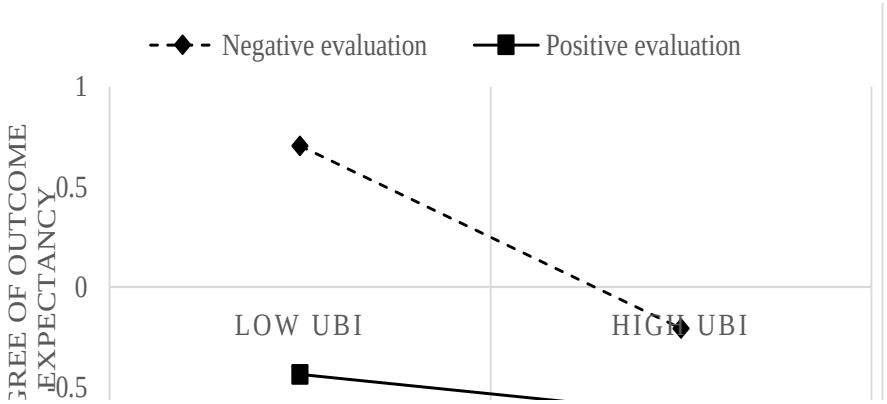


Figure 6. Interaction between Cognitive Evaluation and UBI on Outcome Expectancy

4.2.5. Robustness check on control variables

As the final step, we tested the robustness of results by including age, gender, and IBT as control variables into analysis. Each of the previous analyzing steps was re-run with regressing both UBI and IB on the control variables. As a result, all previous findings were further validated. The hypotheses except for H5 about OE's mediation were supported again with parameter estimates altering marginally. Moreover, the control variables show different effects on UBI and IB separately. IBT correlates positively with both UBI ($\beta = 0.285$, $p < 0.001$) and IB ($\beta = 0.111$, $p < 0.05$). Age and gender cause little variation in UBI and IB except that gender (assigning 1 for females and 0 for males) marginally affects IB ($\beta = 0.096$, $p = 0.05$). In the extended model including the control variables, the adjusted R^2 values for UBI and IB are not distinctly different from the R^2 values in original model ($\triangle R_{adj} = 0.003$, $p = 0.164$ for UBI; $\triangle R_{adj} = 0.002$, $p = 0.270$ for IB).

5. Discussion and Conclusion

5.1. Discussion of Findings

As for the impulse formation in the OSC context, this study verified the social community and personal involvement as the important factors for UBI. In this work, we considered that the "Double 11" OSC mobilized the social mass to join the shopping ceremony, whose members shared a specific ritualistic belief, i.e., shopping carnivalism. This belief freed consumers from routine shopping habits and endowed the OSC-IB with sufficient legitimacy. Thus, once consumers fitted into the shopping ceremony and accepted the shopping carnivalism belief, they stood a great chance of being induced to IB. The discovery of social community and personal involvement as two noteworthy antecedents of UBI could well illustrate how the carnival ritualistic manipulation of OSC raised

individual consumers' impulse. As one UBI factor, the social community was ascertained to comprise consumers' connections with other OSC stakeholders, including e-commerce platforms, e-merchants, the media, net friends, close friends and relatives. These connections accommodated consumers with informational, emotional, and normative supports for embracing the shopping carnivalism belief. First, the basis of belief sharing was information communication. The social community involved all informational resources where consumers could be exposed to the persuasion of shopping carnivalism in the OSC. Next, the ritual belief could affect consumers emotionally. The spiritual resonance and coordination with the social community by acceding to shopping carnivalism could bring great enjoyment to consumers. Finally, ritual belief's influence also depended on normative encouragement. The social community could lead consumers to perceive public endorsements and social approvals for the shopping carnivalism. On the whole, the OSC social community could facilitate consumers to accept the shopping carnivalism belief to a large extent. As another UBI factor, personal involvement was manifested to be delivered through three types of OSC activities, that is, participation, interaction, and pleasure. Consumers' participation activities revealed their investment of time and energy into OSC events. The interaction process revealed senses of assimilation and belonging gained from the OSC context. The pleasure revealed consumers' emotional attachment to the OSC. These OSC activities jointly stood for consumers' self-relevance not only with the products and purchase opportunities in the OSC but also with the OSC ritual scenery. When consumers devoted largely to completing the OSC activities, they would approach great personal involvement with the OSC and thus generate intrinsic identity with the ritual belief of shopping carnivalism. In short, through either a broad social community or high personal involvement, OSC consumers would easily acknowledge and internalize the ritual belief and then evoke the UBI under the faith in shopping carnivalism.

As for the IB enactment, cognitive evaluation and outcome expectancy were verified as two significant factors in affecting the relationship between UBI and IB. According to the CIFE model, cognitive evaluation and outcome expectancy played the key roles in IB deliberation and UBI resistance. Hence, this study supposed that UBI's effect and the two variables' effects on IB corresponded to the functional mechanisms of the impulsive and reflective systems behind the OSC-IB, respectively. Drew from the results, three main findings have been highlighted in this paper. First, the positive effect of UBI on IB kept significant when either cognitive evaluation or outcome expectancy was concerned. This result declared a substantial and intrinsic force of the impulsive system in IB enactment. Second, outcome expectancy correlated with both UBI and IB negatively, and its mediation converted to significant effect from insignificance when cognitive evaluation turned into negative. This result demonstrated that consumers proceeded in reflective information processing only when they had evaluated IB to be negative; otherwise, the IB enactment would be dominated by the force of impulsive system and went forward heuristically. These findings largely concurred with the RIM theory, which suggests that reflective and impulsive systems would elicit behavioral schemata of mutual restraint. Only when the schema in a system activates and exceeds the threshold can this system affect behaviors [Strack & Deutsch 2004]. Accordingly, this work discerned UBI as the schema of impulsive system, which kept active above the threshold once formed [Vohs 2006]. While the volitional resistance manifested as the schema of reflective system which rested below the activation level until it was called up by favorable outcome expectancy. Besides, the cognitive evaluation might function as a boundary condition for the two systems. Positive evaluations cut off the process of the reflective system into the outcome-expectancy evaluation. Thus, the impulsive system could guide the IB behavior exclusively. However, when the cognitive evaluations were negative, the outcome expectancy would be enabled to serve the impulse resistance schema in the reflective system; that is, the impulsive system would recede, and the reflective system came into play on the IB enactment. In sum, the effects of UBI, cognitive evaluation, and outcome expectancy on IB well illustrated how the impulsive and reflective systems conjointly and competitively affected the OSC-IB [Hofmann et al. 2008; Hubert et al. 2013]. Last but not least, this study further investigated cognitive evaluation' moderation on the UBI-IB relationship and revealed an overall positive effect. While in the moderated mediation model, cognitive evaluation produced a negative effect via the outcome expectancy-mediated path and a positive effect via the direct path on moderating the UBI-IB relationship. Therefore, it could be viewed that the valence of cognitive evaluation's total moderating effect might depend on whether the direct effect or the indirect effect on the UBI-IB relationship had a larger magnitude. Notably, the magnitude of cognitive evaluation's indirect moderation was determined by both the effect of CE×UBI on outcome expectancy and the effect of outcome expectancy on IB. Combined with the view of RIM, this result also suggested that negative cognitive evaluations restrained the impulsive system and meanwhile activated the processing of the reflective system during IB enactment.

5.2. Implications for Theory

Though consumers' IB had been substantially studied for decades, the prevalence of OSC in recent years has brought both new challenges and opportunities for IB research as it incurred extraordinary impulses on purchase for either individual consumers or the whole society. However, until now, only a small body of studies have concerned the OSC-IB and they have left out the OSC context-specific factors for IB, which are the key to understand the particularity of OSC in triggering consumers' impulsiveness. In this work, through integrating the ritual marketing

thought into the situation analysis of "Double 11" OSC, this paper shed light on the essential elements of OSC in stimulating incomparable IB behaviors. Important implications for OSC investigation and IB research could be drawn from three levels. First, this work offered theoretical explanations on the particularity of OSC in involving and controlling consumers. By introducing the ritual marketing thought, this work suggested that the "Double 11" distinguished itself from general promotion campaigns by creating a shopping ceremony online and preaching a ritual belief of shopping carnivalism to manipulate consumers' attitudes and intentions to purchase. In brief, we presented a viewpoint that the IB explosion in the "Double 11" OSC largely resulted from the permeation of the shopping carnivalism belief among consumers. Second, based on the ritual marketing thought, we generalized the social community and personal involvement as two preconditions for OSC consumers to identify and comply with the shopping carnivalism belief. Our verification of the two significant UBI factors provided empirical supports for the idea drawn from the ritual marketing thought. Finally, we discerned six types of social characters to constitute consumers' OSC social community according to the OSC stakeholders list of Liu [2015], and verified three dimensions of OSC activities to jointly reflect consumers' OSC involvement based on carnival theory [Lensmire 1994; Xu et al. 2017]. Through conceptualizing and discerning the components of the two UBI factors, this work enriched the connotation and enhanced the theoretical framework of the ritual marketing thought for OSC analysis. In conclusion, the application of ritual marketing thought, and the establishment of the social community and personal involvement as UBI factors in the OSC context largely compensated the studies on the OSC-IB and simultaneously provided new angles for IB research.

Regarding the IB enactment, the study validated the effects of cognitive evaluation and outcome expectancy proposed in the CIFE model [Dholakia 2000] and documented the processing of both reflective and impulsive systems in IB decision-making. Two main theoretical contributions have been made in this study. First, this study complemented the RIM theory in predicting IB behaviors. We suggested that the direct effect of UBI on IB incarnated the activation level of the impulsive system, while the mediation of outcome expectancy corresponded to the reflective system on account that outcome expectancy served volitional and regulatory goals. The finding that outcome expectancy's mediation on the UBI-IB relationship fluctuated along with cognitive evaluation identified with the fundamentals of RIM that the dual systems operate in parallel as well as of mutual restraint to drive behaviors [Hubert et al. 2013; Strack & Deutsch 2004; Vohs 2006]. Besides, former studies suggested that it is crucial for RIM research to ascertain the boundary condition, which denotes the relative contributions of the two systems to behavioral consequences [Hofmann et al. 2008; Vohs & Faber 2007]. In this study, we observed one tentative evidence that the cognitive evaluation might serve as a boundary condition for the RIM because it tipped the balance of the two systems in dominating the IB enactment. Second, this study differentiated conditions where the cognitive evaluation moderated the UBI-IB relationship dissimilarly. Rook & Fisher [1995] and Dholakia [2000] had discovered opposite effects of cognitive evaluation on moderating the impulse-IB correlation. Our findings offered a possible interpretation for this inconsistency. In this study, cognitive evaluation's moderation revealed a positive effect on direct UBI-IB path and a negative effect on the indirect path through outcome expectancy in the moderated mediation model. It implied that positive cognitive evaluations facilitated the direct evolution of UBI into IB but reduced the chance of UBI turning into IB through the reflective processing. In either our study or the study of Rook & Fisher [1995], the overall positive effect of moderation could be owing to the dominance of impulsive processing in IB enactment (as in most cases). While the overall negative moderating effect in Dholakia's [2000] might be due to the strong volitional resistance in the dissonant-negative evaluation condition where the impulsive processing was largely impeded and the outcome expectancy would influence the IB result to the most extent. In such condition, the magnitude of the negative indirect effect of cognitive evaluation's moderation exceeded that of its positive direct effect. In conclusion, the cognitive evaluation would mark a positive moderating effect on the UBI-IB relationship only when the impulsive system prevails over the reflective system in governing IB enactment. Otherwise, it might reveal an insignificant or negative effect.

Overall, this study integrated the ritual marketing thought to explain the OSC-IB and hereby induced the social community and personal involvement as the antecedents of UBI in the OSC. By analyzing the antecedents' formative elements and causalities, our findings enriched and renewed ritual marketing thought, and in turn, brought brand new theoretical perspectives to understand the special bond between the OSC and IB. Second, through probing into effects of cognitive evaluation and outcome expectancy on IB enactment, this article supplemented empirical evidence to the CIFE model and drew a reasonable explanation about the divergence between Rook & Fisher [1995] and Dholakia [2000]. Finally, yet importantly, the study advanced the application and research of RIM by depicting the interplay between reflective and impulsive systems in IB decision-making and detecting the new boundary condition.

5.3. Implications for Practice

According to the research findings, this paper delivered some proposals that may be of value to e-commerce platforms holding OSC. First, through verifying the UBI promoting effects of consumers' social community and

personal involvement in the OSC, we preliminarily affirmed that the OSC could manipulate consumers' impulsiveness through conducting ritual marketing. Hence, we offered some suggestions about how to promote consumers' impulse on shopping on these two dimensions. For one thing, the OSC platform should provide favorable conditions for consumers to extend their social community. For this purpose, platforms can improve their hospitality in reinforcing bi-directional multimedia infrastructures and the aesthetics of digital language; Also, platforms can broaden the interactive channels and formulate incentive policies to facilitate the merchants-consumers and consumers-consumers communications. Besides, platforms can utilize media resources like broadcast, television, and the new media to let the demagogical signs about the OSC permeate into consumers' daily environment. For another, OSC should audaciously arrange the campaign and atmosphere with more sense of ritual following the real carnivals. Hence, the OSC platform should dedicate effort to liberate consumers from routine life and provide them with a temporary carnivalistic life where they can feast upon shopping ceremonies, enjoy the human closeness, and pursue hedonic gratification and then easily abandon themselves in self-indulgence and impulsiveness. Third, beyond boosting consumer's impulse formation, the way to improve consumers' evaluation of IB is also the key to precipitate IB enactment in the OSC. Hereon, we doped out two directions — concealing possible constraints and guiding positive opinions for the OSC-IB. For the former, platforms and merchants could resolve the financial impediments by encouraging deferred or serial payment, and meanwhile, preclude consumers' consideration of long-term goals and emotions by reducing their construal level in purchasing processes. For the later, the platform should develop benign communications with the media and employ appropriate publicity means like celebrity endorsement, promoting positive characters and anecdotes, and controlling the diffusion of slanderous reports and comments.

5.4. Limitations and Future Research

Despite the aforementioned theoretical and practical implications, a few limitations for vigilant generalization and directing future research have also been raised. In this study, we probed into the operations and situations of "Double 11" OSC and affirmed the successful application of ritual marketing where consumers could be aroused to buy impulsively under preconditions of social community and personal involvement. However, the "Double 11" OSC was organized upon the Chinese market, and the participants in this study were also Chinese consumers. According to the original view of communication [Carey 2008], ritual marketing cannot be abstracted away from the local culture and tradition. While each country has its own tradition and recognition about the sense of ritual. Hence, we cannot assert whether the ritual marketing thought could be utilized to analyze the OSC hold in other counties and whether the social community and personal involvement would promote consumers' impulsiveness in such cases. Thus, we suggested that subsequent researches to apply the framework and methodology of this research to the OSC in other countries to test the general applicability of these conclusions.

Another limitation of this study is the limited revelation of the psychological mechanism in IB enactment. In this study, we selected the cognitive evaluation and outcome expectancy from the CIFE model as two key variables to demonstrate the processing of impulsive and reflective systems behind the OSC-IB. However, a lot of mental factors and effects regarding IB decision-making were not included. For example, the selection and application of resistance strategies in the volitional system of the CIFE model and the self-regulatory resources which underpins the reflective system's activation in the RIM theory could significantly influence the UBI-IB relationship. Thus, we proposed that there are urgent needs for future studies to dig deeper into the psychological processes of IB, that is to say, take other cognitive variables into the psychological account of IB enactment and resistance and pay primary attention to the functions relevant to impulse resistance and the reflective system.

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REFERENCES

Adobe, "Adobe Analytics Data Shows Cyber Monday Broke Online Sales Record with $7.9 Billion," 2018, available at: https://news.adobe.com/press-release/experience-cloud/adobe-analytics-data-shows-cyber-monday-broke-online-sales-record-79 (accessed 2 February 2019).

Aiken, L.S. and S.G. West, Multiple regression: testing and interpreting interactions, CA, Newbury Park: Sage, 1991.

Akram, U., P. Hui, M. Kaleem, and S. Khan, "The plight of humanity : Online impulse shopping in China," *Human Systems Management*, Vol. 36, 73–90, 2017.

Alizila, "New 11.11 GMV record as alibaba ecosystem goes all-in," 2018, available at: https://www.alizila.com/new-11-11-gmv-record-alibaba-ecosystem-all-in/ (accessed 2 February 2019).

Armor, D.A. and S.E. Taylor, "Situated Optimism: Specific Outcome Expectancies and Self-Regulation," *Advances in Experimental Social Psychology*, Vol. 30:309–379, 1998.

Badgaiyan, A.J. and A. Verma, "Does urge to buy impulsively differ from impulsive buying behaviour? Assessing the impact of situational factors," *Journal of Retailing and Consumer Services*, Vol. 22:145–157, 2015.

Bagozzi, R.P. and Y. Yi, "On the Evaluation of Structural Equation Models," *Journal of the Academy of Marketing Science*, Vol. 16, No. 1:74–94, 1988.

Bakhtin, M.M., Rabelais and his world, Bloomington: Indiana University, 1984.

Bargh, J. and K. McKenna, "The Internet and social life," *Annual Review of Psychology*, Vol. 55:573-590, 2004.

Bayley, G. and C. Nancarrow, "Impulsive purchasing: a qualitative exploration of the phenomenon," *Qualitative Market Research*, Vol. 1, No. 2:99-114, 1998.

Beatty, S.E. and M.E. Ferrell, "Impulse buying: Modeling its precursors," *Journal of Retailing*, Vol. 74, No. 2:169–191, 1998.

Carey, J.W., Communication as Culture, Revised Edition: Essays on Media and Society (2nd Ed), NY, New York: Routledge, 2008.

Carver, C.S. and M. Scheier, "Principles of self-regulation: Action and emotion," *Handbook of motivation and cognition: foundations of social behavior*, Vol. 2:3–52, 1990.

Chan, T.K.H., C.M.K. Cheung, and Z.W.Y. Lee, "The state of online impulse-buying research: A literature analysis," *Information and Management*, Vol. 54, No. 2:204–217, 2017.

Chen, Y.C., J.H. Wu, L. Peng, and R.C. Yeh, "Consumer benefit creation in online group buying: The social capital and platform synergy effect and the mediating role of participation," *Electronic Commerce Research and Applications*, Vol. 14, No. 6:499–513, 2015.

Chin, W.W., "Issues and Opinion on Structural Equation Modeling," *MIS Quarterly*, Vol. 22, No. 1:vii-xvi, 1998.

China Internet Network Information Center. The 42th China Statistical Report on Internet Development. Beijing, China: Internet Network Information Center, 2018.

Coresight Research, "Countdown to Singles' Day 2017, Part 4: Singles' Day vs. US Shopping Holidays," 2017, available at: https://www.fungglobalretailtech.com/research/countdown-singles-day-2017-part-4-singles-day-vs-us-shopping-holidays/ (accessed 2 February 2019).

Cummings, J. and A.R. Dennis, "Virtual First Impressions Matter: The Effect of Social Networking Sites on Impression Formation in Virtual Teams," *MIS Quarterly*, Vol. 42, No, 3:697–717, 2018.

Custer, C., "Tmall CEO: this year, Alibaba plans to take Singles Day global," 2014, available at: https://www.techinasia.com/tmall-ceo-year-alibaba-plans-singles-day-global (accessed 2 February 2019).

Dawson, S. and M. Kim, "External and internal trigger cues of impulse buying online," *Direct Marketing: An International Journal*, Vol. 3, No. 1:20-34, 2009.

Diamantopoulos, A. and H.M. Winklhofer, "Index construction with formative indicators: an alternative to scale development," *Journal of Marketing Research*, Vol. 38, No. 2:269–277, 2001.

Dholakia, U.M., "Temptation and Resistance: An Integrated Model of Consumption Impulse Formation and Enactment," *Psychology & Marketing*, Vol. 17, No. 11:955–982, 2000.

Fang, Y.F., "Study on Effects of Ritual in Marketing," Proceedings of the8th International Conference on Innovation & Management, 2011.

Floh, A. and M. Madlberger, "The role of atmospheric cues in online impulse-buying behavior," *Electronic Commerce Research and Applications*, Vol. 12, No. 6:425–439, 2013.

Fornell, C. and D.F. Larcker, "Structural equation models with unobservable variables and measurement error: Algebra and statistics," *Journal of Marketing Research*, Vol.18, No.3:382–388, 1981.

Gefen, D., D.W. Straub, and M.C. Boudreau, "Structural Equation Modeling and Regression: Guidelines for Research Practice," *Communications of the Association for Information Systems*, Vol. 4, No. 7:1-78, 2000.

Hair, J.F., G.T.M. Hult, C.M. Ringle, and M. Sarstedt, A Primer on Partial Least Squares Structural Equation Modeling (2nd Ed), CA, Thousand Oaks: Sage, 2017.

Henseler, J., C.M. Ringle, and R.R. Sinkovics, "The use of partial least squares path modeling in international marketing," *Advances in International Marketing*, Vol. 20:277-320, 2009.

Hinkin, T.R. and J.B. Tracey, "An Analysis of Variance Approach to Content Validation," *Organizational Research Methods*, Vol. 2, No. 2:175-186, 1999.

Hoffman, D.L. and T.P. Novak, "Marketing in hypermedia computer-mediated environments: Conceptual foundations," *Journal of Marketing*, Vol. 60, No. 3:50–68, 1996.

Hofmann, W., F. Strack, and R. Deutsch, "Free to buy? Explaining self-control and impulse in consumer behavior," *Journal of Consumer Psychology*, Vol. 18, No. 1:22–26, 2008.

Hsul, C.L., K.C. Chang, and M.C. Chen, "Flow Experience and Internet Shopping Behavior: Investigating the Moderating Effect of Consumer Characteristics," *Systems Research and Behavioral Science*, Vol. 29, No. 3:317-332, 2011.

Huang, L.T., "Flow and social capital theory in online impulse buying," *Journal of Business Research*, Vol. 69, No.6:2277–2283, 2016.

Hubert, M., M. Hubert, A. Florack, M. Linzmajer, and P. Kenning, "Neural Correlates of Impulsive Buying tendencies during perception of product packaging," *Psychology & Marketing*, Vol. 30, No. 10:861–873, 2013.

Jarboe, G.R. and C.D. McDaniel, "A profile of browsers in regional shopping malls," *Journal of the Academy of Marketing Science*, Vo. 15, No. 1:46–53, 1987.

Kervenoael, R., D.S.O. Aykac, and M. Palmer, "Online social capital: Understanding e-impulse buying in practice," *Journal of Retailing and Consumer Services*, Vol. 16, No. 4:320–328, 2009.

Kim, S. and H. Park. "Effects of various characteristics of social commerce (s-commerce) on consumers' trust and trust performance," *International Journal of Information Management*, Vol. 33, No. 2:318–332, 2013.

Koufaris, M., "Applying the Technology Acceptance Model and flow theory to online Consumer Behavior," *Information Systems Research*, Vol. 13, No. 2:115–225, 2002.

Liao, C., P.L. To, Y.C. Wong, P. Palvia, and M.D. Kakhki, "The impact of presentation mode and product type on online impulse buying decisions," *Journal of Electronic Commerce Research*, Vol. 17, No. 2:153–168, 2016.

Liu, J., "From festive ceremony culture to marketing: Case study of T-Mall "Double Eleven" online shopping event," *Journal of Advertising Study*, No. 2:84-90, 2013.

Liu, Y., H. Li, and F. Hu, "Website attributes in urging online impulse purchase: An empirical investigation on consumer perceptions," *Decision Support Systems*, Vol. 55, No. 3:829–837, 2013.

MacKenzie, S.B., P.M. Podsakoff, and C.B. Jarvis, "The problem of measurement model misspecification in behavioral and organizational research and some recommended solutions," *Journal of Applied Psychology*, Vol. 90, No. 4:710-730, 2005.

Mattila, A.S. and J. Wirtz, "The role of store environmental stimulation and social factors on impulse purchasing," *Journal of Services Marketing*, Vol. 22, No. 7:562–567, 2008.

Moe, W.W., "Buying, searching or browsing: Differentiating between online shoppers using instore navigational clickstream," *Journal of Consumer Psychology*, Vol. 13, No. 1-2:29-39, 2003.

Mohan, G., B. Sivakumaran, and P. Sharma, "Impact of store environment on impulse buying behavior," *European Journal of Marketing*, Vol. 47, No. 10:1711–1732, 2013.

Nahapiet, J. and S. Ghoshal, "Social capital, intellectual capital, and the organizational advantage," *The Academy of Management Review*, Vol. 23, No. 2:242–266, 1998.

Nel, D., R. van Niekerk, J. Berthon, and T. Davies, "Going with the flow: Web sites and customer involvement," *Internet Research*, Vol. 9, No. 2:109–116, 1999.

Nunnally, J.C., Psychometric Theory (2nd Ed), NY, New York: McGraw-Hill, 1978.

Parboteeah, D.V., J.S. Valacich, and J.D. Wells, "The influence of website characteristics on a consumer's urge to buy impulsively," *Information Systems Research*, Vol. 20, No. 1:60–78, 2009.

Petter, S., D. Straub, and A. Rai, "Specifying Formative Constructs in Information Systems Research," *Management Information Systems Quarterly*, Vol. 31, No. 4:623–656, 2007.

Pham, S., Alibaba's Singles Day: World's biggest shopping bonanza sets new record, 2016, available at: https://money.cnn.com/2016/11/10/technology/alibaba-singles-day-shopping-festival-breaks-records/index.html (accessed 2 February 2019).

Preacher, K.J. and A.F. Hayes, "Asymptotic and resampling strategies for assessing and comparing indirect effects in simple and multiple mediator models," *Behavior Research Methods*, Vol. 40, No. 3:879-891, 2008.

Rook, D.W., "The Buying Impulse," *Journal of Consumer Research*, Vol. 14, No. 2:189–99, 1987.

Rook, D.W. and R.J. Fisher, "Normative Influences on Impulsive Buying Behavior," *Journal of Consumer Research*, Vol. 22, No. 3:305-313, 1995.

Rotter, J., Social learning and clinical psychology, NJ, Englewood Cliffs: Prentice Hall, 1954.

Scheier, M.F. and C.S. Carver, "Optimism, coping, and health: assessment and implications of generalized outcome expectancies," *Health Psychology*, Vol. 4, No. 3:219–247, 1985.

Strack, F. and R. Deutsch, "Reflective and Impulsive Determinants of Social Behavior," *Personality and Social Psychology Review*, Vol. 8, No. 3:220–247, 2004.

Straub, D.W., "Validating Instruments in MIS Research," *MIS Quarterly*, Vol. 13, No. 2:147-169, 1989.

Sultan, A.J., J. Joireman, and D.E. Sprott, "Building consumer self-control: The effect of self-control exercises on impulse buying urges," *Marketing Letters*, Vol. 23, No. 1:61–72, 2012.

Suntornpithug, N. and J. Khamalah, "Machine and person interactivity: The driving forces behind influences on consumers' willingness to purchase online" *Journal of Electronic Commerce Research*, Vol. 11, No. 4:299-325, 2010.

Verhagen, T. and W. Van Dolen, "The influence of online store beliefs on consumer online impulse buying: A model and empirical application," *Information and Management*, Vol. 48, No. 8:320–327, 2011.

Vohs, K.D., "Self-regulatory resources power the reflective system: Evidence from five domains," *Journal of Consumer Psychology*, Vol. 16, No. 3:217–223, 2006.

Vohs, K.D. and R.J. Faber, "Spent resources: Self-regulatory resource availability affects impulse buying," *Journal of Consumer Research*, Vol. 33, No. 4:537-547, 2007.

Wells, J.D., V. Parboteeah, and J.S. Valacich, "Online impulse buying: understanding the interplay between consumer impulsiveness and website quality," *Journal of the Association for Information Systems*, Vol. 12, No. 1:32–56, 2011.

Williams, D., "On and off the 'Net: Scales for Social Capital in an Online Era," *Journal of Computer-Mediated Communication*, Vol. 11, No. 2:593–628, 2006.

Wirtz, B.W., R. Piehler, and S. Ullrich, "Determinants of social media website attractiveness," *Journal of Electronic Commerce Research*, Vol. 14, No. 1:11-33, 2013.

Wu, J., Li, Q. and K.K. Wei, "Alibaba's IT platform and electronic commerce synergy in driving 'Singles' Day '," *Journal of Organizational Computing and Electronic Commerce*, Vol. 26, No. 1:193-202, 2016.

Xiao, S.H. and M. Nicholson, "A multidisciplinary cognitive behavioural framework of impulse buying: A systematic review of the literature," *International Journal of Management Reviews*, Vol. 15, No. 3:333–356, 2013.

Xinhua, "Hands-chopping people" among China's phrases of 2015," 2015, available at: http://www.xinhuanet.com/english/2015-12/18/c_134931205.htm (accessed 2 February 2019).

Xu, C., "Network Festival Marketing Exploration Based on the Ritual View of Communication," *Today's Massmedia*, Vol. 23, No. 12:87-88, 2015.

Xu, X., Q. Li, L. Peng, T.L. Hsia, C.J. Huang, and J.H. Wu, "The impact of informational incentives and social influence on consumer behavior during Alibaba's online shopping carnival," *Computers in Human Behavior*, Vol. 76:245–254, 2017.

Yan, Q., L. Wang, W. Chen, and J. Cho, "Study on the influencing factors of unplanned consumption in a large online promotion activity," *Electronic Commerce Research*, Vol. 16, No. 4:453–477, 2016.

Zaichkowsky, J.L., "Measuring the involvement construct," *Journal of Consumer Research*, Vol. 12, No. 3:341-352, 1985.

Zheng, X., N. Liu, and L. Zhao, "A study of the effectiveness of online scarce promotion—Based on the comparison of planned buying and unplanned buying," *Proceedings of WHICEB*, No. 51:247–257, 2013.

Appendix

The survey lists statements about the extent, that is, seven-point scales anchored by "Strongly disagree" (1) and "Strongly agree" (7), to which you agree that yourself have acted, felt, and experienced during the "Double 11" OSC:

Construct	Items
Social community (formative construct) (adapted from Kervenoael et al. 2009; Nahapiet & Ghoshal 1998)	SCf_1 I felt well connected with one or more e-commerce platforms that held the shopping carnival. SCf_2 I came into contact with numerous e-merchants. SCf_3 I felt surrounded by a variety of the media transmitting information about the "Double 11" OSC. SCf_4 I built contacts with numerous net friends. SCf_5 I interacted with close friends or relatives more frequently.
Social community (global item) (adapted from Huang 2016; Nahapiet & Ghoshal 1998)	"Double 11" OSC made me feel that I was well connected with the society.
Participation (adapted from Xu et al. 2017)	Pa_1 I actively browsed product information and promotional messages. Pa_2 I actively searched for product information and promotional messages. Pa_3 I actively participated in marketing activities (e.g., shopping, promotional games and lucky draw).
Interaction (adapted from Xu et al. 2017)	In_1 I frequently communicated with other people about the information, ideas, opinions, experiences of "Double 11" OSC. In_2 I shared my shopping lists or orders with one or more friends. In_3 I frequently join or conduct collaborative "Double 11" OSC activities (e.g., collaborate recommendation) with other people.
Pleasure (adapted from Xu et al. 2017)	Pl_1: I felt fun when shopping or taking part in other "Double 11" OSC events. Pl_2: "Double 11" OSC can gratify my shopping needs as well as my entertainment needs. Pl_3: I felt enjoyment and relaxed emotions gained from "Double 11" OSC.
Urge to buy impulsively (adapted from Beatty & Ferrell 1998; Parboteeah et al. 2009)	UBI_1: I had the sudden urge to purchase things outside my shopping list. UBI_2: I experienced a number of urges to buy things I had not planned to buy. UBI_3: I experienced no strong urges to make any unplanned purchase (reverse coded). UBI_4: I had a desire to buy items that did not pertain to my shopping goal.
Outcome expectancy (adapted from Dholakia 2000; Scheier & Carver 1985)	When you confronted the unplanned goods that of little need and felt the urge to buy them, how was your attitude and expectancy? OE_1: I was expecting to resist my impulses of buying the goods. OE_2: I did not figure that I could reject the temptation. (reverse coded). OE_3: I was inclined to pull back from buying the goods.
Impulse buying (adapted from Mattila & Wirtz 2008; Mohan et al. 2013)	IB_1: I bought more than I had planned to buy. IB_2: I spent lots of money on unplanned goods. IB_3: I ended up spending more money than I originally set out to spend. IB_4: unplanned goods took up a great proportion of the total goods I purchased .
Impulse buying tendency (adapted from Beatty & Ferrell 1998)	IBT_1: When I go shopping, I buy things that I had not intended buying. IBT_2: I am a person who makes unplanned purchases. IBT_3: It is fun to buy spontaneously.
Cognitive evaluation (adapted from Liu et al. 2013; Rook & Fisher 1995)	Please evaluate the following scenario: You had planned to buy a pair of gym shoes with a budget of ￥300 (300 units of Chinese currency) in "Double 11" OSC, and you had made sure that there was no other necessary items to purchase. However, during the OSC day, you actually bought not only the gym shoes but also a pair of casual shoes and a coat with the total spending of ￥1150. (As regards the below four semantic differentials, point 7 indicated the most positive evaluation) CE_1: bad — good CE_2: wasteful — productive CE_3: unacceptable—acceptable CE_4: wrong — right