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調查即時性與心流狀態對直播的購買意願之影響

INVESTIGATING THE IMMEDIACY AND FLOW FACTORS TO INFLUENCE PURCHASE INTENTION IN LIVE VIDEO STREAMING SHOPPING

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摘要

本研究著重於了解即時性與心流狀態，這兩大因子在直播時對感知價值（功利、享樂與社會價值）的影響，進而影響到購買意願。本研究運用配額抽樣，分別從台灣的 PChome Online（網路家庭）的直播平台，以及中國福建的淘寶直播平台，各收到 225 份使用者樣本（總樣本數 450 份），藉由結構方程模式的分析來調查兩國使用者的狀況。實證結果第一條路徑表明，流量對社會價值產生正向影響，進而對購買意願產生正向影響。第二條路徑表明，流量對享樂價值產生正面影響，進而對購買意願產生正面影響。實證結果指出，心流狀態明顯影響社會與享樂價值，其顯著性明顯高於即時性對社會與享樂價值的影響。本研究模型實由社會臨場感理論所建立的一個理論機制，所以可以用這個角度來建議有效的社群媒體策略，以及解釋直播的行為模式。本研究也從解釋社會價值的作用角度為相關學術文獻做出了貢獻。

關鍵字：直播電商、即時性、心流狀態、社會價值、社會臨場感理論

ABSTRACT

This study investigates flow state and immediacy factors, which influence perceived values (utilitarian, hedonic, and social values), and then affect users' purchase intention in live video streaming shopping (LVSS). This study utilizes quota sampling to collect 450 samples, from 225 PChome Live users in Taiwan (Taiwan) and 225 Taobao Live users in Fujian (China) to investigate the effect of two types of nations on purchase intention using structural equation modeling analysis. Empirical results of the two paths indicate that flow state positively affects social values (first path) and hedonic values (second path) which, in turn, both positively influence purchase intention. The flow state's influence on social and hedonic values is significantly higher than the immediacy's influence. A theoretical mechanism is constructed based on social presence theory, which can be employed as a theoretical lens in proposing effective social media strategies and describing LVSS behavior. This work also contributes to explain more on the role of social values.

Keywords: Live Video Streaming Shopping, Immediacy, Flow, Social Value, Social Presence Theory

1.INTRODUCTION

Live video streaming shopping (LVSS) is an emerging medium that has been shown to affect the decisions of e-commence platform users (Ergiz, Demirtas, & Girici, 2021; Wongkitrungrueng & Assarut, 2020; Yu, Chen, Peng, & Chau, 2022). Because e-marketing managers have a great interest to purchase intention within LVSS, it forms the motivation of this study. In their review of the literature on perceived value and purchase intention, consumers have been described as "value seekers," and purchase has been considered a chain reaction of actions to create value in LVSS (Chen & Lin, 2018). In LVSS, perceived value was considered as a "complete shopping experience," not simply the obtain of a byproduct with utilitarian and hedonic value (Hazari, Bergiel, & Sethna, 2017). LVSS marketers need to understand the perceived value and / or the additional social role that could motivate customers to employ types of interactive media (Qing & Jin, 2022). This raises the research problem of this study. However, no studies have emphasized utilitarian, hedonic, and social value together in investigating the perceived value of users on e-commence platforms in LVSS and constitute a first research gap. Furthermore, concerning the driving factor, voluminous studies explore immediacy (Huang, Zhu, Hao, & Deng, 2022; Li, Li, & Cai, 2021; Liu, Yang, & Ling, 2020; Parise, Guinan, & Kafka, 2016; Zhang, Cao, Liu, & Qi, 2022), and several studies explore flow (Liu, Zhang, & Chen, 2022; Lu, Fan, & Zhou, 2016; Wang, Wang, Lin, & Abdullat, 2021; Xu & Tayyab, 2021) in the purchase behavior in live video streaming. However, as author knows, no studies employ immediacy and flow together in investigating the purchase behavior in LVSS and constitute another research gap. In LVSS, immediacy and flow are two independent concepts that have an important impact on enhancing viewer engagement and viewing experience; exploring the role of immediacy and flow together in LVSS can better promote the interaction between the anchor and the audience, thereby improving audience participation and viewing experience, and enhancing the perceived value and influence of LVSS.

In this study, we separated perceived value into three sub-categories: utilitarian value (UV), hedonic value (HV), and social value (SV), and forms the first contribution of this field. In previous study, Sánchez-Fernández and Iniesta-Bonillo (2007) divided perceived value into two categories: a unidimensional research stream and a multi-dimensional research stream. The concept of perceived value originated in origin, early research on perceived value, and it steadily became multi-dimensional of research on social media (Sánchez-Fernández & Iniesta-Bonillo, 2007). The second category was multi-dimensional because perceived value was considered diverse and complex, and it depended on the subjective judgment of the customer. Sheth, Newman, and Gross (1991) proposed that perceived value can be divided into functional, emotional, epistemic, social,

or conditional based on the consumption value theory. Babin and Kim (2001) showed that perceived value was triggered by two categories: utilitarian value and hedonism value. Additionally, Rintamäki, Kanto, Kuusela, and Spence (2006) incorporated abstract social factors (i.e., social value) into perceived value to consider utilitarian and hedonic values as a separate dimension.

Based on social presence theory, streamers can use immediacy and flow to influence viewers entering LVSS. Given that the rationality of choosing these two independent variables in the study that is to illustrate the second contribution of this study. Immediacy and flow play an important role in improving LVSS experience, enhancing audience participation and improving audience satisfaction. Firstly, immediacy can enhance the sense of interaction and emotional resonance between the host and the audience, allowing the audience to feel the attention and response of the host, thereby increasing the participation and emotional investment of the audience (Liu et al., 2020). Meanwhile, immediacy can also enhance the audience's trust and sense of identity for LVSS, and improve the audience's stickiness and loyalty (Lu et al., 2016; Li et al., 2021). Secondly, flow can enhance the audience's investment and immersion in LVSS, allowing the audience to own a powerful emotional resonance and feeling of experience of LVSS, thereby improving the viewing experience and audience satisfaction (Liu et al., 2022). Flow can also promote the memory and learning effect of the audience for LVSS, and improve the communication effect and value of LVSS (Liu et al., 2022). Furthermore, immediacy can promote the interaction between the host and the audience, allowing the audience to feel the attention and response of the host, thereby increasing the participation and emotional investment of the audience (Parise et al., 2016). In short, immediacy and flow in LVSS can increase audience participation, emotional engagement and satisfaction, thereby increasing the value and influence of LVSS. Therefore, focusing on immediacy and flow together in LVSS is of great significance and value for improving audience experience and enhancing the value of LVSS.

Note that this study selected Taiwan and Fujian since they are the nearest regions in China and Taiwan. Fujian is located at southeast in China and it is an important economic research area. The geographic attributes of Fujian are similar to Taiwan. Additionally, Fujian was China's planned economic zone to Taiwan and owns frequent economic and trade transactions to Taiwan; also, Fujian's performance in cultural level was near to Taiwan. That is, these two groups own similar life style.

Furthermore, when consumers use LVSS, they will inevitably be affected by the multi-dimensional sensory stimulation within a live circumstance (Wang & Wu, 2019; Zhu, Kim, & Choi,

2022). Previous researches in the literature have shown that LVSS attracted various users by the streamer (Chen & Lin, 2018; Kim, Kang, & Bae, 2022; Li, Gaun, Chong, & Hou, 2018; Sun, Shao, Li, Guo, & Nie, 2020; Wang, Ding, Akram, Yue, & Chen, 2021). However, few previous studies emphasized immediacy and flow state together as technical stimulus characteristics in investigating the perceived value of users on e-commence platforms and constitute another research gap. In this study, LVSS are used as an environment that informs consumers' decision-making behavior (Yu et al., 2022). Live-streaming sites have to provide related messages that viewers could then employ to evaluate their required unmet needs with proposed elements (Baboo, Nunkoo, & Kock, 2022). It is a type of user experience in that a viewer may feel their interaction with the host is immediacy and flow well in that a well-designed LVSS allows viewers to feel a higher level of immediacy and flow (Chen, Kassas, & Gao, 2021; Liu et al., 2020).

In short, this study includes a dependent variable (purchase intention), three mediating variables (utilitarian, hedonic, and social value), and two independent variables (immediacy and flow) in LVSS to fill research gaps and make contributions of this study.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

The social presence theory is initiated by Short, Williams, and Christie (1976). Social presence theory states that the degree of social presence people feel during interactions can influence their behavior and experiences. Social presence is the degree of an individual feels an emotional and social connection with other people within their interactions in virtual environments (Biocca, 1997). When the degree of social presence is higher, people are more likely to invest and participate in the interaction and have a better experience (Short, Williams, & Christie, 1976).

In LVSS, social presence theory can be effective (Zhu et al., 2022). Streamers can increase their social presence by using direct language style, body language, facial expressions and visuals, and interacting with viewers (Li et al., 2021). Additionally, interactive features on the LVSS platform, such as chat rooms and gift mechanisms, can also increase social presence (Chen & Liao, 2022). When viewers feel that they own a close relation with the streamer, they are no doubt engage in the LVSS and to stay in LVSS for a while (Zhu et al., 2022).

Firstly, Rice (1993) refers to immediacy is “The extent of synchronous interaction”. Immediacy is the degree to which synchronous interaction in communication reduces perceived distance among consumers (Rice, 1993; Thweatt & McCroskey, 1996). An immediacy in the verbal and / or non-verbal communication routes promotes the engagement of viewers, increases view trust and reduces product uncertainty (Li et al., 2018).

Therefore, immediacy plays a critical role in social presence theory (Dixson, Greenwell, Rogers-Stacy, Weister, & Lauer, 2017). It can improve the social presence between the anchor and the audience, enhance interaction and participation, and then improve the viewing experience and audience satisfaction (Parise et al., 2016). Immediacy can increase the degree of social presence between the host and the audience, making the audience feel that they have a close relationship with the host (Zhang et al., 2022). This can be created through the streamer’s use of direct verbal style, body language, facial expressions and visuals (Dixson et al., 2017). In addition, interactive features on the LVSS platform, such as chat rooms and gift mechanisms, can also increase social presence (Li et al., 2018; Lu et al., 2016).

Secondly, flow is defined as a spiritual state that individuals are fully immersed in activities (Csikszentmihalyi & Hunter, 2003). Flow is the degree of joy within the procedure of the best contact (Csikszentmihalyi & Hunter, 2003; Hoffman & Novak, 1996). Flow state is a psychological mechanism experienced by the audience in LVSS encounters with performers, and it plays a critical role in interactive e-marketing (Sun et al., 2020). Flow is found to individuals who watch LVSS to the extent that they are so dedicated that people are not annoyed by the alien environment with ease (Chen & Lin, 2018). In LVSS, flow state, which is characterized by virtual one-to-one communication between viewers and live broadcaster (Wei, Jung, & Choi, 2022).

Therefore, flow plays a critical role in the social presence theory (Wang et al., 2021). It can improve the emotional resonance and interaction between the anchor and the audience, enhance the audience’s input and immersion in LVSS, and then improve the viewing experience and audience satisfaction (Xu & Tayyab, 2021). Flow can further increase social presence and audience engagement. When viewers feel fully engaged in LVSS, they will more easily feel a social presence, which in turn improves their engagement and viewing experience (Liu et al., 2022). Therefore, in the LVSS, the anchor can increase the degree of social presence by creating immediacy and flow, making it easier for the audience to participate in the LVSS and have a better viewing experience (Liu et al., 2022).

In sum, we first introduce three sub-categories: UV, HV, and SV, on the formation of purchase intention (PI) in LVSS. We then identify two technical stimulus characteristics, immediacy (IM) and flow state (FL), and introduce them as explanatory drivers in LVSS. Figure 1 shows the study framework.

2.1 Relationships between Immediacy and Utilitarian Value, Hedonic Value, and Social Value

Diwanji et al. (2020) indicated that LVSS viewers were more inclined to follow live streamers who responded actively to questions raised by viewers. In the remote presentation of LVSS, immediacy interactions enhanced the "virtual reality" created by the media (Perez-Vega, Waite, & O'Gorman, 2016). Rich media were fit for resolving complex exercises because they provided fast feedback based on media richness. Obtaining comprehensive product / service message within the interaction helped decrease distrust and perceived risk, thereby bringing out the consumers' perceived usefulness and perceived ease of use of LVSS products (Childers, Carr, Peck, & Carson, 2001; Liu, Batra, & Wang, 2017). The immediacy empowered by the LVS platform to reduce sellers' uncertainty about consumers' identity and provide consumers to gain comprehensive message to assess product / service quality, thus reducing distrust (Chen et al., 2021), and thereby strengthening consumers' perception of the usefulness and ease of use of LVSS products (Childers et al., 2001; Kim et al., 2022). Therefore, the reduction in identity uncertainty and product uncertainty can obtain utilitarian value. Therefore, we propose hypothesis H1a:

H1a: Immediacy positively influences utilitarian value.

The immediacy of LVSS has been shown to induce perceptions of spatial distance, social distance, and temporal distance, that have increased authenticity, improved user contact, and enhance users' sensory exposure (Huang et al., 2022). The immediacy of LVSS has reduced perception distance and improved experience by reducing time and cost; furthermore, strengthen consumers' perception of the fun, fun and interesting of LVSS products (Rintamäki et al., 2006; Wei et al., 2022). Here, time represented the cost of opportunity, and consumers were willing to pay to save time to shorten the waiting period (Miller & Brunner, 2008). Therefore, the immediacy of time and cost saving in LVSS can improve users' experience and immediacy response in LVSS can affect persuasiveness (Perez-Vega et al., 2016; Yu et al., 2022), and that the closer the physical distance perceived by the audience, the higher the hedonic value on the subject of interest, playfulness, and fun (Liu et al., 2020). Therefore, we propose hypothesis H1b:

H1b: Immediacy positively influences hedonic value.

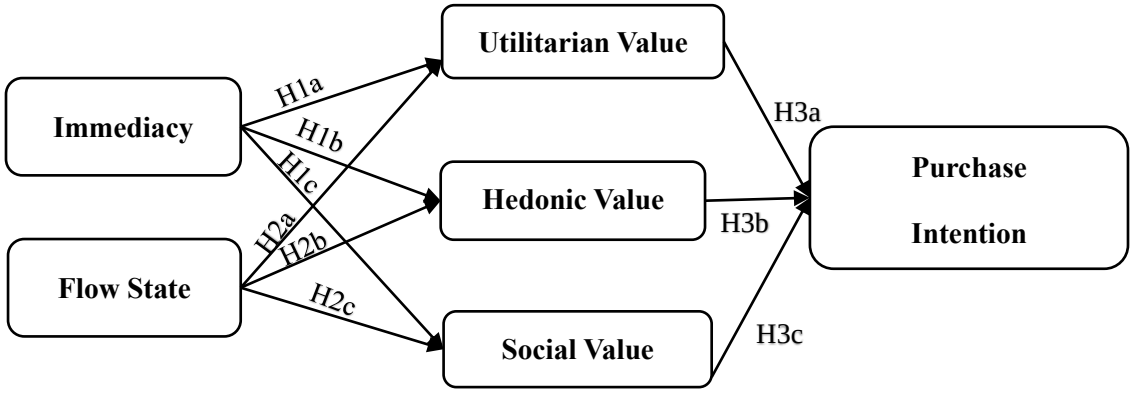

Figure 1 Research framework of this study

Immediacy refers to the state in which there is no interference between the target and the source (Miller & Brunner, 2008). In the context of LVSS, it refers to the proximity of communication between buyers, sellers, and even buyers in a live room (Lim, Cha, Park, Lee, & Kim, 2012). Communication behavior was found to produce a strong sense of social presence, whether verbal or non-verbal immediacy (Rice, 1993). Social presence was indicated by the perception of social status, which is a social psychology mechanism derived from social interactionism (Baboo et al., 2022; Rice, 1993). Therefore, real-time connection in LVSS may induce the feeling of social presence that reinforces perceive social status and self-esteem of LVSS products from consumers (Perez-Vega et al., 2016; Roy & Rabbanee, 2015). Therefore, in the service contact interaction between service personnel and consumers, the immediacy response presented can give consumers a higher sense of respect and social dignity, that is, social value (Roy & Rabbanee, 2015). For example, based on this self-enhancement procedure, when users receive an instant reply, they feel respected regarding their social status, which improves social value. Therefore, we propose hypothesis H1c:

H1c: Immediacy positively influences social value.

2.2 Relationships between Flow State and Utilitarian Value, Hedonic Value, and Social Value

Chen and Lin (2018) deemed flow state as occurring in individuals who watched LVSS so intensely that people were not annoyed by the outer environment easily. LVSS supplies an environment of flow clues, and consumers gain enhanced flow states (e.g., time distortion, feel of virtual reality, and improved concentration) by engaging in the circumstance (Chen & Lin, 2018). Flow induces consumers to perceive the utility of value. Specifically, Lykousas, Gómez, and

Patsakis (2018) found that flow resulted from the interaction between the provider and the viewer, which increased information and increased experience sharing. The proper usage of various sensory cues in multimedia was found to enhance cognitive learning (Gros, Wanner, Hackenholt, Zawadzki, & Knautz, 2017; Baboo et al., 2022). They used LVSS as a platform to build a helpful function to satisfy utilitarian value. In LVSS, flow state had a positive impact on utilitarian value. Therefore, we propose hypothesis H2a:

H2a: Flow state positively influences utilitarian value.

Flow theory is shown to be helpful to promote the essential motivation of efforts (Franciosi, 2011). Flow has been studied as an important internal driving force in hedonic information systems (Obadă, 2013). Li et al. (2018) found that flow provided a unique sensory experience and explained the audience's behavioral intentions when LVSS was used for entertainment purposes. In LVSS, flow resulting from information interactivity increased both learning and the perceived control of behavior (Hsu, 2020). This positive subjective experience led to further exploration, enhanced perceived satisfaction, and increased the entertainment value of participation (Chae, Kim, Lee, & Park, 2020; Yu et al., 2022). In LVSS, the flow state had a positive impact on hedonic value. Therefore, we propose hypothesis H2b:

H2b: Flow state positively influences hedonic value.

Flow state improved the richness of information shared between viewers and streaming media. Ergiz et al. (2021) found that flow resulting from richness of message met the social presence need of social media by affecting social interactions. Flow increased the chance of knowledge sharing, and frequent connection promoted shared knowledge by enhancing the intensity of interaction (Galaskiewicz, 1985). The greater the information exchange of flow in LVSS, the richer the possibility of knowledge sharing between streamer and viewers, therefore satisfying their social demands of the viewers (Chen & Lin, 2018; Yu et al., 2022). In LVSS, flow state had a positive impact on social value. Therefore, we propose hypothesis H2c:

H2c: Flow state positively influences social value.

2.3 Relationships between Utilitarian Value, Hedonic Value, Social Value, and Purchase Intention

From a utilitarian perspective, utilitarian value implies how much utility information the viewer can acquire through the LVS interaction and it enables customers to perceive a product's usefulness according to the utility information of the content (Liu, Lim, Li, Tan, & Cyr, 2020). Park

and Lin (2020) found that LVSS attracted viewers by providing content information that was based on its utilitarian value. For example, the success of blogs depended on the value of the content provided to readers (Baboo et al., 2022). The attractiveness of the presented content has a strong positively impact on people's engagement in attaining their goals (Li et al., 2018). The orientation of highly achieving goals directly affects consumers who are driven by internal motivation to push themselves, resulting in anticipated and planned buying effort, that is, strengthening purchase intention (Chou, Min, & Hsu, 2019; Liang, Ho, Li, & Turban, 2011). Therefore, we propose hypothesis H3a:

H3a: Utilitarian value positively influences purchase intention.

Hedonic value represents hedonic information the viewer can acquire and enabled consumers to have more excitement, enjoyment, and fun. The cognitive and emotional states derived from hedonic value were found to provide a rich user experience and enhance sensory stimulus (Qing & Jin, 2022). When users enjoy shopping or have a rich user's experience of hedonic value by using the website, they are able to excite themselves due to their extreme amusement, and then their planned desire to buy will increase, which leads to buying intention (Gan & Wang, 2017; Liang et al., 2011). In summary, the hedonic value that consumers perceived from a live broadcast affected consumers' preferences to social media, then greatly affecting promised purchase intention (Hazari et al., 2017; Kim et al., 2022). Thus, we propose hypothesis H3b:

H3b: Hedonic value positively influences purchase intention.

Based on the definition of social value, consumers communicate and define a social role and self-concept through social symbolic information of social value (Sweeney & Soutar, 2001). Chi, Yeh, and Tsai (2011) found that social value was assigned to products and services, which was affected by users' self-concept. The social presence of improving status and self-esteem through LVSS has extremely aroused consumers' deep desire to be affirmed and honored, and their inner need to stimulate anticipated ownness of internal motivation, which lead to purchase intention (Liang et al., 2011; Zhu et al., 2022). In LVSS, viewers gained self-enhancement and improved their social status through the social value of the LVSS (Roy & Rabbanee, 2015; Yu et al., 2022), which had a synergistic effect on attitude, thus influencing their purchase intention (Wu, Huang, Chen, Davison, & Hua, 2018). Therefore, we propose hypothesis H3c:

H3c: Social value positively influences purchase intention.

3.METHODOLOGY AND EMPIRICAL RESULTS

3.1 Measurement

We used the three dimensions of spatial distance, temporal distance, and social distance to measure immediacy, and we employed nine questionnaire items (Lim et al., 2012). We measured flow state using the three dimensions of time distortion, detachment from reality, and attention focus. Nine questions were used to capture these data (Chen & Lin, 2018; Hoffman & Novak, 1996). For utilitarian value, we used two facets - usefulness and ease of use - which were the subject of six questionnaire items (Childers et al., 2001). We used six questions to elucidate the two facets of hedonic value: enjoyment and exploration (Rintamäki et al., 2006). We used six questions to elucidate the two facets of social value: status and self-esteem enhancement (Roy & Rabbanee, 2015). Finally, we devised two dimensions of purchase intention: intention to buy and overall satisfaction (Andreassen & Lindestad, 1998; Chang, Chuang, Chuang, & Lin, 2015), and we used six questionnaire items. The questionnaire was designed as a six-point Likert scale that included mandatory options to avoid neutral responses, which Asians tend to use.

This study employed the structural equation model (SEM). SEM is a critical instrument used in social and behavioral science researches. The SEM results indicated that the relationships between these latent variables and observable variables were solid (Jöreskog & Sörbom, 1993; Kline, 2011). In our survey, there were 450 valid samples. We used 42 questionnaire items, which was higher than the criterion of 10 times the number of respondents in the sample (450 > 420 respondents), according to Jackson (2003) and Kline (2011).

3.2 Sampling, Data Collection and Two Respondent Profiles

Before administering the formal questionnaire, this study employed pre-testing by distributing 30 questionnaires to affirm the validity of the measurement adapted. In this study, formal data were gathered by way of online survey of respondents in Fujian who were Taobao Live users and LVSS (e-commerce live streaming) users and respondents in Taiwan who were PChome Live and e-commerce live streaming users. Formal data were collected in 2022 Spring using the SurveyCake, an online survey instrument. When filling in the flow and immediacy, the individuals were invited to fill in the questionnaire by recalling a memorable viewing LVSS experience.

This study adopted quota sampling to confirm the representativeness of the respondents, in which the statistical features of the respondents meet the characteristic demographics of the population. The quota sampling method was appropriate for this study because the population statistics have been assured, and respondents represent the PChome Live users in Taiwan and Taobao Live users in Fujian, respectively. In 2021, the populations of Taiwan (TW) and Fujian (FJ), ranging from 15-60 years old, were 15.70 and 41.37 million persons, respectively, based on the Taiwan Network Information Center (TWNIC) and China Network Information Center (CNNIC) that were used as the population in this survey. This study determined what ratio of the population had engaged in LVSS use based on gender and age from a survey of online users conducted by the TWNIC and CNNIC, respectively. Potential respondents entered the SurveyCake website at random to complete the online survey. Note that this study did not deliberately choose the respondents who were the most accessible individuals, nor did this study remove those who were challenging to contact or reluctant to participate. In this study, the sample populations were categorized based on gender and age. Based on the population in Taiwan and Fujian, the planned quota for each gender and age group was formed and the actually respondent profile (450 respondents in total) are shown in Table 1.

Table 2 shows the means and standard deviations of the variables within the two respondent profiles (Overall, Taiwan, and Fujian). Given that people in Taiwan and Fujian are culturally different, combing the two samples directly and analyzing them together may introduce biases. So, we separated the samples from the two areas from the beginning and conducted instrument equivalence (IE) and measurement equivalence (ME) tests to explore whether the two respondent profiles of data could be merged and analyzed together.

We examined instrument equivalence and measurement equivalence among multigroup samples to make comparisons and seek equivalence (Cheung & Rensvold, 2002). We first checked the instrument equivalence (IE) by confirming the back-translation of the questionnaire language (Brislin, 1970). The implementation of this questionnaire followed the principle of two-way translation (Harkness, 2003). First, we asked a Taiwan citizen who spoke fluent English to translate the original English version of the questionnaire into Traditional Chinese in Taiwan. Second, we asked an American who spoke fluent Chinese traditional to translate the Traditional Chinese questionnaire into English. Third, we chose an individual who was fluent in both Traditional Chinese and English to assess the clarity and comprehensiveness of the translation questionnaire and confirm the quality of the Traditional Chinese translation. Meanwhile, the Simplified Chinese questionnaires in Fujian underwent the same process.

Table 1 Population, planned sample structure, and empirical samples frequency

Unit: million, person, %

Demographics of population	Items	Popolation TW; FJ		Percent TW; FJ
Gender	Male	7.91; 21.10		50.4%; 51.0%
	Female	7.78; 20.27		49.6%; 49.0%
Age	15-19 years old	2.14; 7.09		13.7%; 17.1%
	20-29 years old	3.10; 9.54		19.7%; 23.1%
	30-39 years old	3.49; 9.78		22.3%; 23.6%
	40-49 years old	3.68; 8.96		23.4%; 21.7%
	50-59 years old	3.27; 5.99		20.9%; 14.5%
Total	---	15.7; 41.3		100.0; 100.0
450 planned sample structure	Male TW; FJ	Female TW; FJ		Total TW(%); FJ (%)
15-19 years old	16; 20	15; 19		31(13.8%); 39 (17.3%)
20-29 years old	22; 26	22; 26		44(19.6%); 52 (23.1%)
30-39 years old	25; 27	25; 26		50(22.2%); 53 (23.6%)
40-49 years old	26; 24	26; 24		52(23.1%); 48 (21.3%)
50-59 years old	24; 16	24; 17		48(21.3%); 33 (14.7%)
Total	113; 113	112; 112		225(100.%); 225 (100%)
450 empirical samples	Category	Count TW; FJ	Percentage TW; FJ	Cumulative percentage TW; FJ
Gender	Male	113; 113	50.5%; 50.5%	50.5%; 50.5%
	Female	112; 112	49.5%; 49.5%	100.0%; 100.0%
Age	15-19 years old	47; 38	20.9%; 16.9%	20.9%; 16.9%
	20-29 years old	40; 52	17.8%; 23.1%	38.7%; 40.0%
	30-39 years old	46; 53	20.4%; 23.6%	59.1%; 63.6%
	40-49 years old	45; 49	20.0%; 21.8%	79.1%; 85.4%
	50-59 years old	47; 33	20.9%; 14.6%	100.0%; 100.0%
Total	--	225; 225	100.0%; 100.0%	100.0%; 100.0%

Source: Department of Household Registration, Ministry of the Interior. Republic of China (Taiwan) (2020); TWNIC (2020); CNNIC (2020); TW is Taiwan and FJ is Fujian.

Table 2 The Means and Standard Deviation of Respondent Profile

Variable	Mean			Standard Deviation		
	Overall	Fujian	Taiwan	Overall	Fujian	Taiwan
Immediacy (IM)	3.835	3.693	3.977	1.613	1.943	1.240
Flow (FL)	3.665	3.710	3.621	1.787	2.066	1.510
Utilitarian Value (UV)	4.349	4.290	4.408	0.990	1.176	0.798
Hedonic Value (HV)	4.109	4.071	4.146	1.443	1.640	1.246
Social Value (SV)	3.433	3.486	3.381	1.900	2.116	1.686
Purchase Intention (PI)	3.772	4.101	3.443	1.660	1.559	1.528

We further employed a multigroup comparison analysis (MCA) to examine the results of a measurement equivalence test (MET) in Table 3 (Steenkamp & Baumgartner, 1998). We first adopted an unconstrained (free) model with unlimited structural path coefficients as the baseline model (De Wulf, Odekerken-Schröder, & Iacobucci, 2001). We then added constraint conditions when we assessed whether the model fit was weakened significantly in evaluating configural, metric, scalar, and residual equivalence (Vandenberg & Lance, 2000). We followed a step-by-step process to examine four levels in the measurement equivalence test (Milfont & Fischer, 2010; Van de Schoot, Lugtig, & Hox, 2012). First, configural equivalence was the lowest level, which was tested by running a model showing that the intercepts were free, but the factor loadings were equal among those groups. Therefore, the configural equivalence required respondents from different groups to produce the same weights of the construct. Second, metric equivalence was at the middle level, which was tested by running a model showing that the factor loadings were free. The intercepts were set as equal, which ensured that the underlying meanings of the items were presented similarly (i.e., measurement intercepts). Third, scalar equivalence was at the middle-high level, which was tested by running a model in the factor loadings. The intercepts were set as equal, which confirmed the structural covariances in each group. Fourth, residual equivalence was the highest level, which was tested by running a model in which the residuals were set as equal, which ensured that the error variance was equal. The model comparison process was stopped when the model fit was unacceptable (Rutkowski & Svetina, 2014).

3.3 Empirical Results

Regarding the reliability and validity analysis, this study computed Cronbach's α-value for IM, FL, UV, HV, SV, and PI (0.945, 0.916, 0.807, 0.930, 0.878, and 0.929, respectively), that all were larger than 0.7. This study computed the composite reliability (CR) value 0.945, 0.913, 0.809, 0.941, 0.878, and 0.927 for IM, FL, UV, HV, SV, and PI, respectively, and each construct stood sound reliability for the CR exceeded 0.6, showing that holding internal consistency (Fornell & Larcker, 1981). As to convergent validity, this study computed the AVE value: 0.683, 0.638, 0.515, 0.763, 0.706, and 0.681 for IM, FL, UV, HV, SV, and PI, respectively. The convergent validity held with the AVE larger than 0.5 (Fornell & Larcker, 1981). Determine discriminant validity, this study tested the AVE for each construct in a pair to exceed the square of the phi-coefficient for that pair, and all the inner construct correlations (the phis) were significantly below 1.0 (Batra & Sinha, 2000). This study indicated that the AVE of IM, FL, UV, HV, SV, and PI were greater than the phis (0.464, 0.458, 0.361, 0.506, 0.475, and 0.436, respectively). Therefore, the discriminant validity was stood. In addition, this study calculated all the loading value surpassing 0.4, and construct validity was obtained (Fornell & Larcker, 1981). Table 4 lists the results.

This study employs Harman's one-factor analysis with unrotated principal components approach to examine common method variance (CMV) issue (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). There were six factors (with eigenvalues) larger than 1.0, rather than a single factor (using 14 constructs). The six factors added to achieved up to three-fourths among total variance (73.05%), and that the first factor loading was 46.39%; it was lower to 50%, indicating that no significant factor existed. Therefore, the CMV shortcoming was not an obvious problem here (Malhotra, Kim, & Patil, 2006).

Furthermore, this study computed that χ^2 / df = 4.398, that was held ranging to the threshold of [2--5] (Kline, 2011). Additionally, the goodness-of-fit index (GFI) was 0.868, adjusted GFI (AGFI) was 0.862, CFI was 0.953, and NFI was 0.940, indicating good fits (Browne & Cudeck, 1992; MacCallum & Hong, 1997). Furthermore, this study indicated that RMSR was 0.044 and RMSEA was 0.087 which fit the criterion RMSR (< 0.05) and RMSEA (< 0.10) showed a reasonable fit (Hu & Bentler, 1999; Schumacker & Lomax, 2004). Table 5 shows that these coefficients were all significant, therefore, we accepted all hypotheses.

Table 3 Results of multigroup comparison and measurement equivalent test

Model and test	χ^2 (df)	Delta χ^2 (df) p-value	CFI	Delta CFI	TLI	Delta TLI	RMSEA	Delta RMSEA	Test
Baseline model (free)	1995.505 (898)	---	0.908	--	0.898	--	0.052	--	--
Configural equivalent test	2038.090 (934)	42.550 (26)**	0.907	0.001	0.900	0.002	0.052	0.000	Accept
Metric equivalent test	2247.771 (956)	252.265 (58)**	0.892	0.015	0.888	0.001	0.055	0.003	Accept
Scalar equivalent test	2339.823 (977)	344.318 (79)**	0.886	0.006	0.884	0.004	0.056	0.001	Accept
Residual equivalent test	2455.677 (1009)	460.172 (111)**	0.879	0.007	0.881	0.003	0.057	0.001	Accept

Notes: ** = p-value < 0.01, the criterion of delta χ^2 (df) should < 0.05, delta CFI should < 0.02, delta TLI should < 0.02, and delta RMSEA should < 0.05.

This study further divided our data into two sub-groups (Taiwan and Fujian). This study employed a chi-square difference test to explore the sub-groups to operate this result helpful because the one-way ANOVA analysis showed that nation affects purchase intention ($F = 6.608$; $p = 0.001$). The hypothesis testing results for Taiwan and Fujian are shown in Table 6.

From Table 6 below, it shows that the hypotheses for Taiwan were all supported, but the hedonic value's positive impact on purchase intention was not supported in Fujian group ($t = 1.797$, $p = 0.072$).

Table 4 Summary of reliability and validity analysis (whole sample)

Variable	Constructs / Dimensions	Cronbach's α	Factor Loading	CR	AVE
Immediacy (IM)	Spatial distance	0.945	0.858	0.945	0.683
	Temporal distance		0.797		
	Social distance		0.820		
Flow (FL)	Time distortion	0.916	0.738	0.913	0.638
	Detachment from reality		0.852		
	Attention focus		0.802		
Utilitarian Value (UV)	Instrumental value	0.807	0.715	0.809	0.515
	Ease of use		0.725		
Hedonic Value (HV)	Enjoyment	0.930	0.877	0.941	0.763
	Exploration		0.870		
Social Value (SV)	Status	0.878	0.842	0.878	0.706
	Self-esteem enhancement		0.840		
Purchase Intention (PI)	Intention to buy	0.929	0.772	0.927	0.681
	Overall satisfaction		0.873		

Note: Composite reliability (CR) = (sum of standardized loading)^2/ [(sum of standardized loading)^2 + (sum of measurement error)]; Average variance extracted (AVE) = (sum of square standardized loadings2) / [(sum of square standardized loadings2) + (sum of measurement error)].

Table 5 Results of research hypothesis

Hypothesized path	Coefficient	t- value	Test	VIF	R^2	f^2
H_{1a}：IM → UV	β_{1a} = 0.381	4.930**	Non-reject	1.788	0.289	0.092
H_{1b}：IM → HV	β_{1b} = 0.325	5.625**	Non-reject	1.788	0.403	0.193
H_{1c}：IM → SV	β_{1c} = 0.274	4.404**	Non-reject	1.788	0.361	0.163
H_{2a}：FL → UV	β_{2a} = 0.382	4.875**	Non-reject	1.788	0.263	0.075
H_{2b}：FL → HV	β_{2b} = 0.522	8.699**	Non-reject	1.788	0.429	0.231
H_{2c}：FL → SV	β_{2c} = 0.544	8.402**	Non-reject	1.788	0.398	0.199
H_{3a}：UV → PI	β_{3a} = 0.304	4.880**	Non-reject	1.590	0.315	0.115
H_{3b}：HV → PI	β_{3b} = 0.213	3.734**	Non-reject	2.196	0.401	0.211
H_{3c}：SV → PI	β_{3c} = 0.339	5.783**	Non-reject	1.713	0.351	0.149
Significance ratio				100% (=9/9)		

Fit indices	Criterion	Measures
χ^2 / df	$2 < \chi^2 / df < 5$	2.691
CFI	> 0.9	0.936
NFI	> 0.9	0.902
GFI	> 0.8	0.864
AGFI	> 0.8	0.862
RMSEA	< 0.08	0.061
RMSR	< 0.05	0.052

Note: Based on one-tailed test: for t-value greater than 1.96 or smaller than -1.96 (*); for t-value greater than 2.58 or smaller than -2.58(**).

Table 6 Model comparison between Taiwan and Fujian groups

Items	The Fujian group			The Taiwan group		
	Estimate	t-value	p-value	Estimate	t-value	p-value
IM → UV	0.505	4.248**	0.001	0.327	3.203**	0.002
IM → HV	0.252	2.962**	0.003	0.404	5.044**	0.001
IM → SV	0.260	3.181**	0.001	0.343	3.635**	0.001
FL → UV	0.271	2.369*	0.018	0.453	4.161**	0.001
FL → HV	0.583	6.570**	0.001	0.467	5.669**	0.001
FL → SV	0.607	7.147**	0.001	0.411	4.243**	0.001
UV → PI	0.361	3.674**	0.001	0.314	4.375**	0.001
HV → PI	0.154	1.797*	0.072	0.348	5.293**	0.001
SV → PI	0.286	3.152**	0.002	0.387	6.050**	0.001
GFI		0.922			0.912	
AGFI		0.893			0.881	
CFI		0.936			0.935	
NFI		0.915			0.917	
RMSR		0.055			0.041	
RMSEA		0.080			0.076	
χ^2 / df		3.604			2.107	

4.CONCLUSIONS

4.1 Conclusions

This study examined the factors (i.e., immediacy and flow) in LVSS to affect perceived values and then influence users' purchase intention. Empirical results showed that the purchase intention was triggered by two main paths. The first path indicated that the flow state positively affected the social value ($ß_{2c}$ = 0.544), which positively affected purchase intention ($ß_{3c}$ = 0.339). The second path showed that the flow state positively affected hedonic value ($ß_{2b}$ = 0.522), which positively affected purchase intention ($ß_{2b}$ = 0.213). This study indicated that flow state played a critical role than immediacy in affecting purchase intention in LVSS because the flow state created by engagement in LVSS was promoted to enhance consumers' intrinsic motivation in e-marketing. Flow state is more powerful than immediacy. Since flow factor is regarded as a type of social presence that utilize viewers completely immersed, while immediacy factor is regarded as another type of social presence that utilize viewer's synchronous interaction. Additionally, regarding the priority ranking of perceived value in LVSS, social value was first, hedonic value was second, and utilitarian value was third. In sum, the flow factor is promised to affect social and hedonic value, which is significantly higher than the immediacy factor to affect social and hedonic value. These results indicated that social and hedonic values are enhanced by engaging in multiple cues.

4.2 Academic Contributions

Regarding the academic contributions, we found that two independent variables (immediacy and flow) had direct effects on perceived value and the most significant path was the state of flow in LVSS rather than immediacy. These results were consistent with social presence theory (Biocca, 1997; Chen & Liao, 2022; Huang et al., 2022; Li et al., 2021), the flow state's influence on social and hedonic value is significantly higher than the immediacy's influence on social and hedonic value. Moreover, these results were consistent with flow theory (Chen & Lin, 2018; Hazari et al., 2017; Li et al., 2018; Perez-Vega et al., 2016; Rintamäki et al., 2006). The flow theory was augmented by investigating the causal relationships between flow and three types of perceived value in LVSS in e-marketing in this study.

The novelty of this study is that it explored the role of flow state in LVSS, showing that multiple cues enhanced the possibility of entering a state of flow. Furthermore, social value was shown to own a greatest mediation effect on purchase intention in LVSS. This study contributes to the theoretical literature on perceived value by explaining a mechanism of social value and flow affecting social value based on social presence theory.

4.3 Practical Implications

Regarding the practical implications of our findings, marketing managers and businesses are recommended to create enhanced immediacy and flow state in LVSS, thus enhancing the perceived value in both Taiwan and Fujian markets. Because watching LVS is a time-consuming activity, we also suggest that sellers plan and prepare more activities (e.g., games and sales), thus creating content that continuously attracts customers. Furthermore, the interactions (e.g., quickly answering the question from customers) between seller and customers should be strengthened to create trustworthy relationships between both sides. Motivated users could benefit from immediacy and flow in the LVSS environment, thus creating hedonic and social value. Thus, users would feel more engaged in LVSS, which could increase their purchase intentions.

From the perspective of perceived value, utilitarian value was significant in both samples, which is consistent with Li et al. (2018). The more attractively that LVSS content is presented, the higher the participation of users. Its significance as an instrumental utility should not be neglected. Therefore, it is recommended that businesses strengthen the instrumental value of their LVSS platforms, such as by enhancing interactions, information disclosure, and the immediacy of

responses to reduce buyers' uncertainty. Providing sufficient details about products could directly enhance utilitarian value in both Taiwan and Fujian.

Our findings showed that hedonic value did not play a significant role in enhancing purchase intention in the Fujian sample. We suggest that businesses could collaborate with streamers to focus on providing enjoyment. Streamers not only introduce product information but also interact with users, providing entertainment and thus reducing their boredom, thereby creating hedonic value. Furthermore, a surprising finding was that the little-known social value was shown to be effective in this study. Thus, marketing managers should consider social value as a means of facilitating the purchase intentions of customers. Service marketers could enhance the professional or personalized image of the online store perceived by the customers, who could associate it with their self-image and thus be more willing to participate in their online community (e.g., match and pursue fashion through LVSS). In addition, marketers could enhance the sense of community and link it to the internal driving force of social value. Consumers could enjoy socializing in this community, thereby enhancing their self-concept, which would then add social value.

4.4 Limitations

There are four limitations here. First, this study did not focus on a specific product category, which may have led to less precise information about product type and price level (Liu, Li, Mizerski, & Soh, 2012). Future research could extend the current study to include specific product categories and a distinct platform to improve the generalizability of the findings. Second, further study is needed to investigate the specific role of streamers, such as privately consumed versus publicly consumed, and to test the categories of marketing products, such as free gifts versus bundled products. Third, the sample size can be enlarged. It is suggested to gather data from larger than 1,200 samples to decrease the chance of statistical biases. However, in our study, budget difficulty lowered the samples to 450, and did not include the non-Asian sample, which should be improved in future research. Fourth, the live platforms Taobao Live and PChome in LVSS were investigated. If another famous social media platform (e.g., YouTube, Instagram, and Facebook) were included, different effects on e-commence platforms might be determined. Therefore, cross-media comparisons might yield better results.

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