Article

The Influence of Characteristics of Mobile Live Commerce on Purchase Intention

Chae Hyun Lee [1], Han Na Lee [2] and Jeong Il Choi [1,*]

1   School of Business Administration, Soongsil University, Seoul 06978, Republic of Korea
2   Global Airline Service Department, Induk University, Seoul 01878, Republic of Korea
*   Correspondence: jichoi@ssu.ac.kr; Tel.: +82-2-820-0561

Abstract: Mobile live commerce is emerging as a new distribution channel as connectivity and information sharing become easier due to the increase in the use of SNS and mobile phones. Nevertheless, there is a lack of research in this field, and it is meaningful to look at how this new technology-based commerce leads to purchase intention in terms of the value of shopping perceived by consumers. This study aims to (1) analyze the characteristic factors of mobile live commerce, which is rapidly emerging due to brisk changes in the distribution industry in the non-contact era; and (2) verify the relationship between shopping value and purchase intention. We analyzed 283 surveys using partial least squares structural equation modeling (PLS-SM) with statistical product and service solutions (SPSS) and R-programming. We inferred that convenience, ubiquity, social presence, attractiveness, and vividness were the characteristics of mobile live commerce that had a positive effect on the pleasure value, and that social presence, attractiveness, vividness, professionalism, information quality, and compatibility had positive effects on the perceived value. The hedonic value also had a positive effect on the perceived value, and both pleasure and perceived values had strong positive effects on the purchase intention. However, the professionalism of the sources did not affect the hedonic value, and the convenience and ubiquity did not affect the perceived value.

Keywords: mobile live commerce; hedonic value; perceived value; purchase intention

1. Introduction

The convenience of mobile shopping has increased with its recent popularization, and mobile e-commerce has transformed into a mobile-shopping environment that can be used without space–time constraints. Particularly, when COVID-19 broke out at the end of 2019, there was a greater increase in online shopping than in offline shopping. As the sales of goods and services on online platforms continued to increase, the frequency of mobile shopping also started increasing. According to an online trend obtained by the National Statistical Office in September 2020, online shopping transactions have increased by 30.7% year-on-year, and mobile shopping transactions account for 64.8% of these transactions [1].

With the changes in the contactless economy, the distribution channels of mobile commerce have also changed, and the mobile commerce market has been expanding accordingly. With the increase in people engaging in personal broadcasting on social networking sites (SNSs) such as YouTube and Instagram, and the resultant combination of mobile and live commerce, distribution channels are changing. The spread of smartphones is expanding, and the percentage of customers using the Internet with smartphones is increasing. Mobile shopping market sales grew from USD 1.3 billion in 2012 to USD 32.6 billion in 2017 [2]; USD 137.5 trillion was achieved in 2020; and live broadcast users exceeded 617 million as of December 2020 [3]. Live commerce using smartphones is also expected to grow, and the success or failure of fierce competition in this live commerce distribution industry is expected to be determined by the enjoyment of use and the intention to continue using it.

In this study, we have analyzed the characteristics of mobile commerce to identify factors that influence the shopping value and purchase intention. First, we examined the characteristics of mobile live commerce to increase our understanding of it and then we examined the relationship between these characteristics and the purchase intention by dividing the shopping value into hedonic and perceived values. Therefore, the theoretical background and previous research of mobile live commerce and each characteristic were summarized; based on this, a research model was proposed, and the results were derived. Based on this, we have provided research implications to promote the increase in activities and growth of influencers in enterprises and the integration of live commerce with mobile commerce in the distribution industry.

2. Literature Review

2.1. Mobile Live Commerce

Mobile live commerce is a new method to transmit media in network streaming, wherein clients communicate with information in real time using the Internet, images, text, and videos within mobile devices through multimedia formats [4]. The platform of live commerce has the characteristics of online and offline shopping convergence that allows real-time communication with broadcasters, such as purchasing products directly from offline stores, while providing convenience for online shopping [5]. Mobile commerce is drawing fresh attention from distribution channels. Particularly, it differs from existing e-commerce as a platform wherein sellers, and consumers can communicate through real-time streaming channels using e-commerce media on the Internet and thereby interact with products and services [5–7]. In other words, mobile live commerce will grow into a new paradigm where consumption activities accelerate in China's digital economy and online after COVID-19. Countries other than China are actively introducing it through live commerce platforms, and it is predicted as a distribution industry that can be further expanded in a few years [8].

2.2. Service Characteristics of Mobile Live Commerce

Mobile commerce can be defined as e-commerce in a mobile environment that connects anytime, anywhere through a network, shares information, and purchases products. Service characteristics of such mobile commerce include ubiquity, accessibility, convenience, security, location verification, personalization, and immediate accessibility. Among these various characteristic factors, this study was conducted by extracting convenience, ubiquity, and social presence as service characteristics.

Convenience is still an important factor in technology-based self-services, mainly in social, cultural, and economic fields; achieving a goal with the shortest amount of effort compared to the cost has been defined as convenient [9]. Regarding the functions of mobile devices, they can be accessed anytime and anywhere while moving, enabling them to provide service functions more frequently; these can be considered the biggest advantages of mobile commerce [10].

Ubiquity is a characteristic that offers flexibility and convenience on the Internet and has a significant impact on the accommodation of mobile information technology [11]. Companies can typically obtain information whenever and wherever they want, including when consumers are obtaining access through mobile devices [12]. In e-commerce, connectivity with consumers is important and involves providing access to information, which can affect sales.

Social presence also refers to social existence, which represents the sense of coexistence and social intimacy that individuals feel with one another [13]. A sense of reality is a practical state that makes one mistake it as if it really happened [14]. This makes it feel as though one is together with another; it can be defined as a sense of social reality [15].

2.3. Information Source Characteristics of Mobile Live Commerce

Information sources act as a medium for efficient advertising as a means of communication of advertisements. Therefore, the effect on persuasion varies depending on the source's credibility, such as experience, reliability, expertise, and business motivation, depending on which source delivers it. In this study, attraction, vivacity, and experience were extracted as basic attributes of information sources.

Attractiveness can be divided into physical and psychological attractiveness [16]. Research on the attractiveness of informants has revealed that the attractiveness and persuasiveness of informants depends on the degree of familiarity an individual has with the informant [17,18]. The attractiveness of a source increases the interest the consumer shows toward the messages they convey [18,19].

Vividness comes from emotional fun; imagination; and temporal, spatial, and emotional familiarity. It is important to specify and characterize concreteness and actuality when conveying information [20]. The more specific the messaging of lively information is over that of abstract information, the greater the impact of the information [21].

Expertise is the degree to which an informant correctly answers, presents, or perceives the topic or problem they want to convey [22] and is defined as the awareness that consumers have in providing correct responses and making accurate judgments about the topics and issues of the messages conveyed by the informant [23].

2.4. System Characteristics of Mobile Live Commerce

Traditionally, the success model of an information system measured the success factors of a system by dividing it into information quality and system quality [24], and accessibility means that people can connect anytime, anywhere when they need services. In addition, in order to increase mobility in mobile commerce, compatibility in the payment system is expected to have an important influence on the intention to introduce a new system.

Information quality indicates the speed at which meaningful information is delivered, its accuracy, and its level of usefulness to users [25]. Regarding high information quality, an enterprise can provide consumers with information about a product by utilizing information systems so the consumers can recognize the product [26].

Compatibility between various systems is essential when multiple devices are used to provide services and is particularly important for mobile devices. Compatibility represents the convenience users have when utilizing these devices and their offline and online payment systems [27]. Additionally, it is important for information technology users to harmonize and recognize life values, ways of doing things, and experiences [28].

2.5. Value of Consumption

The level of enjoyment consumers has in shopping is directly related to their satisfaction with the product and their pursuit of hedonic values [29]. Consumers use mobile commerce for purposes such as social exchanges and information acquisition, while satisfying various purchasing needs. To obtain pleasure from shopping, consumers also select a market that reflects their subjective feelings [30].

Hedonic value is an important factor in shopping behavior. Consumers tend to be satisfied with a product and enjoy the shopping experience more when they pursue hedonic value [29]. Additionally, hedonic value can be considered a measure of the subjective or personal empirical benefits that buyers enjoy from shopping daily and the emotional stimulation provided by goods or services [31,32].

Perceived value refers to the value that consumers gain from purchasing goods or using services [33]; it refers to a consumer's personal beliefs [34]. It has been recognized as an important concept that determines the consumer behavior even in mobile environments [35].

2.6. Purchase Intention

Purchase intention represents the subjective behavior of a consumer, such as the beliefs and attitudes they have about a product [36]. It was also defined as the possibility that a

belief or attitude leads to an act or action of purchase [37]. Purchase intention also refers to the subjective possibility or personal condition of consumers, including the relationships among their purchasing attitudes, knowledge, and behavior.

Additionally, purchase intention is a consumer's preference for an entity, which is a subjective personal belief that modifies their future planned behavior, including their emotional, perceptual, or consumption behavior before and after a purchase [38]. Purchase intention also refers to the degree to which a consumer would want to purchase a product online [39]. Information systems in the field of online shopping have been proven to facilitate purchases or repurchases [40].

3. Research Model and Hypothesis Testing

3.1. Research Model

The purpose of this study is to examine the influence of the characteristics of mobile live commerce on the hedonic value and perceived value of a product and the effect of the relationship between the two parameters on the purchase intention. To this end, we categorized service characteristics as convenience, ubiquity, and social presence; information source characteristics as attractiveness, vividness, and expertise; and system characteristics as information quality and compatibility. Additionally, we separated shopping values into hedonic and perceived values and examined their relationship with purchase intention. The research model is schematically shown in Figure 1.
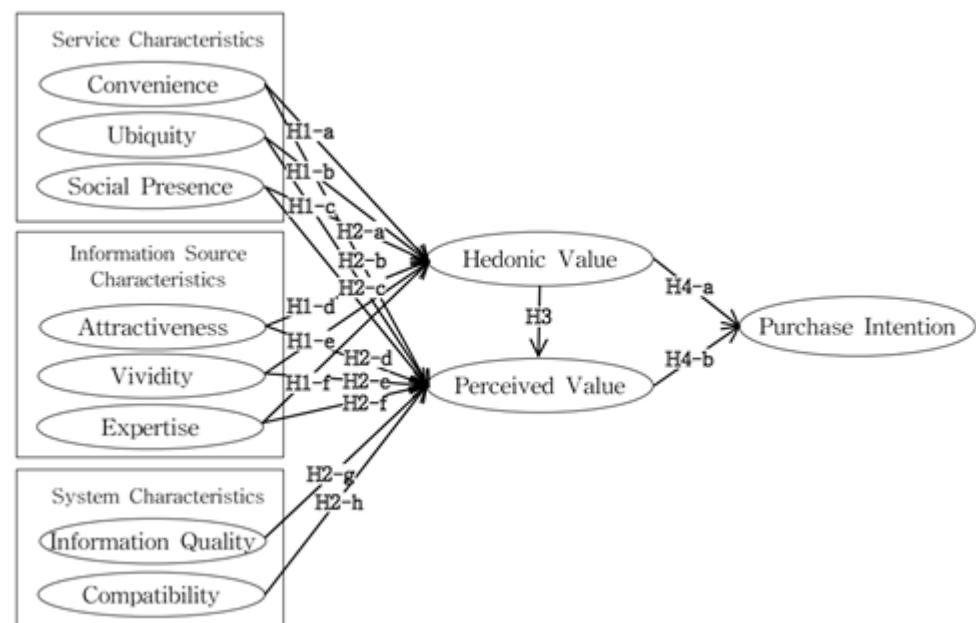

Figure 1. Research model.

3.2. Hypothesis Development

3.2.1. Relationship between Characteristics of Mobile Live Commerce and Hedonic Value

The hedonic value is related to the immediate pleasure response, which reflects the pleasure and emotional value of buyers in shopping [41]. To understand consumer behavior and value, we should not only observe theoretical aspects but also consider empirical factors such as fun and emotion [42]. In particular, consumption behavior that pursues pleasure value has more important meaning than purposive shopping behavior [43]. This suggests that spontaneous consumption behavior leads to hedonic pleasure and satisfaction [44]. Therefore, in mobile live commerce, hedonic value has a significant relationship. Ubiquity refers to the free accessibility of something anytime and anywhere; it is considered the most well-researched aspect of the mobile commerce environment and has been referenced in many previous studies [12]. The formation of social realism in the web interface has

been shown to have a positive impact on the development of trust and enjoyment that a consumer feels for a product [45].

Hypothesis 1 (H1). *Characteristics of mobile live commerce have a positive effect on hedonic value.*

Hypothesis 1-a (H1-a). *Convenience has a positive effect on hedonic value.*

Hypothesis 1-b (H1-b). *Ubiquity has a positive effect on hedonic value.*

Hypothesis 1-c (H1-c). *Social presence has a positive effect on hedonic value.*

Hypothesis 1-d (H1-d). *Attractiveness has a positive effect on hedonic value.*

Hypothesis 1-e (H1-e). *Vividness has a positive effect on hedonic value.*

Hypothesis 1-f (H1-f). *Expertise has a positive effect on hedonic value.*

3.2.2. Relationship between Attributes of Mobile Live Commerce and Perceived Value

The prevalence of mobile devices has increased, and users can find the information they want immediately regardless of time and place. It has been verified in many previous studies that customers affect perceived value in general shopping. It is worth not only general consumption but also psychological satisfaction. Customers have a unique experience with preferences in consumption [46]. This can be seen as the need for customers to recognize both the rational evaluation of the product and the emotional desire [47]. As such, mobile live commerce has been seen as a facilitator as an important application for businesses and customers rather than purchases with a purpose for customers [48–50]. It has been shown that the motivation and participation salespeople show in advising consumers about a product affects its perceived value [51].

Hypothesis 2 (H2). *Characteristics of mobile live commerce have a positive effect on perceived value.*

Hypothesis 2-a (H2-a). *Convenience has a positive effect on perceived value.*

Hypothesis 2-b (H2-b). *Ubiquity has a positive effect on perceived value.*

Hypothesis 2-c (H2-c). *Social presence has a positive effect on perceived value.*

Hypothesis 2-d (H2-d). *Attractiveness has a positive effect on perceived value.*

Hypothesis 2-e (H2-e). *Vividness has a positive effect on perceived value.*

Hypothesis 2-f (H2-f). *Expertise has a positive effect on perceived value.*

Hypothesis 2-g (H2-g). *Information quality has a positive effect on perceived value.*

Hypothesis 2-h (H2-h). *Compatibility has a positive effect on perceived value.*

3.2.3. Relationship between Hedonic and Perceived Values

Studies on online shopping behavior have shown that pleasure influences the formation of shopping attitudes [52]. In the 2000s, consumer value was established as a concept that included hedonic value, an empirical consumption value such as pleasure or the aesthetic characteristics of a product perceived by a consumer when purchasing it [53]. As the era of offline shopping changes to the Internet market through online shopping, the value of consumption is also changing. As consumption is not conducted face-to-face, the

value of shopping can be said to be valuable only when it includes trust and trust. Perceived hedonic value has emerged as an important concept in understanding consumption activities from an empirical point of view, and research on hedonic value is being actively conducted in the field of marketing to predict shopping immersion in online shopping [54]. In addition, the measurement dimension of perceived value can be said to be the value of seeing the emotional and psychological responses customers feel after consumption [55].

Hypothesis 3 (H3). *Hedonic value has a positive effect on perceived value.*

3.2.4. Relationship between Shopping Value and Purchase Intention

Since the 1990s, perceived value has emerged as an important factor in the consumer industry. Customers' perceived value is considered important, and interest from academia and the consumer industry continues [47]. The degree that the needs of consumers are satisfied influences their shopping experience [56]. Studies on online shopping behavior have shown that pleasure affects the formation of shopping attitudes [52]. Hedonic value has a significant impact on consumer purchases [57]. Many studies have verified the effect of perceived value on purchase intentions [58–61].

Hypothesis 4 (H4). *Shopping value has a positive effect on purchase intentions.*

Hypothesis 4-a (H4-a). *Hedonic value has a positive effect on purchase intentions.*

Hypothesis 4-b (H4-b). *Perceived value has a positive effect on purchase intentions.*

3.2.5. Operational Definitions for Variables and Questionnaire

In this study, the characteristics of mobile commerce have been presented individually as service, information source, and system characteristics. The perception of consumers by the questionnaire method was measured through a five-point Likert scale with options ranging from "Not at all" to "Strongly Yes".

First, convenience, which is a service characteristic in mobile live commerce [62,63], is defined as the degree to which it is easy to use or learn about mobile devices. The survey questions measured the (1) overall convenience, (2) ease of using the devices, (3) ease in learning how to use them, (4) simplicity in understanding them, and (5) ease in using them. Ubiquity [12,64,65] is defined as the degree to which a product is always available. The questions measured (1) the extent to which anyone could use the product, (2) the portability of the product and immediacy in using it, (3) its immediate accessibility, (4) the ease with which information on it could be obtained at any time, and (5) the ease with which information on it could be obtained anywhere. Social presence is defined as the degree of coexistence and bond between viewers [66,67]. The questions measured (1) the extent to which users could detect the presence of other viewers, (2) the extent to which they could feel the same things as other viewers did, (3) the extent to which they could empathize with the message in the chat box, (4) the extent to which they felt that the content in the chat box would be delivered to other people, and (5) the extent to which the conversation in the chat box affected consumers.

Second, attractiveness, which is an information source characteristic, is defined as the degree to which sources can build good relationships with viewers and demonstrate personal philosophies, values, and abilities [68–70]. The survey questions measured (1) the level of the sources' affinities, (2) their senses of humor, (3) their speaking skills, (4) their ability to express themselves via gestures, and (5) their ability to have a conversation. Vividness is defined as the degree to which the information delivered by sources feels specifically vivid for the user in a context [20,71].

The survey questions measured the extent to which the sources (1) provided sympathetic information, (2) provided specific information, (3) provided realistic information, and (4) conveyed the feeling of what they really experienced. Expertise is defined as the

degree to which sources can convey information such that the consumer can accurately judge it [23,72]. The survey questions measured the (1) persuasive power of the sources, (2) proficiency of the sources in explaining the products, (3) extent to which the information service provides objective information about the products, (4) extent to which the sources have rich experiences and careers, and (5) level of expertise of the sources.

Third, information quality, one of the characteristic factors of mobile live commerce systems, is defined as the degree to which details such as information accuracy, image association, information timeliness, modernity, and diversity are provided [73,74]. The questionnaire measured the extent to which the following were provided: (1) sufficient commodity information, (2) varied commodity information, (3) detailed commodity information, (4) clear commodity images, and (5) up-to-date commodity information. Compatibility is defined as the degree to which mobile live commerce is consistent with the beliefs, values, past experiences, and desires of consumers when being used [27,75]. The questionnaire measured the degree to which the live commerce environment (1) matched the consumer's payment style, (2) resembled the payment service they used in the past, (3) was suitable for their daily life, (4) was compatible with their card or bank account, and (5) was compatible with another payment service.

Fourth, the hedonic shopping value is defined as the pleasure a consumer feels in using mobile live commerce [76–78]. The questionnaire measured the (1) degree of fun experienced by a consumer in using mobile live commerce, (2) degree of pleasure in using it, (3) degree to which consumers frequently used it, (4) degree to which they obtained pleasure in using it, and (5) degree of complex reality associated in the experience of using it. Perceived value is defined as the total service value of a product evaluated by a consumer relative to the price spent through mobile live commerce for the overall service, system, and service quality of the sources [79,80]. The questionnaire measured the degree of (1) value in use, (2) value in obtaining information about a variety of goods, (3) benefit in not losing out on purchasing the product, (4) value in making efforts to purchase a product, and (5) useful value for consumers.

Finally, the intention is defined as the degree of willingness to purchase a product [81,82]. The questionnaire measured the (1) willingness of a consumer to purchase a product, (2) willingness to talk to others, (3) willingness to share the product with others, (4) willingness to recommend it to others, and (5) willingness to make purchases continually.

4. Research Model and Results

4.1. Sample Design and Data Collection

The survey in this study was conducted by buyers who purchased devices through mobile live commerce more than once, and the data were collected through questionnaires distributed online for about two weeks in August 2021; 350 surveys were collected, and 283 were used for the analysis and verified after the unusable responses were excluded. For empirical analysis, SPSS 22.0 was used, and frequency analysis, reliability, validity, and path analysis were verified using open source (GNU), programming language R version 4.0.2 for data processing, statistical calculation and analysis, and graphics.

4.2. Characteristics of Participants

Regarding the demographic characteristics in this study, as shown in Table 1, the proportion of males, which was 52.3%, was slightly higher than that of females, which was 47.7%. Regarding the age groups of the participants, 31.4, 30.4, and 31.1% were in their 20s, 30s, and 40s, respectively, with office workers accounting for the highest proportion i.e., 72.4%.

Table 1. Descriptive statistics of respondents.

Category	Sub-Category	Frequency	%
Gender	Female	135	47.7
	Male	148	52.3
Age	20–29	89	31.4
	30–39	86	30.4
	40–49	88	31.1
	Over 50	20	7.1
Occupation	Office workers	205	72.4
	Self-employed	9	3.2
	Students	36	12.7
	Housewives	13	4.6
	Unemployed	7	2.5
	Others	13	4.6

4.3. Reliability and Feasibility Study

4.3.1. Reliability Analysis

The external reliability of a model can be evaluated using the internal consistency reliability and indicator reliability; it can be used to obtain the internal reliability of the variables if they meet a baseline of 0.6 or more for the Cronbach's alpha coefficient parameter [83]. Reliability can be said to be acceptable when the DG-rho value, which seems to be suitable for reliability analysis, is 0.7 or higher [84].

As shown in Table 2, the analysis of the internal consistency reliability showed that the Cronbach's alpha coefficient value was higher than 0.6, indicating that reliability is acceptable. All the DG-rho and Eig. 1st values were above 0.7 and 1.0, respectively; all the values met the internal consistency reliability baseline.

Table 2. Results of reliability analysis.

	MVs	Cronbach's Alpha	DG-rho	Eig. 1st
Convenience	4	0.680	0.807	2.047
Ubiquity	4	0.688	0.810	2.069
Social Presence	3	0.601	0.790	1.669
Attractiveness	3	0.616	0.796	1.699
Vividness	3	0.656	0.813	1.778
Expertise	4	0.672	0.803	2.036
Information Quality	3	0.602	0.791	1.671
Compatibility	4	0.736	0.835	2.235
Hedonic Value	4	0.738	0.836	2.249
Perceived Value	4	0.716	0.825	2.162
Purchase Intention	4	0.774	0.855	2.386

MVs: Manifest variables.

4.3.2. Validity Analysis

PLS structural equation modeling (PLS-SEM) can be distinguished as concentration feasibility and discriminant feasibility, which presents the criteria for the discriminant feasibility assessment in the PLS-SEM as those for cross-loading and the Fornell–Larcker criterion [84]. In Table 3, all the average variance extracted (AVE) values are higher than 0.5, showing that concentration feasibility has been secured. Additionally, in the discriminant feasibility analysis, the value of the square root of the AVE values of the latent variables was greater than the correlation value of the latent variables; therefore, discriminant feasibility was also secured.

Table 3. Discriminant validity measurement.

	CON	UBI	SOP	ATT	VIV	EXP	INQ	COM	HEV	PEV	PUI	AVE
CON	0.712											0.507
UBI	0.483	0.717										0.514
SOP	0.320	0.417	0.744									0.554
ATT	0.401	0.360	0.388	0.752								0.566
VIV	0.426	0.372	0.425	0.520	0.769							0.592
EXP	0.372	0.334	0.413	0.493	0.580	0.712						0.507
INQ	0.463	0.495	0.461	0.448	0.542	0.518	0.746					0.556
COM	0.516	0.437	0.431	0.382	0.500	0.507	0.471	0.747				0.558
HEV	0.443	0.453	0.474	0.508	0.529	0.457	0.492	0.457	0.749			0.562
PEV	0.426	0.386	0.503	0.541	0.589	0.592	0.580	0.532	0.549	0.735		0.540
PUI	0.446	0.455	0.490	0.522	0.598	0.533	0.560	0.525	0.725	0.677	0.772	0.596

CON: convenience, UBI: ubiquity, SOP: social presence, ATT: attractiveness, VIV: vividness, EXP: expertise, INQ: information quality, COM: compatibility, HEV: hedonic value, PEV: perceived value, PUI: purchase intention, AVE: average variance extracted.

4.3.3. Statistical Hypothesis Testing

In this study, we utilized PLS-SEM, and the hypothesis test proceeded with 500 bootstrap resamplings using R-4.0.2. In Table 4, the hypothesis verification of the characteristics of mobile commerce and hedonic values shows that factors such as convenience (t = 2.248, p = 0.025), ubiquity (t = 2.679, p = 0.008), social presence (t = 3.564, p = 0.000), attractiveness (t = 3.520, p = 0.001), and vividness (t = 3.493, p = 0.001) have a positive effect on the hedonic value. However, expertise (t = 1.069, p = 0.286) did not affect the hedonic value. In a mobile live commerce environment, even those with limited professional experience can be fully active in the field; thus, expertise does not significantly affect the hedonic value.

Table 4. Results of path analysis.

Hypothesis		Path	Original	Mean. Boot	Std. Error	t-Value	*p*-Value	Result
H1	H1-a	CON → HEV	0.122	0.124	0.054	2.248	0.025 *	Accept
	H1-b	UBI → HEV	0.149	0.153	0.055	2.679	0.008 **	Accept
	H1-c	SOP → HEV	0.181	0.181	0.051	3.564	0.000 ***	Accept
	H1-d	ATT → HEV	0.194	0.195	0.055	3.520	0.001 ***	Accept
	H1-e	VIV → HEV	0.200	0.199	0.057	3.493	0.001 ***	Accept
	H1-f	EXP → HEV	0.076	0.076	0.071	1.069	0.286	Reject
H2	H2-a	CON → PEV	0.016	0.019	0.059	0.275	0.784	Reject
	H2-b	UBI → PEV	−0.040	−0.041	0.052	−0.766	0.444	Reject
	H2-c	SOP → PEV	0.129	0.135	0.051	2.534	0.012 *	Accept
	H2-d	ATT → PEV	0.147	0.145	0.057	2.597	0.010 **	Accept
	H2-e	VIV → PEV	0.134	0.135	0.057	2.326	0.021 *	Accept
	H2-f	EXP → PEV	0.181	0.177	0.055	3.268	0.001 *	Accept
	H2-g	INQ → PEV	0.180	0.180	0.057	3.171	0.002 *	Accept
	H2-h	COM → PEV	0.129	0.130	0.050	2.584	0.010 *	Accept
H3		HEV → PEV	0.123	0.122	0.058	2.130	0.034 *	Accept
H4	H4-a	HEV → PUI	0.506	0.507	0.043	11.823	0.000 ***	Accept
	H4-b	PEV → PUI	0.399	0.400	0.045	8.934	0.000 ***	Accept

Note: Significance: '***' 0.001, '**' 0.01, '*' 0.05.

Furthermore, the hypothesis validation with the characteristics of mobile commerce and perceived value showed that social presence (t = 2.534, p = 0.012), attractiveness (t = 2.597, p = 0.010), vividness (t = 2.326, p = 0.021), and expertise (t = 3.268, p = 0.001) had positive effects on the perceived value. Consequently, H2-c, H2-d, H2-e, H2-f, and H2-g were adopted, and H2-a and H2-b were rejected because convenience (t = 0.275, p = 0.784) and ubiquity (t = −0.766, p = 0.444) had no effect on the perceived value. In the age of

information technology, convenience and ubiquity are not regarded as perceived values but as ordinary values instead and thereby do not affect the perceived shopping value.

Among the shopping values, the hypothesis results for the hedonic and perceived values were (t = 2.130, *p* = 0.034), indicating that the hedonic value had a positive effect on the perceived value; thus, H3 was adopted. Finally, the path analysis between the shopping value and purchase intention showed that both the hedonic value (t = 11.823, *p* = 0.000) and perceived value (t = 8.934, *p* = 0.000) had a highly positive effect on the purchase intention. Thus, we can infer that in mobile live commerce, hedonic value has a greater impact on purchase intention than the other characteristics do.

5. Discussion and Implications

This study attempted to verify not only the relationship between the hedonic and perceived values but also how the characteristics of mobile live commerce affect purchase intention. Based on prior studies, the academic and practical implications and results that have provided the foundation for research on e-commerce in the mobile commerce distribution industry were researched.

First, all the service characteristics of mobile live commerce had a positive effect on the hedonic value, and excepting expertise, all the information source characteristics had a positive effect on attractiveness and vividness. This showed that the professional and experience levels of sources did not have a significant effect on the hedonic value.

Second, excepting convenience and ubiquity, which are service characteristics, all the characteristics of mobile live commerce, namely, the service characteristics, information source characteristics, and system characteristics, had a positive effect on the perceived value. Convenience and ubiquity are no longer perceived as value factors but are recognized as general and natural factors in the age of information technology.

Third, regarding the relationship between hedonic value, perceived value, and purchase intention in mobile live commerce, the hedonic value had a positive effect on the perceived value. Additionally, because both the hedonic and perceived values most significantly affected the purchase intention, as shown by the path analysis results, the hedonic value can be considered the most important factor in mobile commerce.

We live in a non-contact era, and new distribution channels are rapidly emerging. However, academic research on mobile live commerce in Korea is scarce. Therefore, this study will pave the way for research on mobile live commerce, which is growing as a new channel in the distribution industry. In particular, as the domestic mobile live commerce distribution industry is growing rapidly, we need to pay attention to the pleasure and perceived value that customers want. This should grow into a distribution industry where non-face-to-face shopping can be conducted freely in all aspects, including services, products, prices, and the process of providing products. This will be an opportunity for continuous development of not only distribution industry companies but also companies, customers, and sellers. To obtain this opportunity, service, information source, and system characteristics, which are the characteristics of mobile live commerce, are important factors. This research verified how key elements of mobile live commerce affect purchase intention. While previous shopping studies focused on face-to-face customer service, this study of mobile live commerce studied the factors that affect purchase intention in various ways by classifying service, information source, and system characteristics, so it has academic and practical implications.

Despite these important factors, there are limitations in practical research. Currently, China accounts for 60% of the global e-commerce market, but in Korea, the mobile live commerce market is growing. Accordingly, there is a limitation that the influence on the mobile live commerce characteristic factors may be weak. In addition, as the distribution environment of mobile live commerce is rapidly changing and growing, it is necessary to study, in various respects, how to focus research on the elements influenced by these rapid changes to satisfy companies, customers, and sellers, and reach purchase. It is expected that more meaningful research results can be produced if the research is expanded in various respects.

References

1. Kostat. Online Shopping Trends in September 2020 and Online Overseas Direct Sales and Purchase Trends in the Third Quarter. Available online: https://www.kostat.go.kr/portal/korea/kor_nw/1/1/index.board?bmode=read&aSeq=385947 (accessed on 20 July 2020).
2. Lee, J.; Kwon, K.H. Mobile Shopping Beauty Live Commerce Changes in COVID-19 Pandemic Focused on Fun Contents of MZ Generation in Republic of Korea. *J. Cosmet. Dermatol.* **2022**, *21*, 2298–2306. [CrossRef]
3. Choi, S.J.; Kim, K.A. The Influence of Influencers on Shopping Value and Product Trust in Live Commerce. In Proceedings of the KMIS 2022: 14th International Conference on Knowledge Management and Information Systems, Valletta, Malta, 24–26 October 2022; pp. 646–651.
4. Hu, Y.L. Analysis of the Influence of Mobile Live Likeliness and Fashion Shopping Benefit on the Behavior of 20 to 30 Aged Chinese Women Consumers. Master's Thesis, Kyung Hee University, Seoul, Republic of Korea, 2019.
5. Sun, Y.; Shao, X.; Li, X.; Guo, Y.; Nie, K. A 2020 Perspective on "How Live Streaming Influences Purchase Intentions in Social Commerce: An IT Affordance Perspective". *Electron. Commer. Res. Appl.* **2020**, *40*, 100958. [CrossRef]
6. Cai, J.; Wohn, D.Y.; Mittal, A.; Sureshbabu, D. Utilitarian and Hedonic Motivations for Live Streaming Shopping. In Proceedings of the 2018 ACM International Conference on Interactive Experiences for TV and Online Video, New York, NY, USA, 26–28 June 2018.
7. Cai, J.; Wohn, D.Y. Live Streaming Commerce: Uses and Gratifications Approach to Understanding Consumers' Motivations. In Proceedings of the 52nd Hawaii International Conference on System Sciences, Grand Wailea, HI, USA, 8–11 January 2019.
8. Bhattarai, A. The Future of Online Retail Looks a Lot Like QVC, with Live Streams of Influencers, Including Dogs, Doing the Hawking. Washington Post. Available online: https://www.washingtonpost.com/business/2021/07/08/live-stream-shopping/ (accessed on 9 July 2021).
9. Morganosky, M.A. Cost-Versus Convenience-Oriented Consumers: Demographic, Lifestyle, and Value Perspectives. *Psychol. Mark.* **1986**, *3*, 35–46. [CrossRef]
10. Park, E.; Kim, K.J. User Acceptance of Long-Term Evolution (LTE) Services: An Application of Extended Technology Acceptance Model. *Data Technol. Appl.* **2013**, *47*, 188–205. [CrossRef]
11. Looney, C.A.; Jessup, L.M.; Valacich, J.S. Emerging Business Models for Mobile Brokerage Services. *Commun. ACM* **2004**, *47*, 71–77. [CrossRef]
12. Siau, K.; Lim, E.P.; Shen, Z. Mobile Commerce: Promises, Challenges and Research Agenda. *J. Database Manag.* **2001**, *12*, 4–13. [CrossRef]
13. Lombard, M.; Snyder-Duch, J. Interactive Advertising and Presence: A Framework. *J. Interact. Advert.* **2001**, *1*, 56–65. [CrossRef]
14. Lee, K.M. Presence, Explicated. *Commun. Theory* **2004**, *14*, 27–50. [CrossRef]
15. Biocca, F.; Harms, C.; Burgoon, J.K. Toward a More Robust Theory and Measure of Social Presence: Review and Suggested Criteria. *Presence Teleoper. Virtual Environ.* **2003**, *12*, 456–480. [CrossRef]
16. Erdogan, B.Z.; Baker, M.J.; Tagg, S. Selecting Celebrity Endorsers: The Practitioner's Perspective. *J. Advert. Res.* **2001**, *41*, 39–48. [CrossRef]
17. Kahle, L.R.; Homer, P.M. Physical Attractiveness of the Celebrity Endorser: A Social Adaptation Perspective. *J. Consum. Res.* **1985**, *11*, 954–961. [CrossRef]
18. McGuire, W.J. Attitudes and Attitude Change. In *The Handbook of Social Psychology*; Lindzey, G., Aronson, E., Eds.; Random House: New York, NY, USA, 1985; Volume 2, pp. 233–346.
19. Kelman, H.C. Compliance, Identification, and Internalization Three Processes of Attitude Change. *J. Confl. Resolut.* **1958**, *2*, 51–60. [CrossRef]
20. Nisbett, R.E.; Ross, L. *Human Inference: Strategies and Shortcomings of Social Judgment*; Prentice-Hall: Hoboken, NJ, USA, 1980; pp. 1621–1636.

21. Newman, M.E.J. The Structure and Function of Complex Networks. *SIAM Rev.* **2003**, *45*, 167–256. [CrossRef]
22. Ohanian, R. Construction and Validation of a Scale to Measure Celebrity Endorser's Perceived Expertise, Trustworthiness, and Attractiveness. *J. Advert.* **1990**, *19*, 39–52. [CrossRef]
23. Birnbaum, M.H.; Stegner, S.E. Source Credibility in Social Judgment: Bias, Expertise, and the Judge's Point of View. *J. Pers. Soc. Psychol.* **1979**, *37*, 48–74. [CrossRef]
24. DeLone, W.H.; McLean, E.R. Information Systems Success: The Quest for the Dependent Variable. *Inf. Syst. Res.* **1992**, *3*, 60–95. [CrossRef]
25. Ahn, T.; Ryu, S.; Han, I. The Impact of the Online and Offline Features on the User Acceptance of Internet Shopping Malls. *Electron. Commer. Res. Appl.* **2004**, *3*, 405–420. [CrossRef]
26. Mentzer, J.T.; Flint, D.J.; Kent, J.L. Developing a Logistics Service Quality Scale. *J. Bus. Logist.* **1999**, *20*, 9–32.
27. Park, I.S.; Ahn, H.C. A Study on the User Acceptance Model of Mobile Credit Card Service Based on UTAUT. *e-Bus. Stud.* **2012**, *13*, 551–574. [CrossRef]
28. Schierz, P.G.; Schilke, O.; Wirtz, B.W. Understanding Consumer Acceptance of Mobile Payment Services: An Empirical Analysis. *Electron. Commer. Res. Appl.* **2010**, *9*, 209–216. [CrossRef]
29. Westbrook, R.A.; Black, W.C. A Motivation-Based Shopper Typology. *J. Retail.* **1985**, *61*, 78–103.
30. Bloch, P.H.; Ridgway, N.M.; Dawson, S.A. The Shopping Mall as Consumer Habitat. *J. Retail.* **1994**, *70*, 23–42. [CrossRef]
31. Babin, B.J.; Darden, W.R.; Griffin, M. Work and/or Fun: Measuring Hedonic and Utilitarian Shopping Value. *J. Consum. Res.* **1994**, *20*, 644–656. [CrossRef]
32. Overby, J.W.; Lee, E.J. The Effects of Utilitarian and Hedonic Online Shopping Value on Consumer Preference and Intentions. *J. Bus. Res.* **2006**, *59*, 1160–1166. [CrossRef]
33. Zeithaml, V.A. Service Quality, Profitability, and the Economic Worth of Customers: What We Know and What We Need to Learn. *J. Acad. Mark. Sci.* **2000**, *28*, 67–85. [CrossRef]
34. Zeithaml, V.A. Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence. *J. Mark.* **1988**, *52*, 2–22. [CrossRef]
35. Kim, H.W.; Chan, H.C.; Gupta, S. Value-Based Adoption of Mobile Internet: An Empirical Investigation. *Decis. Support Syst.* **2007**, *43*, 111–126. [CrossRef]
36. Blackwell, R.D.; Miniard, P.W.; Engel, J.F. *Consumer Behavior*, 9th ed.; Harcourt: New York, NY, USA, 2001.
37. Engel, J.F.; Blackwell, R.D.; Miniard, P.W. *Consumer Behavior*, 8th ed.; Dryden Press: Hinsdale, IL, USA, 1995.
38. Boulding, W.; Kalra, A.; Staelin, R.; Zeithaml, V.A. A Dynamic Process Model of Service Quality: From Expectations to Behavioral Intentions. *J. Mark. Res.* **1993**, *30*, 7–27. [CrossRef]
39. Poddar, A.; Donthu, N.; Wei, Y. Web Site Customer Orientations, Web Site Quality, and Purchase Intentions: The Role of Web Site Personality. *J. Bus. Res.* **2009**, *62*, 441–450. [CrossRef]
40. Siekpe, J.S. An Examination of the Multidimensionality of Flow Construct in a Computer-Mediated Environment. *J. Electron. Commer. Res.* **2005**, *6*, 31–43.
41. Bellenger, D.N.; Steinberg, E.; Stanton, W.W. The Congruence of Store Image and Self Image. *J. Retail.* **1976**, *52*, 17–32.
42. Holbrook, M.B.; Hirschman, E.C. The Experiential Aspects of Consumption: Consumer Fantasies, Feelings, and Fun. *J. Consum. Res.* **1982**, *9*, 132–140. [CrossRef]
43. Sherry, J.F., Jr. A Sociocultural Analysis of a Midwestern American Flea Market. *J. Consum. Res.* **1990**, *17*, 13–30. [CrossRef]
44. Fischer, E.; Arnold, S.J. More than a Labor of Love: Gender Roles and Christmas Gift Shopping. *J. Consum. Res.* **1990**, *17*, 333–345. [CrossRef]
45. Hassanein, K.; Head, M. The Impact of Infusing Social Presence in the Web Interface: An Investigation Across Product Types. *Int. J. Electron. Commer.* **2005**, *10*, 31–55. [CrossRef]
46. Holbrook, M.B. Consumer Value. In *A Framework for Analysis and Research*; Routledge: New York, NY, USA, 1999.
47. Tao, M.Y.; Wang, P.C.; Yoon, J.H. The Effect of the Perceived Value of Chinese Live Commerce Viewers on Purchase Intention from the Social Presence: Focusing on the S-O-R Model. *KJHT* **2022**, *31*, 129–146. [CrossRef]
48. Rupp, W.T.; Smith, A.D. Mobile Commerce: New Revenue Machine or Black Hole? *Bus. Horiz.* **2002**, *45*, 26–29. [CrossRef]
49. Pascoe, J.S.; Sunderam, V.S.; Varshney, U.; Loader, R.J. Middleware Enhancements for Metropolitan Area Wireless Internet Access. *Future Gener. Comput. Syst.* **2002**, *18*, 721–735. [CrossRef]
50. Wu, J.H.; Wang, S.C. What Drives Mobile Commerce: An Empirical Evaluation of the Revised Technology Acceptance Model. *Inf. Manag.* **2005**, *42*, 719–729. [CrossRef]
51. Haas, A.; Kenning, P. Utilitarian and Hedonic Motivators of Shoppers' Decision to Consult with Salespeople. *J. Retail.* **2014**, *90*, 428–441. [CrossRef]
52. Childers, T.L.; Carr, C.L.; Peck, J.; Carson, S. Hedonic and Utilitarian Motivations for Online Retail Shopping Behavior. *J. Retail.* **2001**, *77*, 511–535. [CrossRef]
53. Carpenter, J.M. Consumer Shopping Value, Satisfaction and Loyalty in Discount Detailing. *J. Retail. Consum. Serv.* **2008**, *15*, 358–363. [CrossRef]
54. Hong, B.S.; Na, Y.K. The Effect of the Perceived Hedonic Value, Usefulness and Ease of use on Attitude Toward Using in Internet Shopping Mall and Purchase Intention of the Fashion Merchandise. *J. Korean Soc. Cloth. Text.* **2008**, *32*, 147–156. [CrossRef]

55. Grönroos, C. Value Driven Relational Marketing: From Products to Resources and Competencies. *J. Mark. Manag.* **1997**, *13*, 407–419. [CrossRef]

56. Park, S.J.; Han, J.W.; Kim, M.S. The Impact of Golf Apparel Consumers' Shopping Value on Store Loyalty: The Moderating Role of Consumers' Need for Uniqueness and a Store Type. *Korean J. Phys. Educ.* **2012**, *51*, 197–210.

57. Dawson, S.; Bloch, P.H.; Ridgway, N.M. Shopping Motives, Emotional States, and Retail Outcomes. *J. Retail.* **1990**, *66*, 408–428.

58. Patterson, P.G.; Spreng, R.A. Modelling the Relationship between Perceived Value, Satisfaction and Repurchase Intentions in a Business-to-Business, Services Context: An Empirical Examination. *Int. J. Serv. Ind. Manag.* **1997**, *8*, 414–434. [CrossRef]

59. Cronin Jr, J.J.; Brady, M.K.; Hult, G.T.M. Assessing the Effects of Quality, Value, and Customer Satisfaction on Consumer Behavioral Intentions in Service Environments. *J. Retail.* **2000**, *76*, 193–218. [CrossRef]

60. Kuo, Y.F.; Wu, C.M.; Deng, W.J. The Relationships among Service Quality, Perceived Value, Customer Satisfaction, and Post-Purchase Intention in Mobile Value-Added Services. *Comput. Hum. Behav.* **2009**, *25*, 887–896. [CrossRef]

61. Zhang, G.Y. The Effect of Evaluation Characteristics of Online Shopping Mall on Purchasing Intention of 2030 Users: Focusing on the Moderating Effect of Internet Familiarity and Service Usage. Master's Thesis, Pukyong National University, Pusan, Republic of Korea, 2022.

62. Seiders, K.; Voss, G.B.; Godfrey, A.L.; Grewal, D. SERVCON: Development and Validation of a Multidimensional Service Convenience Scale. *J. Acad. Mark. Sci.* **2007**, *35*, 144–156. [CrossRef]

63. Kim, C.; Mirusmonov, M.; Lee, I. An Empirical Examination of Factors Influencing the Intention to Use Mobile Payment. *Comput. Hum. Behav.* **2010**, *26*, 310–322. [CrossRef]

64. Durlacher Research Ltd. Mobile Commerce Report, Gatian, A.W. Is User Satisfaction a Valid Measure of Systems Effectiveness? *Inf. Manag.* **1999**, *26*, 119–131.

65. Hwang, H.S.; Lombard, M. Understanding Instant Messaging: Gratifications and Social Presence. In Proceedings of the 10th International Workshop on Presence, Barcelona, Spain, 25–27 October 2007; pp. 50–56.

66. Nowak, K. Defining and Differentiating Copresence, Social Presence and Presence as Transportation. In Proceedings of the Presence 2001 Conference, Philadelphia, PA, USA, 21–23 May 2001; pp. 686–710.

67. McCroskey, J.C.; McCain, T.A. The Measurement of Interpersonal Attraction. *Speech Monogr.* **1974**, *41*, 261–266. [CrossRef]

68. Braunstein, J.R.; Zhang, J.J. Dimensions of Athletic Star Power Associated with Generation Y Sports Consumption. *J. Mark. Spon.* **2005**, *6*, 242–267. [CrossRef]

69. Hakim, C. Erotic Capital. *Eur. Sociol. Rev.* **2010**, *26*, 499–518. [CrossRef]

70. Coyle, J.R.; Thorson, E. The Effects of Progressive Levels of Interactivity and Vividness in Web Marketing Sites. *JAR* **2001**, *30*, 65–77. [CrossRef]

71. Liu, M.J.; Park, J.Y.; Lee, H.E. Technology Acceptance Model in Live Commerce Context: The Effect of Para-social Interactivity and Source Characteristics on Consumers Shopping Intention on Live Commerce Platform. *J. Korea Contents Assoc.* **2001**, *21*, 138–154.

72. Palmer, J.W. Web Site Usability, Design, and Performance Metrics. *Inf. Syst. Res.* **2002**, *13*, 151–167. [CrossRef]

73. Ranganathan, C.; Ganapathy, S. Key Dimensions of Business-to-consumer Web Sites. *Inf. Manag.* **2002**, *39*, 457–465. [CrossRef]

74. Lee, D.G. A Study on the Influences of the Usage Environmental Characteristics of NFC on User's Attitude and Resistance: Focused on Mobile Payment Services. Ph.D. Thesis, Graduate School of Soongsil University, Seoul, Republic of Korea, 2015.

75. Sweeney, J.C.; Soutar, G.N. Consumer Perceived Value: The Development of a Multiple Item Scale. *J. Retail.* **2001**, *77*, 203–220. [CrossRef]

76. Sanchez, J.; Callarisa, L.; Rodriguez, R.M.; Moliner, M.A. Perceived Value of the Purchase of a Tourism Product. *Tour Manag.* **2006**, *27*, 394–409. [CrossRef]

77. Cengiz, E.; Kirkbir, F. Customer Perceived Value: The Development of a Multiple Item Scale in Hospitals. *Probl. Perspect. Manag.* **2007**, *5*, 252–268.

78. Agarwal, S.; Teas, R.K. Perceived Value: Mediating Role of Perceived Risk. *J. Mark. Theory Pract.* **2001**, *9*, 1–14. [CrossRef]

79. Yang, Y.; Liu, Y.; Li, H.; Yu, B. Understanding Perceived Risks in Mobile Payment Acceptance. *Ind. Manag. Data Syst.* **2015**, *115*, 253–269. [CrossRef]

80. Taylor, S.A.; Baker, T.L. An Assessment of the Relationship between Service Quality and Customer Satisfaction in the Formation of Consumers' Purchase Intentions. *J. Retail.* **1994**, *70*, 163–178. [CrossRef]

81. Kim, I.S.; Park, C.W. The Effect of Interaction on Flow, Trust and the Intention to Play in On-line Game Portal Sites. *Korean Soc. Comput. Game* **2012**, *25*, 33–45.

82. Nunnally, J.C. *Psychometric Theory*, 3rd ed.; McGraw-Hill: New York, NY, USA, 1994.

83. Bagozzi, R.P.; Yi, Y. On the Evaluation of Structural Equation Models. *J. Acad. Mark. Sci.* **1988**, *16*, 74–94. [CrossRef]

84. Gefen, D.; Straub, D.W. A Practical Guide to Factorial Validity Using PLS-Graph: Tutorial and Annotated Example. *Commun. Assoc. Inf. Syst.* **2005**, *16*, 91–109. [CrossRef]