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Factors Influencing the Use of Mobile Social Commerce Application with UTAUT2 Extended Model

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Abstract

Background: Mobile social commerce is a collection of e-commerce activities accessed via mobile devices and supported by users actively engaging in commercial activities on social media. As a country with a substantial number of social media users, Indonesia has sufficient opportunities to implement mobile social commerce as application for online shopping.
Objective: This study aimed to identify the factors influencing the use of mobile social commerce for online shopping, using Unified Theory of Acceptance and Use of Technology 2 (UTAUT2). In this context, some variables were excluded, namely user behavior, price value, and moderating variables (age, gender, and experience). Additional variables considered included price saving orientation (PSO), privacy concerns (PC), social commerce construct (SCC), social support (SS), and trust (TR).
Methods: Data were collected by distributing questionnaires to respondents who had used mobile social commerce for shopping, resulting in 320 collected responses. Furthermore, the collected data were analyzed using Partial Least Square-Structural Equation Modeling (PLS-SEM) method through SmartPLS 3.3.3 application.
Results: The results showed that among the 17 proposed hypotheses, 6 were rejected, while 11 were accepted.
Conclusion: In conclusion, the factors influencing the use of mobile social commerce consisted of effort expectancy, habit, hedonic motivation, SCC, SS, and PC. Therefore, future studies should concentrate on exploring the continued intention of users towards mobile social commerce application.

Keywords: Mobile Social Commerce, Privacy Concern, Social Construct, Social Support, UTAUT

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I. Introduction

The recent increase in social media usage has caused service providers to explore marketing and business opportunities by integrating buying and selling activities, essentially embracing e-commerce. Social media, which was initially designed for communication, networking, and content sharing, has evolved into a platform offering new business models to engage a broader customer base. By recognizing these potential advantages, companies are innovating by incorporating social media functionalities, particularly mobile social commerce.

Understanding the acceptance of mobile social commerce is crucial for evaluating future opportunities in the sector. To measure the acceptance of the application, an effective approach is to assess the factors that significantly influence user acceptance. Typically, multiple models, such as UTAUT2 Model, can provide a comprehensive means to measure acceptance and use. UTAUT2 is an adaptation of UTAUT model developed by Venkatesh et al. [1], which is specifically designed to explain technology acceptance from a user perspective, making it well-suited for this investigation. Moreover, UTAUT2 is considered the most predictive and comprehensive model of technology acceptance [2].

Numerous studies aimed to enhance and modify UTAUT2, introducing additional variables to better understand technology acceptance. This literature adopts UTAUT2 model while excluding user behavior, price value, and moderating variables, namely age, gender, and experience [2]. In addition, it incorporates additional variables such as price saving orientation (PSO) [2], social commerce construct (SCC) [2] - [5], social support (SS) [2], privacy concern

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(PC) [6], [7], and trust variables [4], [5], [7], [8]. These variables have a significantly positive impact on behavioral intention variables. It is crucial to be aware that the exploration of social commerce adoption is in the early stages, with various studies identifying different variables. However, there are similarities in the variables used across several studies.

Sheikh et al. use UTAUT2 Model, incorporating variables such as SS, SCC, and cultural factors [2]. Apart from the aspects considered by Sheikh et al, trust became a crucial consideration. Elshaer et al. also stated that trust has a positive impact on users' purchasing inclination [9]. Simultaneously, Dwivedi et al. [10] and Zhang et al. [11] substantiate that trust influences behavioral intentions for transactions in social commerce. Various explorations conceptualize trust in different ways, including trust in the application [12], seller [13], purchased brand [14], information/source [15], [16], and the context of social influence [17].

Another significant factor influencing users' engagement with social commerce is privacy. Fortes and Rita describe the important role of privacy factors in online transactions [18]. Furthermore, Mutambik explains that privacy-related data is a significant concern requiring protection [19]. Tseng proposes that privacy impacts trust in social commerce application [15], a point reinforced by Fortes and Rita [18].

The above analysis shows a gap in UTAUT2 Model concerning the investigation of social commerce, particularly in the absence of considerations for trust and privacy. Therefore, this study aims to identify variables impacting the acceptance of social mobile commerce application, with a specific focus on trust and privacy. By using a quantitative methodology, correlations are established between variables according to the selected model. The anticipated findings of this study serve as evaluative material for mobile social commerce providers, aiding in optimizing services and developing applications to increase user interest and intention for online shopping.

II. Literature Review

A comprehensive review of relevant literature was conducted to identify variables for the studies, as shown in Table 1. Drawing from the insights gathered in Table 1, the current study focuses on the use of mobile commerce for online shopping, incorporating variables from UTAUT2. This is augmented by introducing additional elements such as PSO, PC, SCC, SS, and trust. Typically, innovative variables rooted in user behavior and attributes commonly associated with widely used mobile social commerce applications are introduced.

A. PSO

PSO is an opportunity for users to save money by acquiring the optimal product at the most favorable price. In the context of social commerce, users can access facilities [20] that simplify product comparisons [21], enabling the identification of the best product at an affordable price [2].

B. PC

PC is the users' anxieties regarding potential disclosure and unauthorized exploitation of personal information [22]. In the context of technology acceptance, the revelation of personal information causes a potential drawback, potentially influencing the willingness to adopt a technology [18]. Furthermore, according to Alam et al., privacy considerations impact behavioral intention [23].

C. SCC

SCC is a framework used to shape social commerce [3], consisting of social media activities that support users in creating content, exchanging experiences, and using products. Moreover, users leverage information from other individuals and provide suggestions [3].

D. SS

According to Sheikh et al., SS is the perception of psychological or physical assistance for individuals or groups that others respond to or care about [2]. In a virtual environment, SS includes assisting one another in problem-solving, either directly or indirectly, by offering information, personal experiences, recommendations, and emotional support, such as attention, motivation, or empathy [24]. In line with Baines et al., online communication through social media can enhance SS among users [25].

E. Trust

Rahi et al. [26] define trust as the consumer's motivation or confidence in a product or service. Additionally, Hajli [3], stated that trust can reduce hesitation in using technology. Wang et al. described the important role of trust in social commerce, influencing user behavior in purchasing desired products [27].

F. Mobile Social Commerce

Mobile commerce, known as m-commerce, is the process of conducting transactions via mobile devices [28]. Meanwhile, social commerce refers to a social media platform enabling individuals to create communities and engage in various activities, including selling, purchasing, promoting, and sharing experiences related to products and services [3]. Liang & Turban [29] state that social commerce comprises three essential components, namely social media technology, social interaction, and commercial activities. Social media serves as a platform for generating content, setting social commerce apart from other forms of e-commerce [2].

TABLE 1
LITERATURE REVIEW TO DETERMINE VARIABLE

Article	Variable	Theory
[5]	1. Hedonic Motivation (HM) 2. Facilitating Condition (FC) 3. Performance Expectancy (PE) 4. Effort Expectancy (EE) 5. Habit (HA) 6. Behavioral Intention (BI) 7. Trust (TR) 8. Perceived Value (PV) 9. SCC	UTAUT2
[2]	1. Performance Expectancy (PE) 2. Hedonic Motivation (HM) 3. Habit (HA) 4. PSO 5. SCC 6. SS 7. Effort Expectancy (EE) 8. Social Influence (SI) 9. Facilitating Condition (FC) 10. Individualism (IN) 11. Uncertainty Avoidance (UA) 12. Use Behavior (UB) 13. Behavioral intentions (BI)	UTAUT2
[8]	1. Performance Expectancy (PE) 2. Effort Expectancy (EE) 3. Social Influence (SI) 4. Facilitating Condition (FC) 5. Hedonic Motivation (HM) 6. Price Value (PV) 7. Perceived Risk (PR) 8. Perceived Trust (PT) 9. Behavioral Intention (BI) 10. Intention to Recommend (IR)	UTAUT2
[4]	1. Perceived Usefulness (PU) 2. Trust (TR) 3. SCC 4. Purchase Intention (PI)	TAM
[6]	1. Performance Expectancy (PE) 2. Effort Expectancy (EE) 3. Social Influence (SI) 4. Facilitating Condition (FC) 5. Hedonic Motivations (HM) 6. Habit (HA) 7. PC 8. Behavioral Intention (BI)	UTAUT2
[7]	1. PC 2. Trust (T) 3. Perceived Utility (PU) 4. Perceived Ease of Use (PEOU) 5. Behavioral Intention (BI)	TAM

Social commerce and mobile commerce share a common genesis and objective, namely electronic commerce [30]. The rise of e-commerce has led to the development of mobile social commerce, a fusion of social commerce and

mobile commerce. Mobile social commerce has been recognized for its potential to enhance the value of services for end customers [30]. According to Hew et al. [28], it is a set of e-commerce activities conducted on mobile devices and facilitated by user engagement in commercial activities on social media. Popular mobile social commerce applications in Indonesia include Facebook, Instagram, WhatsApp, TikTok, Pinterest, Telegram, Twitter, and Line.

G. PLS-SEM

In this study, PLS-SEM and SmartPLS 3.3.3 software are used to process and analyze the data. Specifically, PLS-SEM is an alternative to SEM method, addressing complex variable issues with limited samples. Structural Equation Model (SEM) combines factor analysis with regression analysis to investigate relationships within a model, including those between indicators and constructs and between different constructs [31]. Consequently, PLS-SEM is suitable for data with small sample sizes [32] and is particularly effective in exploration aiming to predict or conduct exploratory modeling [33]. PLS-SEM consists of three key elements, namely structural model, measurement model, and weighting system [34]. The structural model shows the interconnection between variables within the examined model. The measurement model clarifies the correlation between all indicators and their latent variables. Meanwhile, in the weighting scheme, each latent variable is estimated using the weighted sum of other related latent variables.

III. METHODS

This study used a quantitative method, and survey techniques to collect primary data through questionnaires from 336 respondents who used mobile social commerce application for online shopping. Data gathering took place from February to April 2023, and the distribution of participants can be seen in Table 2. Specifically, participants were instructed to complete a questionnaire assessing their perception of various factors related to mobile social commerce, including effort expectancy, performance expectancy, social influence, facilitating condition, habit, hedonic motivation, trust, PC, SCC, SS, PSO, and behavioral intention.

TABLE 2
DEMOGRAPHICS OF THE RESPONDENTS

Information	Frequency	Percentage
Gender		
Male	130	41 %
Female	190	59 %
Age		
< 18 years	25	8 %
18 – 23 years	264	83 %
24 – 30 years	20	6 %
> 30 years	11	3 %
Job		
Government employees	6	48.77 %
Private employees	26	15.27 %
Student/ college student	261	19.21 %
Freelancer	14	3.45 %
Entrepreneur	11	2.96 %
Other	2	10.34 %
Used Application		
Facebook	74	19%
Instagram	120	30%
TikTok	73	18%
WhatsApp	94	24%
Pinterest	3	1%
Telegram	3	1%
Twitter	12	5%
Line	7	2%
Application Usage Frequency		
Once	73	23%
2 – 5 times	134	42%
Once a month	69	21%
Twice a month	25	8%
Once a week	7	2%
More than once a week	12	4%

Based on the literature review, these are the variables and hypotheses that the current study uses:

A. Effort Expectancy

Effort expectancy is an individual's perception that using mobile social commerce for purchase is effortless and does not require significant exertion. Gatautis & Medziausiene found that effort expectancy positively affected behavioral intention [35], while Herrero et al. showed that the ease of using technology was related to hedonic motivation and habit characteristics [6]. Additionally, prior studies by Lee & Song [36] and Verkijika [8] showed that effort expectancy indirectly impacted behavioral intention by positively influencing performance expectancy. Based on this description, the study proposed four hypotheses, namely H1, H2, H3, and H4.

H1: Effort Expectancy (EE) positively affected Behavioral Intention (BI) in the usage of mobile social commerce for online shopping.

H2: Effort Expectancy (EE) had a positive effect on Habit (HA) in the usage of mobile social commerce for online shopping.

H3: Effort Expectancy (EE) positively affected Hedonic Motivation (HM) in the usage of mobile social commerce for online shopping.

H4: Effort Expectancy (EE) positively affected Performance Expectancy (PE) in the usage of mobile social commerce for online shopping.

B. Facilitating Condition

Facilitating condition is consumer perceptions of resources, such as tools and support, including knowledge and user abilities available to perform a behavior [1]. According to Shoheib & Abu-Shanab, enabling conditions had a favorable and significant impact on behavioral intention [5], hence, hypothesis H5 was formed.

H5: Facilitating Condition (FC) positively affected Behavioral Intention (BI) in the usage of mobile social commerce for online shopping.

C. Habit

Habit influenced behavioral intention, as users who were familiar with mobile social commerce for online shopping tended to express an intention to use the application. This observation was consistent with findings from Sheikh et al. [2] and Shoheib & Abu-Shanab [5]. Building on the exploration by Herrero et al. [6], it was proposed that habit also significantly influenced performance expectancy. Therefore, hypotheses H6 and H7 were formulated as stated below.

H6: Habit (HA) positively influenced Behavioral Intention (BI) in the usage of mobile social commerce for online shopping.

H7: Habit (HA) positively influenced Performance Expectancy (PE) in the usage of mobile social commerce for online shopping.

D. Hedonic Motivation

The hedonic motivation variable in this study referred to the pleasure users experienced when using mobile social commerce. Sheikh et al. [2], Verkijika [8], and Shoheib & Abu-Shanab [5] showed that hedonic motivation had a positive impact on behavioral intention. Hedonic motivation directly influenced habit formation, thereby affecting the intention to use technology in the future. Based on the description, hypotheses H8 and H9 were proposed below.

H8: Hedonic Motivation (HM) positively influenced Behavioral Intention (BI) in the usage of mobile social commerce for online shopping.

H9: Hedonic Motivation (HM) had a positive effect on Habit (HA) in the usage of mobile social commerce for online shopping.

E. Performance Expectancy

The performance expectancy variable in this study referred to the way users perceived that the use of mobile social commerce could increase productivity and facilitate user performance. Herrero et al. [6], Sheikh et al. [2], and Gatautis & Medziausiene [35] proposed that performance expectancy positively affected behavioral intention. Therefore, when users perceived that using mobile social commerce would enhance their efficiency in tasks, the user tended to use it for shopping purposes, leading to the formulation of hypothesis H10.

H10: Performance Expectancy (PE) positively influenced Behavioral Intention (BI) in the usage of mobile social commerce for online shopping.

F. Social Influence

Social Influence is the impact of external elements, such as family, friends, and those with a close connection to the user, in persuading individuals to adopt a particular technology [37]. According to Gatautis & Medziausiene [35] and Rahman et al. [22], social influence positively influenced user behavioral intentions. Based on this description, the following hypothesis, namely H11, was proposed.

H11: Social Influence (SI) positively influenced Behavioral Intention (BI) in the usage of mobile social commerce for online shopping.

G. PSO

The variable of PSO concerns the degree to which users perceived mobile social commerce as a more efficient means of buying, with a substantial chance of obtaining the optimal product at a given price. In line with Sheikh et al., a PSO had a favorable impact on behavioral intention [2], hence, leading to the formulation of the following hypothesis H12.

H12: PSO positively influenced Behavioral Intention (BI) in the usage of mobile social commerce for online shopping.

H. PC

PC variable is related to the impact of privacy apprehensions during engagement in mobile social commerce. Herrero et al. stated that user PC could be viewed as a drawback in showing information, potentially negatively affecting the acceptability of technology [6]. Furthermore, Dhagarra et al. supported the idea that privacy had a detrimental impact on Behavioral Intention [7]. As a result, the following hypothesis shown as H13, was formulated.

H13: PC had a negative effect on Behavioral Intention (BI) regarding the usage of mobile social commerce for online shopping.

I. SCC

Social commerce structures consisted of references, recommendations, ratings, and reviews from a forum or community within the context of social commerce [3]. Previous exploration by Sheikh et al. found that social commerce concept had a favorable impact on behavioral intention [2]. SCC also influenced trust. According to Hajli, user ratings and reviews influenced the level of trust, resulting in increased sales on the application [3]. Consequently, hypotheses H14 and H15 were formulated.

H14: SCC had a positive effect on Behavioral Intention (BI) regarding the usage of mobile social commerce for online shopping.

H15: SCC positively affected Trust (T) regarding the usage of mobile social commerce for online shopping.

J. SS

SS variable is the perceived level of SS consumers experienced while using mobile social commerce for shopping purposes. For example, Sheikh et al. [2] and Hajli [3] stated that SS positively influenced behavioral intention. Based on the description above, hypothesis H16 was proposed.

H16: SS positively affected Behavioral Intention (BI) regarding the usage of mobile social commerce for online shopping.

K. Trust

Online transactions made potential buyers to only see products in digital form, which could reduce user trust in online shopping application such as mobile social commerce. Therefore, one of the essential factors that service providers needed to consider, was user trust. According to Alam et al. [23] and Dwivedi et al. [10], trust impacted behavioral intention, leading to the formulation of hypothesis H17.

H17: Trust (TR) positively affected Behavioral Intention (BI) regarding the usage of mobile social commerce for online shopping.

The proposed model based on the hypotheses developments could be seen in Fig. 1.

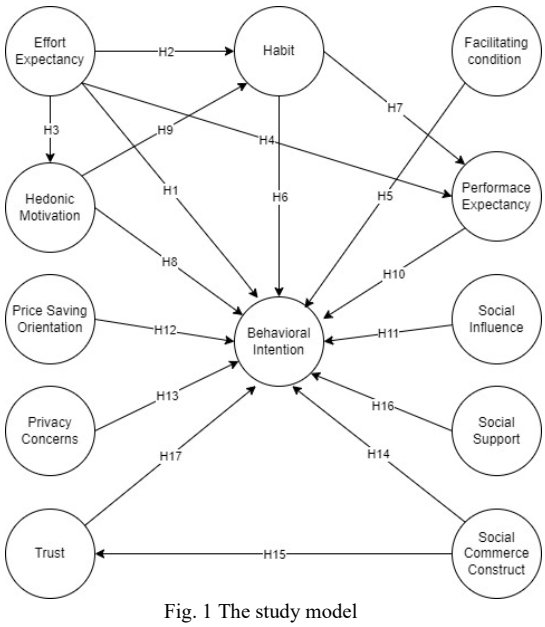

Fig. 1 The study model

IV. RESULTS

A. The measurement model (Outer Model)

The analysis of the outer model included associating each indicator block with its corresponding hidden variable. Before constructing the external model using SmartPLS software, it was crucial to ensure the data met the study requirements. Therefore, a data cleansing was carried out to organize the respondent data collected through distributed surveys. The examination of the outer model consisted of two phases, namely validity and reliability test. The validity test included convergent and discriminant validity, as shown in Tables 4 and 5, respectively. Initially, a convergent validity test was used to analyze the loading component. According to the data in Table 4, outer loading values ranged from 0.686 to 0.922, indicating the authenticity of the indicators as their values exceeded the recommended threshold of 0.5 [38]. Subsequently, convergent validity was assessed using AVE test, and the result showed that the values for all elements met the criterion of above 0.5, which was considered valid. Discriminant validity was also satisfactory when AVE exceeded the correlation between variables. Table 5 showed that all correlations were lower than the square root of AVE.

Reliability test was carried out by examining Cronbach's alpha and composite reliability values [33]. Specifically, Cronbach test assessed the consistency level of a latent variable. A value exceeding 0.75 was considered high consistency, between 0.5 and 0.75 indicated reasonable consistency, and below 0.5 suggested low consistency [38]. On the other hand, the composite reliability value needed to exceed 0.7. The data in Table 4 showed that the results of each test met the criteria for reliability testing.

B. Structural Model (Inner Model)

The evaluation of this test was based on examining R-Square and Q-Square values. Typically, R-square is a statistical measure used to assess the model's capacity to account for the variability in the endogenous or dependent variables. Chin stated that the R-Square value is considered strong when the value exceeds 0.67, moderate when it is more significant than 0.33 but less than 0.67, and weak when the value is more significant than 0.19 but less than 0.33 [39]. Based on the results of R2 in Table 6, BI was significantly influenced by the variables EE, FC, HA, HM, PE, PC, PSO, SS, SCC, SI, and TR variables by 67.6%. HA variable was found to be significantly influenced by HM and EE variables by 45.1%. Meanwhile, HM variable was found to be significantly influenced by EE by 39.9%, and PE variable was found to be significantly influenced by HA and EE variables by 56.1%. Finally, TR was found to be significantly influenced by SCC variable by 30.6%.

Q-Square measured the predictive relevance value, namely how well the endogenous latent variable could predict the effect of exogenous latent variable in the study model. Subsequently, Q-Square value was considered good when the value was greater than 0. Based on the results of Q2 in Table 6, the model had good predictive relevance.

TABLE 4
THE MEASUREMENT MODEL

Construct	Items	Loading	Cronbach's Alpha	Composite Reliability	AVE
Behavioral Intention (BI)	BI1	0,877	0.889	0.923	0.750
	BI2	0,871			
	BI3	0,893			
	BI4	0,821			
Effort Expectancy (EE)	EE1	0,819	0.825	0.883	0.654
	EE2	0,833			
	EE3	0,782			
	EE4	0,800			
Facilitating Condition (FC)	FC1	0,686	0.755	0.836	0.562
	FC2	0,804			
	FC3	0,743			
	FC4	0,760			
Habit (HA)	HA1	0,908	0.901	0.931	0.772
	HA2	0,871			
	HA3	0,895			
	HA4	0,839			
Hedonic Motivation (HM)	HM1	0,909	0.907	0.935	0.782
	HM2	0,885			
	HM3	0,889			
	HM4	0,854			
PC (PC)	PC1	0,878	0.857	0.897	0.636
	PC2	0,924			
	PC3	0,913			
	PC4	0,922			
Performance Expectancy (PE)	PE1	0,808	0.799	0.950	0.712
	PE2	0,766			
	PE3	0,836			
	PE4	0,808			
	PE5	0,767			
PSO	PSO1	0,798	0.941	0.881	0.827
	PSO2	0,836			
	PSO3	0,895			
SCC	SCC1	0,743	0.842	0.894	0.680
	SCC2	0,851			
	SCC3	0,871			
	SCC4	0,827			
Social Influence (SI)	SI1	0,869	0.857	0.913	0.712
	SI2	0,853			
	SI3	0,889			
	SI4	0,758			
SS	SS1	0,883	0.874	0.908	0.778
	SS2	0,881			
	SS3	0,882			
Trust (TR)	TR1	0,820	0.864	0.909	0.665
	TR2	0,843			
	TR3	0,823			
	TR4	0,796			
	TR5	0,796			

C. Hypothesis Test

The process of hypothesis testing between variables consisted of resampling 500 times using the bootstrap method on SmartPLS 3.3.3 software. The iterative resampling procedure searched for reliable and conclusive outcomes. Generally, hypothesis testing included comparing the t-statistics, original sample, and p-values produced through the bootstrap process. A hypothesis was considered valid when its t-statistic value exceeded 1.96, and its p-value was below 0.05. Moreover, the causal relationship between a variable and other variables could be determined by examining the initial sample value. Assuming the initial sample value of a hypothesis was greater than 0 or positive,

it could be inferred that the latent variable positively impacted the other latent variables in the hypothesis. However, when the initial sample had a value below zero, the latent variable negatively influenced the other variables in the hypothesis.

TABLE 5
THE DISCRIMINANT VALIDITY CHECK

	BI	EE	FC	HA	HM	PC	PE	PSO	SCC	SI	SS	TR
BI	0,866											
EE	0,526	0,809										
FC	0,476	0,742	0,750									
HA	0,680	0,520	0,497	0,879								
HM	0,670	0,631	0,628	0,691	0,884							
PC	-0,561	-0,340	-0,306	-0,596	-0,474	0,922						
PE	0,572	0,699	0,672	0,593	0,695	-0,384	0,797					
PSO	0,557	0,623	0,580	0,610	0,572	-0,364	0,633	0,844				
SCC	0,639	0,488	0,515	0,494	0,507	-0,411	0,531	0,560	0,825			
SI	0,612	0,492	0,489	0,767	0,610	-0,541	0,576	0,594	0,543	0,844		
SS	0,706	0,497	0,487	0,566	0,570	-0,549	0,529	0,549	0,706	0,609	0,882	
TR	0,669	0,546	0,563	0,626	0,645	-0,689	0,609	0,552	0,553	0,619	0,633	0,815

TABLE 6
THE STRUCTURAL MODEL CHECK

Variable	R^2	Q^2	Description
BI	0,676	0,489	Significant, predictive
HA	0,489	0,368	Moderate, predictive
HM	0,399	0,306	Moderate, predictive
PE	0,561	0,347	Moderate, predictive
TR	0,306	0,198	Weak, predictive

Table 7 showed that 11 hypotheses were accepted, and 6 hypotheses were rejected. The rejected hypotheses were H1, H5, H10, H11, H12, and H17. The table showed that the 6 rejected hypotheses had a t-statistic value below 1.96 and a p-value above 0.05. On the other hand, H5 and H11 had an original sample value below 0, showing a negative relationship direction. The recognized hypotheses were H2, H3, H4, H6, H7, H8, H9, H13, H14, H15, and H16. The test showed that 11 hypotheses had a t-statistic value greater than 1.96 and a p-value less than 0.05. Additionally, the original sample value exceeded 0, signifying a positive correlation between the variable and the other variables in the hypothesis. Even though the initial sample value of H13 was smaller than 0, indicating a negative association with other variables, the hypotheses were still accepted.

TABLE 7
THE STRUCTURAL MODEL HYPOTHESES

	Hypotheses	Original Sample	T-Statistic	P-Value	Supported
H1	EN → PU	0.058	0.944	0.346	No
H2	EE → HA	0.139	2.300	0.022	Yes
H3	EE → HM	0.631	17.451	0.000	Yes
H4	EE → PE	0.535	12.015	0.000	Yes
H5	FC → BI	-0.117	1.888	0.060	No
H6	HA → BI	0.209	2.796	0.005	Yes
H7	HA → PE	0.315	6.944	0.000	Yes
H8	HM → BI	0.214	2.760	0.006	Yes
H9	HM → HA	0.603	10.296	0.000	Yes
H10	PE → BI	0.009	0.169	0.866	No
H11	SI → BI	-0.053	0.724	0.469	No
H12	PSO → BI	0.016	0.332	0.740	No
H13	PC → BI	-0.129	2.056	0.040	Yes
H14	SCC → BI	0.182	2.896	0.004	Yes
H15	SCC → TR	0.553	12.914	0.000	Yes
H16	SS → BI	0.242	3.753	0.000	Yes
H17	TR → BI	0.113	1.764	0.078	No

V. DISCUSSION

Based on the results of hypothesis testing, several findings were recorded. This study found that effort expectations directly influenced performance expectations, hedonic motivation, and habits. These variables were highly relevant

determinants of intentions to use mobile social commerce for shopping, although the variables did not directly affect usage intentions. Based on the description above, mobile social commerce service provider companies needed to pay attention to the convenience of users by evaluating the system either in the user interface (UI) or the user experience (UX) section regularly. In addition, the companies needed to develop a system that users could easily use, including first-time users.

The facilitating condition construct and social influence did not positively affect behavioral intentions through mobile social commerce because the facilities that supported the use of mobile social commerce were easy to obtain. Therefore, the intention to use was not influenced by the facilitating conditions, confirming the findings of Sheikh et al. [2] and Shaw & Sergueeva [40]. Similarly, the information overload on social media showed that users did not need social influence for a final decision [2].

The results showed that habit and hedonic motivation were directly related to behavioral intentions. The finding was consistent with the study conducted by Sheikh et al. [2] and Herrero et al. [6]. Subsequently, habit also had a positive influence on performance expectations, while hedonic motivation had a positive influence on habits. The study showed that users were happy shopping with social media, and the existence of social media in the daily life of Indonesians made users familiar with social media, including online shopping activities. Therefore, mobile social commerce provider companies needed to implement marketing strategies to create user habits that could make the existence of the application stick in the minds of users.

SCC is a significant predictor of behavioral intention in mobile social commerce. Table 7 showed a T-statistic value of 2.896 (exceeded 1.96), thereby validating the findings of Sheikh et al. [2]. Based on the accepted hypothesis regarding SCC, it could be concluded that user valuation extended to ratings, reviews, and recommendations sourced from friends, forums, or communities within mobile social commerce. Moreover, mobile social commerce application served as a valuable opportunity for users to share experiences related to their purchased products. Additionally, SCC, strongly influenced user trust, as reported by Hajli [3]. The study showed that SS significantly impacted behavioral intentions. This scenario was also supported by [3] and Sheikh et al. [2], where peer support, consisting of both emotional and informational aspects, aided consumers in finalizing purchase decisions.

Performance expectation does not have a positive influence on behavioral intentions in using mobile social commerce. The outcome deviated from those of Sheikh et al. [2] but was in line with Rahman et al. [22]. Therefore, the results implied that mobile social commerce when applied to online shopping, did not increase user productivity and performance expectations. These findings were attributed to the fact that users still needed to make payments through ATMs, mobile banking, or Internet banking during online shopping, demanding additional time and energy for transaction procedures.

This study also confirmed that PSO did not influence behavioral intention to use mobile social commerce. The result was different from Sheikh et al. [2] but was consistent with the conclusions drawn by Daud & Yoong [41]. This variance could be attributed to the absence of a direct payment feature in the system. Typically, the majority of transactions on social commerce mobile applications incorporated sending money directly to the seller, resulting in administrative fees or shipping costs. Despite the appealing prices, users did not achieve savings as they were still required to cover administrative fees or shipping costs. Therefore, this issue could be addressed by introducing a direct transaction feature on social commerce mobile application.

PC had a significant adverse impact on users of mobile social commerce. This result confirmed prior investigations showing that PC negatively influenced behavioral intention [22]. This study showed that users are concerned about their privacy and perceived that revealing personal information during online shopping via mobile social commerce could lead to potential harm. In line with the outcomes related to PC variable, this study also established that trust did not have influence on behavioral intention, signifying users' lack of trust in mobile social commerce for online shopping. This scenario could be attributed to the intermediary role of mobile social commerce between sellers and buyers, leaving users unable to file complaints through the application in case of issues. To address the problem, service providers in mobile social commerce could incorporate responsive complaint services to handle users' privacy-related concerns.

The study showed that mobile social commerce applications were generally well-received and used by their users, with most proposed hypotheses being substantiated. However, crucial hypotheses, including effort expectancy, performance expectancy, social influence, PSO, and trust, were rejected. To ensure the sustained usage of social commerce applications for buying and selling activities, managers of mobile commerce applications needed to prioritize features that had faced rejection. Additionally, application interfaces should be simplified to reduce user effort and enhance transactional features for seamless buying and selling experiences.

Apart from the simplification of the application interfaces, it should enable users to provide testimonials about purchased products, making social influence a consideration for potential buyers during transactions. Showing price information was crucial to facilitate quick product price comparisons for buyers. To increase buyer trust, managers of

mobile social commerce applications should collaborate with reputable financial transaction service providers, thereby enabling users to conduct secure and comfortable transactions in the application without concerns about privacy, data security, and financial transaction safety.

VI. Conclusion

In conclusion, the study on factors influencing the use of mobile social commerce for online shopping produced 17 hypotheses, with 11 accepted and 6 rejected. From the results, it can be inferred that UTAUT2 variable factors, particularly hedonic motivation, had a positive impact on habit and behavioral intention. Consequently, user habits positively influenced performance expectancy and the intention to use. Additionally, effort expectancy also positively affected users' hedonic motivation, habit, and performance expectancy. External factors of UTAUT2, including PC, SCC, and SS, positively influenced behavioral intention. Moreover, SCC also positively impacted user trust. Users generally viewed using mobile social commerce for online shopping favorably, despite identified shortcomings.

The primary contribution and novelty were identified as the variables/factors of PC, SCC, and SS. Additionally, these factors significantly influenced users in conducting buying and selling transactions using mobile social commerce applications. To enhance UTAUT2 Model, the three factors should be incorporated, creating UTAUT2 Extended Model for a comprehensive analysis of user acceptance. However, it is essential to acknowledge the limitations of this study, which focused primarily on analyzing user adoption and acceptance of mobile social commerce applications, with a predominant emphasis on scrutinizing user behavioral intention. Consequently, further investigation could explore mobile social commerce applications using the ECM model to determine the continuance intention of users.

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REFERENCES

[1] Venkatesh, Thong, and Xu, "Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology," *MIS Quarterly*, vol. 36, no. 1, p. 157, 2012, doi: 10.2307/41410412.

[2] Z. Sheikh, T. Islam, S. Rana, Z. Hameed, and U. Saeed, "Acceptance of social commerce framework in Saudi Arabia," *Telematics and Informatics*, vol. 34, no. 8, pp. 1693–1708, Dec. 2017, doi: 10.1016/j.tele.2017.08.003.

[3] N. Hajli, "Social commerce constructs and consumer's intention to buy," *International Journal of Information Management*, vol. 35, no. 2, pp. 183–191, Apr. 2015, doi: 10.1016/j.ijinfomgt.2014.12.005.

[4] S. K. Sharma and M. Sharma, "Examining the role of trust and quality dimensions in the actual usage of mobile banking services: An empirical investigation," *International Journal of Information Management*, vol. 44, pp. 65–75, Feb. 2019, doi: 10.1016/j.ijinfomgt.2018.09.013.

[5] Z. Shoheib and E. A. Abu-Shanab, "Adapting the UTAUT2 Model for Social Commerce Context," *International Journal of E-Business Research*, vol. 18, no. 1, pp. 1–20, Jan. 2022, doi: 10.4018/IJEBR.293293.

[6] Á. Herrero, H. S. Martín, and M. del M. G.-D. los Salmones, "Explaining the adoption of social networks sites for sharing user-generated content: A revision of the UTAUT2," *Computers in Human Behavior*, vol. 71, pp. 209–217, Jun. 2017, doi: 10.1016/j.chb.2017.02.007.

[7] D. Dhagarra, M. Goswami, and G. Kumar, "Impact of Trust and Privacy Concerns on Technology Acceptance in Healthcare: An Indian Perspective," *International Journal of Medical Informatics*, vol. 141, p. 104164, Sep. 2020, doi: 10.1016/j.ijmedinf.2020.104164.

[8] S. F. Verkijika, "Factors influencing the adoption of mobile commerce applications in Cameroon," *Telematics and Informatics*, vol. 35, no. 6, pp. 1665–1674, Sep. 2018, doi: 10.1016/j.tele.2018.04.012.

[9] I. A. Elshaer, M. Alrawad, A. Lutfi, and A. M. S. Azazz, "Social commerce and buying intention post COVID-19: Evidence from a hybrid approach based on SEM – fsQCA," *Journal of Retailing and Consumer Services*, vol. 76, p. 103548, Jan. 2024, doi: 10.1016/j.jretconser.2023.103548.

[10] Y. K. Dwivedi, E. Ismagilova, P. Sarker, A. Jeyaraj, Y. Jadil, and L. Hughes, "A Meta-Analytic Structural Equation Model for Understanding Social Commerce Adoption," *Inf Syst Front*, vol. 25, no. 4, pp. 1421–1437, Aug. 2023, doi: 10.1007/s10796-021-10172-2.

[11] L. Zhang, J. Zhu, and Q. Liu, "A meta-analysis of mobile commerce adoption and the moderating effect of culture," *Computers in Human Behavior*, vol. 28, no. 5, pp. 1902–1911, Sep. 2012, doi: 10.1016/j.chb.2012.05.008.

[12] L.-P. Dana, D. Vrontis, R. Chaudhuri, and S. Chatterjee, "Entrepreneurship Strategy through Social Commerce Platform: An Empirical Approach Using Contagion Theory and Information Adoption Model," *Sustainability*, vol. 15, no. 16, Art. no. 16, Jan. 2023, doi: 10.3390/su151612467.

[13] B. Beck, M. Moore Koskie, and W. Locander, "How electronic word of mouth (eWOM) shapes consumer social media shopping," *Journal of Consumer Marketing*, vol. 40, no. 7, pp. 1002–1016, Jan. 2023, doi: 10.1108/JCM-01-2023-5817.

[14] A. George, A. Joseph, M. Abraham, and E. T. Joseph, "Brand trust and engagement in social commerce," *International Journal of Consumer Studies*, vol. 47, no. 5, pp. 1791–1809, 2023, doi: 10.1111/ijcs.12947.

[15] H.-T. Tseng, "Shaping path of trust: the role of information credibility, social support, information sharing and perceived privacy risk in social commerce," *Information Technology & People*, vol. 36, no. 2, pp. 683–700, Jan. 2022, doi: 10.1108/ITP-07-2021-0564.

[16] W. Chiu, G.-E. (Grace) Oh, and H. Cho, "An integrated model of consumers' decision-making process in social commerce: a cross-cultural study of the United States and China," *Asia Pacific Journal of Marketing and Logistics*, vol. 35, no. 7, pp. 1682–1698, Jan. 2022, doi: 10.1108/APJML-01-2022-0029.

[17] L. Zhao, Y. Xu, and X. Xu, "The effects of trust and platform innovation characteristics on consumer behaviors in social commerce: A social influence perspective," *Electronic Commerce Research and Applications*, vol. 60, p. 101284, Jul. 2023, doi: 10.1016/j.elerap.2023.101284.

[18] N. Fortes and P. Rita, "Privacy concerns and online purchasing behaviour: Towards an integrated model," *European Research on Management and Business Economics*, vol. 22, no. 3, pp. 167–176, Sep. 2016, doi: 10.1016/j.iedeen.2016.04.002.

[19] I. Mutambik, J. Lee, A. Almuqrin, J. Z. Zhang, M. Baihan, and A. Alkhanifer, "Privacy Concerns in Social Commerce: The Impact of Gender," *Sustainability*, vol. 15, no. 17, Art. no. 17, Jan. 2023, doi: 10.3390/su151712771.

[20] Sholikhah, D. A. P. Sari, and M. A. Musyaffi, "Exploring Convenience Motivation in the Using Delivery Service Intention," vol. 24, no. 192, pp. 322–328, Jan. 2023, doi: 10.47750/QAS/24.192.38.

[21] C.-M. Chiu, E. T. G. Wang, Y.-H. Fang, and H.-Y. Huang, "Understanding customers' repeat purchase intentions in B2C e-commerce: the roles of utilitarian value, hedonic value and perceived risk," *Information Systems Journal*, vol. 24, no. 1, pp. 85–114, 2014, doi: 10.1111/j.1365-2575.2012.00407.x.

[22] A. Rahman, R. N. Fauzia, and S. Pamungkas, "Factors Influencing Use of Social Commerce: An Empirical Study from Indonesia," *The Journal of Asian Finance, Economics and Business*, vol. 7, no. 12, pp. 711–720, 2020, doi: 10.13106/jafeb.2020.vol7.no12.711.

[23] M. Z. Alam, W. Hu, M. A. Kaium, M. R. Hoque, and M. M. D. Alam, "Understanding the determinants of mHealth apps adoption in Bangladesh: A SEM-Neural network approach," *Technology in Society*, vol. 61, p. 101255, May 2020, doi: 10.1016/j.techsoc.2020.101255.

[24] I. B. Yahia, N. Al-Neama, and L. Kerbache, "Investigating the drivers for social commerce in social media platforms: Importance of trust, social support and the platform perceived usage," *Journal of Retailing and Consumer Services*, vol. 41, pp. 11–19, Mar. 2018, doi: 10.1016/j.jretconser.2017.10.021.

[25] A. Baines, M. Ittefaq, and M. Abwao, "Social Media for Social Support: A Study of International Graduate Students in the United States," *Journal of International Students*, vol. 12, no. 2, Art. no. 2, 2022, doi: 10.32674/jis.v12i2.3158.

[26] S. Rahi, M. M. O. Mansour, M. Alharafsheh, and M. Alghizzawi, "The post-adoption behavior of internet banking users through the eyes of self-determination theory and expectation confirmation model," *Journal of Enterprise Information Management*, vol. 34, no. 6, pp. 1874–1892, Nov. 2021, doi: 10.1108/JEIM-04-2020-0156.

[27] J. Wang, F. Shahzad, Z. Ahmad, M. Abdullah, and N. M. Hassan, "Trust and Consumers' Purchase Intention in a Social Commerce Platform: A Meta-Analytic Approach," *SAGE Open*, vol. 12, no. 2, p. 21582440221091262, Apr. 2022, doi: 10.1177/21582440221091262.

[28] J.-J. Hew, L.-Y. Leong, G. W.-H. Tan, K.-B. Ooi, and V.-H. Lee, "The age of mobile social commerce: An Artificial Neural Network analysis on its resistances," *Technological Forecasting and Social Change*, vol. 144, pp. 311–324, Jul. 2019, doi: 10.1016/j.techfore.2017.10.007.

[29] T.-P. Liang and E. Turban, "Introduction to the Special Issue Social Commerce: A Research Framework for Social Commerce," *International Journal of Electronic Commerce*, vol. 16, no. 2, pp. 5–14, Dec. 2011, doi: 10.2753/JEC1086-4415160201.

[30] L.-Y. Leong, T.-S. Hew, K.-B. Ooi, A. Y. L. Chong, and V.-H. Lee, "Understanding trust in ms-commerce: The roles of reported experience, linguistic style, profile photo, emotional, and cognitive trust," *Information & Management*, vol. 58, no. 2, p. 103416, Mar. 2021, doi: 10.1016/j.im.2020.103416.
[31] J. L. Carrasco, "Structural Equation Model. Encyclopedia of Biopharmaceutical Statistics." Chapman and Hall/CRC, 2018.
[32] R. R. Marliana, "Partial Least Square-Structural Equation Modeling pada Hubungan antara Tingkat Kepuasan Mahasiswa dan Kualitas Google Classroom Berdasarkan Metode Webqual 4.0," *Jurnal Matematika, Statistika dan Komputasi*, vol. 16, no. 2, p. 174, Dec. 2019, doi: 10.20956/jmsk.v16i2.7851.
[33] G. D. Garson, *Partial Least Squares: Regression and Structural Equation Models*. Statistical Associates Publishers, 2016.
[34] A. Monecke and F. Leisch, "semPLS : Structural Equation Modeling Using Partial Least Squares," *Journal of Statistical Software*, vol. 48, no. 3, 2012, doi: 10.18637/jss.v048.i03.
[35] R. Gatautis and A. Medziausiene, "Factors Affecting Social Commerce Acceptance in Lithuania," *Procedia - Social and Behavioral Sciences*, vol. 110, pp. 1235–1242, Jan. 2014, doi: 10.1016/j.sbspro.2013.12.970.
[36] J.-H. Lee and C.-H. Song, "Effects of trust and perceived risk on user acceptance of a new technology service," *Social Behavior and Personality: an international journal*, vol. 41, no. 4, pp. 587–597, May 2013, doi: 10.2224/sbp.2013.41.4.587.
[37] Venkatesh, Morris, Davis, and Davis, "User Acceptance of Information Technology: Toward a Unified View," *MIS Quarterly*, vol. 27, no. 3, p. 425, 2003, doi: 10.2307/30036540.
[38] A. Purwanto and Y. Sudargini, "Partial Least Squares Structural Squation Modeling (PLS-SEM) Analysis for Social and Management Research : A Literature Review," *Journal of Industrial Engineering & Management Research*, vol. 2, no. 4, Art. no. 4, Jul. 2021, doi: 10.7777/jiemar.v2i4.168.
[39] W. W. Chin, "The Partial Least Squares Approach to Structural Equation Modeling," in *Modern Methods for Business Research*, 2nd ed., Lawrence Erlbaum, 1998, pp. 295–336.
[40] N. Shaw and K. Sergueeva, "The non-monetary benefits of mobile commerce: Extending UTAUT2 with perceived value," *International Journal of Information Management*, vol. 45, pp. 44–55, Apr. 2019, doi: 10.1016/j.ijinfomgt.2018.10.024.
[41] D. Daud and H. M. Yoong, "The Relationship Between Consumers' Price-Saving Orientation and Time-Saving Orientation towards Food Delivery Intermediaries (FDI) Services: an Exploratory Study," *Global Scientific Journals*, vol. 7, no. 2, pp. 175–190, Feb. 2019.

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