

Innovation and Evaluation of Technology Acceptance Model (Tam) in S-Commerce: A Case of Social Media Platforms in Ghana

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Abstract

Electronic commerce is quickly increasing in several countries, most notably in developing countries. A new electronic-commerce segment known as social commerce has evolved due to the popularity of social media. Consumer trust is important to social commerce success and impacts purchase choices. In modern times, majority of businesses have changed how from the traditional businesses and migrated to social commerce. Electronic commerce was the first of its sort, followed by social commerce, which conducted business via social networking platforms. Identifying the factors that influence social commerce use enables businesses to enhance those features and boost revenue. Thus, the purpose of this study was to examine how increased technology usage influences the social commerce activities of Ghanaian businessmen and women. A review of the literature resulted in the development of a conceptual model. Six hundred and twenty-five responses from Ghanaian enterprises and women who use e-commerce platforms were used to assess the conceptual approach. Partial Least Square Structural Equation Modeling (PLS SEM) was used to validate the model. The reliability and validity of the measuring apparatus were determined using measurement model analysis. To examine the model's fit and assumptions, we used structural model analysis. Five hypotheses were supported by the structural model data. Effort Expectancy, Perceived Ease of Use, Performance Expectancy, Perceived Utility, and Trust were shown to be the most influential criteria affecting behavioral intention to use s-commerce in Ghana. The findings of this research have major significance for academics and practitioners of social trade.

Keywords

Technology Acceptance Model, (TAM), Smart PLS SEM, Social Commerce,

1. Introduction

The usage of technology and the internet is increasing [1]. Technology has also influenced people's lives, hobbies, rituals, and routines [2]. Businesses of all sizes have been forced to reconsider their marketing methods [3] [4]. The internet has therefore become an important marketing, distribution, and sales tool [5] [6]. Internet-enabled gadgets (such as smart phones and Tablet PCs) have transformed online purchase habits [7] [8] [9] [10]. Rapp & Islam [11] defined "multichannel e-commerce" as "online, mobile, and in-store sales platforms". This kind of commerce includes the exchange of goods, services, and information, as well as promotional efforts [8].

By 2022, more entrepreneurs will be moving their enterprises online, making customer satisfaction more important than ever [12]. A steady refinement of business strategy and marketing tactics is required [13]. Internet shopping platforms are developing because of new digital platforms, giving customers more alternatives and better services and goods [15]. It's vital to understand why customers purchase online and to follow their leads. It's vital to understand how their behavior changes when they purchase online. Numerous theories and models have been presented to account for how humans utilize technology [14]. The purpose of this study is to analyze the technological acceptance model in the e-commerce industry. Acceptability of technology has developed into a key concern in software engineering.

Global net citizen susceptibility reached 51.2 percent in 2018, according to ITU statistics; electronic marketer data shows global network retail sales volume reached USD 2.8 trillion in 2018, up 23.3 percent year on year. Both Amazon (NASDAQ: AMZN) and Alibaba (NYSE: BABA) were valued at over USD 870 billion in October 2019. Online shopping has increased in popularity and continues to develop. In this current day, many net citizens have developed and learned to embrace e-commerce with social networks as a basis and bridge. In addition to Facebook, Instagram, Twitter, Pinterest and YouTube, developers were allowed to implement retail functionality. Taobao, Tmall, Alibaba's subsidiary, and Jindong (Nasdaq: JD) have all implemented group-buying or wholesale services. As e-commerce grows, Pinduoduo, a four-year-old firm, has a market value of over \$40 billion. S-commerce not only gives internet consumers additional purchase options, but also gives businesses more marketing options.

E-commerce and social commerce do not replace conventional commerce; they establish a new business model that combines the two. This implies that conventional commerce will never disappear, since even major chains use the internet to market and publicize their products and services on a worldwide scale [16] [17]. To successfully promote e-commerce and all its benefits, it is critical to understand how and why customers embrace technology [18] [19]. Ghana's

e-Commerce phenomena necessitate the use of TAM (Davis, 1989; Lopez *et al.*, 2011). Numerous recent studies have explored social and electronic commerce adoption [20] [21]. Electronic commerce refers to any commercial transaction that takes place electronically rather than in person. This kind of commerce includes the exchange of goods, services, and information, as well as the provision of digital content online, electronic payments transfers, promotional activities, and product and service advertising [22].

Despite the expanding importance of anticipated s-commerce operations and academic interest, consumer s-commerce usage continues to be restricted, and motives are being examined. It is a new kind of electronic commerce that includes purchasing and selling goods and services online using social networking sites. Only a few studies have been conducted in Ghana on s-commerce, a rapidly increasing kind of e-commerce. Numerous academics have examined the influence of trust on e-commerce, but very few have examined the effect on s-commerce. Researchers used a social media questionnaire to gather data and used TAM and UTAUT models, as well as PLS-SEM to perform empirical analysis (PLS: Partial Least Squares, SEM: Structure Equation Modeling). It concluded by comparing the impact of adding trust to the TAM and UTAUT models and expanding the UTAUT model. Considering this, the study sought to examine the TAM in e-commerce via the use of Ghanaian social networking sites. This study's primary goal was to analyze Ghana's TAM in e-commerce through social media.

The study specifically aimed at providing answers to the following research objectives

- 1) Effort expectancy has a positive significant effect on behavioral intention to use s-commerce in Ghana.
- 2) Facilitating conditions have a positive effect on behavioral intention to use s-commerce in Ghana.
- 3) Perceived ease of use directly affects the behavioral intention to use s-commerce in Ghana.
- 4) Performance expectancy through review and rating on a job has a positive and significant effect on behavioral intention to use e-commerce and s-commerce in Ghana.
- 5) Perceived usefulness significantly affects perceived ease of use of s-commerce in Ghana.
- 6) Social influence of the community has a positive and significant influence on behavioral intention to use e-commerce and s-commerce in Ghana.
- 7) Trust directly affects the perceived usefulness of the use s-commerce in Ghana. Trust has a significant effect on behavioral intention to use s-commerce in Ghana

This article starts with an introduction that sets the scene for the study. Section 2 studies the Extended Technology Acceptance Model (TAM) in Ghana utilizing social media. Section 3 describes the method, whereas Section 4 summarizes the findings. Finally, Section 5 summarizes the paper's results, implications,

and future study directions.

2. Literature Review

2.1. Theory of Reason Action, Theory of Planned Behavior, Technology Acceptance Model and Unified TAUT Model

TAM (Technology Acceptance Model) is a core idea in information systems developed by Davis [23]. Sarker *et al.* [24] discovered that since 2012, TAM has been the most often utilized theoretical model in empirical studies of s-commerce. The notions outlined above are drawn from [25] TRA (Theory of Reasoned Action) and Ajzen's TPB (Theory of Planned Behavior) (1985). According to TRA, which is based on psychology, a user's behavior is influenced by his or her BI (Behavioral Intention), which is influenced by his or her attitudes and subjective norms; TPB believes that including perceived behavioral control in TRA will provide a more accurate representation of actual behavioral status. The phrase "perceived behavioral control" relates to an individual's perception of how easy or difficult an activity is to do [26]. TAM combines the best characteristics of TRA and TPB, suggesting that perceived utility and perceived ease of use are the two most important variables affecting user attitudes and behavior toward an information system. The former indicates how much a user believes a certain system may help him or her enhance their work performance, while the latter indicates how simple a specific system is to use. Users' utility and ease-of-use judgements impact their attitudes, which in turn shape their behavioral intention and subsequent use behavior. Venkatesh *et al.* [1] introduced the UTAUT, a method that incorporates TRA, TPB, and TAM.

The model's four central variables, performance expectancy (PE), which represents usefulness, effort expectancy (EE), which represents ease of use, facilitating conditions (FC), which represents ease of use, and social influence (SI), which represents social influence, are all influenced to varying degrees by the regulation functions of sex, age, and other variables. TAM and UTAUT are both critical theoretical research models for measuring the degree of technology acceptance, according to [27] and [28] conducted a literature study and indicated that TAM and UTAUT are the most mature technology acceptance theories. Venkatesh *et al.* [1] noted many concerns with content validity and recommended that future study revalidate the scales produced for each construct and/or expand UTAUT with other measures. Abed [29] evaluated Instagram's s-commerce by augmenting UTAUT with additional variables.

2.2. Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is a behavioural model that elucidates the context in which information technology is adopted [23]. The concept postulates that behaviour is a result of Perceived Usefulness and Perceived Ease of Use, and that these two factors have a causal link with the intended use of Technology [30] and [31]. Perceived Usefulness is related to an individual's be-

belief that using technology would increase its performance. On the other side, Perceived Ease of Use is related to a person's belief that using technology would need less effort to complete a task [32] [33]. These two factors have a direct effect on one's attitude toward technology usage, which, according to [25], is a taught proclivity to respond positively or negatively to a particular item. The attitude is regarded to be the product of the subject's ideas about the conduct and its consequences, as well as the weight accorded to such beliefs [7].

Why humans embraced or rejected computers became one of the most difficult questions in Information Systems (IS) research. The technology acceptance model was considered a supplement to the examination of the spread of innovation theory [34]. The innovation hypothesis had a wide view of invention spread. TAM, on the other hand, described the adoption of technology via flexible paradigms that were more accessible to operationalization and empirical testing, which influenced individual's adoption behaviours [35]. TAM was first developed by [23] as a modification of the Theory of Reasoned Action (TRA) for the purpose of demonstrating user acceptance of information systems. The primary objective of TAM was to provide an explanation for the effect of external circumstances on internal values, beliefs, and goals [23]. When cost and result were assessed in adoption research, the TAM was chosen as the optimal model since it provided information regarding differences in attitudes about embracing technology. TAM established two primary beliefs: perceived usefulness and perceived ease of use [36]. **Figure 1** briefly describe Technology Acceptance model in detail.

2.3. S-Commerce

Social commerce is a relatively young subcategory of e-commerce that has developed in recent years as ICT and Web 2.0 technologies have expanded. In 2005, Yahoo pioneered the concept of e-commerce. S-commerce is a fast-increasing segment of e-commerce, thanks to the ability of users to communicate online through social media [37]. This enables individuals to share their experiences, consult with one another, and learn about and buy items and services online. S-commerce is a term that relates to online commerce and distribution of goods using social media networks [38]. It is a relatively new trend in the e-commerce sector (Huang & Benyoucef, 2013). S-commerce, as described by [38] consists of

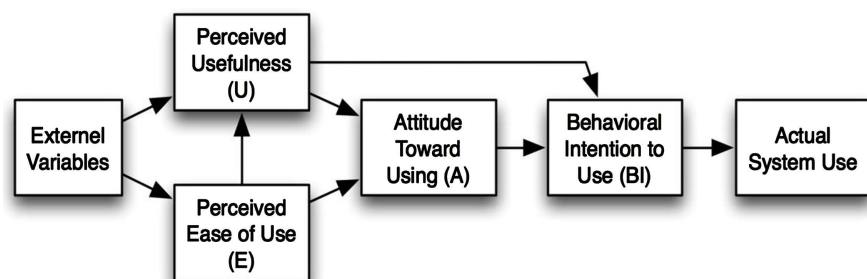


Figure 1. Technology acceptance model. Source: Davis [25].

three primary characteristics: social networking technology, community involvement, and economic activity. According to numerous analysts, the growth of social networking has impacted social commerce [39].

S-commerce is a new kind of e-commerce that utilizes social media platforms since the internet has become a necessary component of doing business online [40]. The 2017 S-Commerce Industry White Paper According to Analysis International's report, Big Data in China, s-commerce is a subgenre of e-commerce that is focused on interpersonal relationships. It enables commodities purchases via social interaction and user-generated content, while also adding social aspects of sharing and participation into trade. It is a kind of social network commerce that mixes e-commerce with social media while emphasizing trust. It is one of the primary manifestations of contemporary e-commerce.

2.4. Trust

E-commerce needs an elevated degree of trust. It is related to the inherent insecurity that exists in most social and commercial dealings [41]. Gefen [42] defines trust as “an individual's desire to rely on others based on their competency, compassion, and honesty”. Mayer *et al.* [41] define trust as a significant completed specified action based on the expectation of the other party when one is ready to ignore the risk of harm created by the other party's activities without assessing its capacity. They discovered via their research that the three most critical characteristics that earn clients' confidence are capability, generosity, and honesty. McKnight, Choudhury, and Kacmar [43] created and verified metrics for a multidisciplinary, multidimensional model of trust in internet commerce.

According to research conducted in the context of s-commerce, trust is critical in e-commerce [44] [45] [46]. In the case of e-commerce, uncertainties are often exacerbated by the huge quantity of data provided by customers and the absence of face-to-face contact. In the realm of online shopping, trust is critical. However, due to the prominence of the created materials, trust is even more critical on e-commerce platforms [47]. According to [27], trust plays a critical influence in the behavior of s-commerce users. Not only does trust improve perceived risk on a social commerce platform, but it also boosts buy intentions [48].

2.5. Research Hypotheses and Model

According to [21] Theory of Planned Behavior, the most important predictor of behavior is behavioral intention. As a result, we describe buying habits in this research using behavioral intention. The UTAUT paradigm permits the creation of four hypotheses, as seen in **Figure 1**, but TAM maintains that perceived ease of use (PU) has a direct effect on perceived usefulness (PU). Performance expectation (PE) is defined by UTAUT as PU, while effort expectation (EE) is specified as PEOU. According to the researchers, PEOU is a significant predictor of PU [49] [50]. Additional research found that the connection benefited e-commerce [2] [50]. Indeed, trust is a persistent issue in both online and offline business. As

e-commerce gets more prevalent, this kind of fear among customers becomes more prevalent. In a variety of application scenarios, trust is a critical component of s-acceptance commerce [2] [45] [51]. Indeed, trust has a considerable impact on individuals' proclivity to engage in social media-based e-commerce transactions. According to the study results [52].

Thus, the hypotheses could be proposed:

H1: Expectancy of effort has a favorable influence on behavioral intention to engage in social media platforms in Ghana.

H2: Facilitating conditions have a significant positive effect on behavioral intention to use social media platforms in Ghana for business.

H3: Perceived ease of use directly affects the behavioral intention to use social media platforms in Ghana for business.

H4: Performance expectancy through review and rating on a job has a positive effect on behavioral intention to use social media platforms in Ghana for business.

H5: Perceived usefulness significantly affects perceived ease of use of social media platforms in Ghana for business.

H6: Social influence of the community has a significant influence on behavioral intention to use social media platforms in Ghana for business.

H7: Trust directly affects the perceived usefulness of the use of social media platforms in Ghana for business.

H8: Trust has a significant effect on behavioral intention to use social media platforms in Ghana for business.

A conceptual model guided the work. This was explicitly defined by the study's research hypothesis. The model is described in full in **Figure 2** and **Figure 3**.

Figure 2 describes the conceptual model that was constructed after review of related literature on technology acceptance model, social commerce and trust.

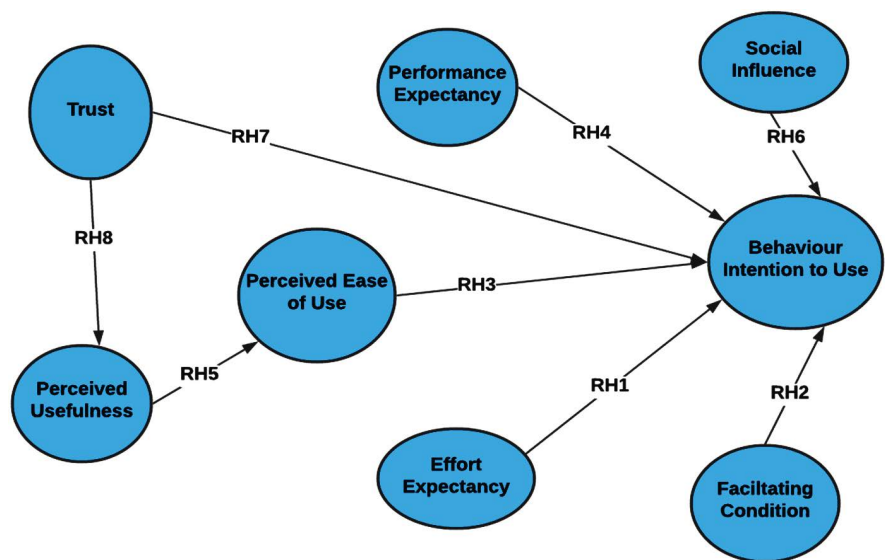


Figure 2. Conceptual model.

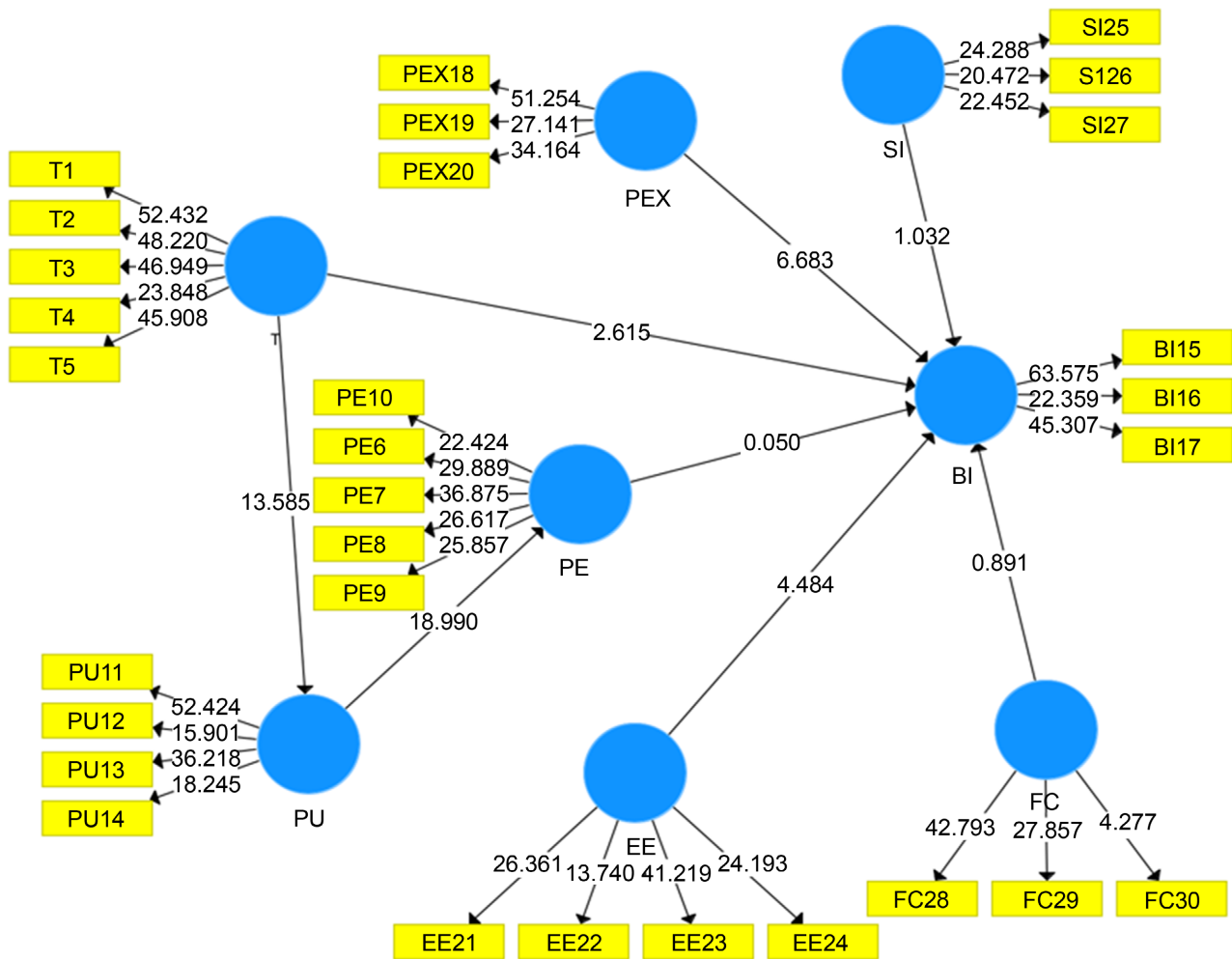


Figure 3. Structural model for the study (outer loadings, path coefficient and R²).

The conceptual model was further guided by the research objectives. The model was designed and tested to determine if Trust, Perceived usefulness, Performance expectancy, effort expectancy, social influence and facilitating conditions affects business behavioral intention to use s-commerce in trading. After testing the model, a structural model was arrived at. This model was deemed valid and reliable for its results to be analyzed and interpreted. The model established the relationships exist between the endogenous variables and exogenous variables investigated.

Using SMART PLS 3.2.6, the structure allowed researchers to determine the link between the dependent and independent variables.

3. Research Methodology

3.1. Research Design

To fully execute the positivist paradigm and to quantify and measure the research conceptual model, the phases of research measurement must be correctly operationalized. The study used a quantitative research technique to examine the ex-

tended technology acceptance model (tam) in e-commerce, with a particular emphasis on Ghanaian commercial social media platforms. The study adopted a sequential explanatory research design based on this technique. In this investigation, the researchers used a quantitative sampling technique. A quantitative survey was undertaken with a random sample of Ghanaian s-commerce users to ascertain their perceptions of the measuring items. The study used a quantitative research technique to evaluate Ghana's Technology Acceptance Model in s-commerce, according to the positivist research paradigm. This subfield of study included the use of statistical, mathematical, or computational tools to the empirical investigation of social phenomena via the development and application of theories, hypotheses, and/or mathematical models pertinent to the phenomena. The study started with a thorough review of the literature, considering all key and relevant elements such as societal effect, performance expectation, effort expectation, enabling conditions, and behavioral intention to use. The next step included developing an instrument for data collecting while also ensuring the data's validity and dependability

3.2. Population and Sampling

The study's participants were male and female social commerce website users (Facebook, WhatsApp, eBay, Amazon, Instagram, Twitter, YouTube, Personal websites, WeChat and QQ) who trade in Ghana. The researcher identified these s-commerce websites by examining the most popular eCommerce sites in Ghana (as well as traditional e-commerce sites with social components) [52] [53]. Those e-commerce sites were then scrutinized one by one. S-commerce was defined as any e-commerce website with social elements including comments, reviews, and recommendations. This study's major analytical approach was SEM. Covariance and correlations will be unstable with small sample sizes [54].

The MLE technique used by SEM necessitates a high sample size. A sample size of 50 yields accurate results, 100 - 150 demonstrates the stability of MLE solutions, and 150 - 400 is the optimal sample size [55]. For investigations including more than seven latent variables, Hair *et al.* [56] proposes a sample size of 500. The framework in this study had 11 latent constructs. Kline [57], on the other hand, recommends following the 10:1 or N: q rule of thumb, where N denotes the number of occurrences and q denotes the number of components. This study consists of eight components (including dependent constructs) and thirty-one items. By multiplying 8 by 31, the sample size is increased to 243. The researcher chose a sample size of 650 s-commerce website consumers who use s-commerce for business based on these two perspectives. To ensure a highly representative sample size, the research questionnaire was given to family members, friends, and classmates, and they were requested to resend it to their connections. Our investigation was open until November 25, 2021 (a three-month period). This questionnaire had 625 responses, yielding a response rate of 96 percent. **Table 1** summarizes the survey's findings.

Table 1. Respondents' demographics.

Variables and Sub-Scale	Frequency (%)	Variables and Sub-Scale	Frequency (%)
1) Gender		Amazon	53 (8.48)
Male	351 (56.2)	eBay	55 (8.8)
Female	274 (43.8)	Others	14 (2.22)
2) Age		6) Country of Business	
21 - 25 years	162 (25.9)	Africa	208 (33.3)
26 - 30 years	225 (36)	Asia	107 (17.1)
Above 31 years	160 (25.6)	North America	87 (13.9)
Below 20 years	78 (12.5)	Europe	81 (13.0)
3) Education		South America	65 (10.4)
Technical School	155 (24.8)	Australia	77 (12.3)
Secondary School	75 (12.0)	7) Business Engaged in	
Bachelor's degree	298 (47.7)	Accessories	94 (15.0)
Master's degree	97 (15.5)	Automobile	98 (15.7)
4) Income Level		Clothing and Fashion	90 (14.4)
Below 500	166 (26.5)	Education	35 (5.6)
501 - 1500	176 (28.2)	Software	42 (6.72)
1501 - 2000	139 (22.2)	School	41 (6.56)
2001 - 2500	82 (13.2)	Manufacturing	51 (8.16)
Above 2500	62 (9.90)	Ornaments	63 (10.0)
5) S-Commerce Platforms		Food	74 (11.8)
Facebook	115 (18.4)	Entertainment	31 (4.96)
WeChat	77 (12.3)	Design and Arts	6 (0.96)
WhatsApp	128 (20.5)		
Instagram	98 (15.7)		
Personal Website	85 (13.6)		

3.3. Data Collection Instrument

The research model has six variables and eight hypotheses. Then they are released at random. After gathering appropriate questionnaire data, the data must

be cleaned and handled with. This research uses PLS-SEM to test each hypothesis and then the overall model. This research uses TAM and UTAUT. The UTAUT model's specific measurement of PE (same as PU in the TAM model), SI, and BI is based on pertinent research results and is shown via three questions in the questionnaire for three measurement indices. Each question is scored using the Likert 1 - 7-point method, which is based on mature scales. 1 - 7 denotes "vehemently disagree" to "vehemently agree". **Table 2** summarizes the latent and manifest construct for the study.

3.4. Data Processing and Analysis

For this investigation, we employed primarily two software tools to gather, handle, and analyze data. The questionnaire and sample descriptive statistics were created using Google Forms. We were able to evaluate the theoretical model's assumptions using the Smartpls-3.2.6 application. Following that, the survey data were analyzed using partial least squares (PLS). The PLS approach to SEM estimation is gaining popularity as a method for estimating large, sophisticated models [61]. PLS-SEM is used to determine the critical parameters affecting the acceptance of the use of social media platforms for use in business in Ghana. While PLS-PM is not without errors, it does give data-driven insights into causation and magnitude. Dense observations were utilized since PLS-SEM was used due to the sufficiency of the data. The PLS model has structural and measurement models. The structural model is analyzed for internal reliability and validity. For hypothesis validation, PLS analyzes the structural model and employs t-tests and path values. To test the conceptual framework and the predicted correlations between components, PLS-SEM analysis was performed [62].

4. Results and Discussion

4.1. Empirical Results and Discussions of Study

Measurement Model

The measuring model links latent variables to their (item) indicators. PLS-SEM was used to verify the model (Smart PLS 3.2.6) [63]. SEM permits the examination of data and structural models concurrently [37]. This technique offers several benefits over regression analysis [42]. Partial Least Squares is used in this investigation (PLS). PLS was employed in this research since it is a commonly used and valuable piece of software in the behavioral sciences [64] [65]. PLS is also effective with very small samples [42]. Due to the fact that similar research used PLS for data analysis, the current study's findings may be easily compared to the existing literature. Additionally [66] PLS is superior for developing new models, but covariance-based techniques are superior for analyzing existing models.

4.2. Validity and Reliability

Our structural model's validity was evaluated using CR and AVE [67]. Chin &

Table 2. Construct operationalization.

Constructs	Code	Measurement Items	Source
Trust (T)	T1	Social networking platforms are reputable.	[41] [58] [59] [60]
	T2	Social networking platforms provide the notion that they uphold their pledges and commitments.	
	T3	I trust social media because they are looking out for my best interests.	
	T4	I know they are sincere based on my experience with social media.	
	T5	My experience with social media has shown me that they care about customers.	
Perceived Ease of Use (PE)	PE6	There is ease of learning.	[30]
	PE7	It is understandable to use the platforms.	
	PE8	It requires less effort or skills to use the platforms.	
	PE9	Utilizing the social media platforms does not involve a great deal of brain strain.	
	PE10	The platform is easy to use.	
Perceived Usefulness (PU)	PU11	The platforms increase productivity.	[30]
	PU12	The platforms are effective in improving sales.	
	PU13	There is high degree of online purchases.	
	PU14	The platforms are beneficial in boosting sales and marketing.	
Behavior Intention of Use (BI)	BI15	In the future, I aim to use social commerce.	[1]
	BI16	I anticipate that I will engage in social commerce in the future.	
	BI17	I intend to make regular use of social commerce.	
Performance Expectancy (PEX)	PEX18	Social commerce would be beneficial in my everyday life.	[1]
	PEX19	By using social commerce, I can complete things more rapidly.	
	PEX20	By using social commerce, I can boost my productivity.	
Effort Expectancy (EE)	EE21	My engagement with social commerce would be transparent and comprehensible.	[1]
	EE22	It would be simple for me to develop expertise in social commerce.	
	EE23	I believe that social commerce would be simple to utilize.	
	EE24	For me, learning how to utilize social commerce is simple.	

Continued

Social Influence (SI)	SI25	Individuals that have influence over my conduct believe that I should engage in social commerce.	
	SI26	Important people in my life believe I should engage in social commerce.	[1]
	SI27	By and large, those whose opinions I respect have endorsed the use of social commerce.	
Facilitating Conditions (FC)	FC28	I possess the requisite resources to engage in social trade.	
	FC29	I possess the requisite understanding to engage in social commerce.	
	FC30	Social commerce does not integrate well with the other platforms that I use.	[1]
	FC31	I may seek assistance from others if I have challenges when using social commerce.	

Yao [68] assert convergent validity with a probability of 0.50. They argue that the square root of the AVE of each latent concept should exceed its correlation coefficients. The AVE outperforms the inter-correlations for each latent concept. If you're still undecided, Cronbach's alpha and composite reliability were also assessed. Sufficient dependability of 0.60 composite and 0.70 Cronbach's alpha was achieved [69] [70]. As shown in **Table 3**, this condition was met. As a result, the study's results are reliable.

The factor loadings, Cronbach's alpha, composite reliability, and average of the model's extracted variance are listed in **Table 3**. All the numbers in the table are more than the acceptable levels, which are typically 0.6, 0.7, 0.7, and 0.5. [2] [27] [65]. This demonstrates the validity of the constructs included in our theoretical model. The Rho value of D.G varies between 0.739 and 0.929 0.7, and the Cronbach's Alpha of the construct varies between 0.728 and 0.915 0.7, indicating that our constructs have a high degree of internal consistency and reliability. The model's composite reliability (CR) is between 0.818 and 0.936 > 0.8. AVE values range from 0.682 to 0.744, >0.5. We may deduce from these past results that convergent validity is guaranteed. Additionally, the model's discriminant validity must be evaluated. The findings are summarized in **Table 3**. Acceptable values are those that fall below the 0.90 cutoff [62]. The results ensure the constructs' reliability and validity.

Additionally, discriminant validity was evaluated to see whether measures that are not predicted to be related are unrelated. The findings of the discriminant validity test are presented in **Table 4**. According to the Fornell-Larcker criteria, the square root of the average variance recovered for each construct should be larger than its strongest correlation with any other construct [71] [72] [73]. As seen in **Table 5**, the data exhibits a high degree of discriminant validity.

Table 3. Structural model's construct reliability and validity.

Constructs	Indicators	Factor Loadings > 0.6	Cronbach's Alpha > 0.7	Rho_ACP > 0.7	CR > 0.8	AVE > 0.5
Trust (T)	T1	0.856	0.915	0.929	0.936	0.744
	T2	0.875				
	T3	0.887				
	T4	0.824				
	T5	0.869				
Perceived Ease of Use (PE)	PE6	0.824	0.885	0.887	0.916	0.684
	PE7	0.847				
	PE8	0.829				
	PE9	0.823				
	PE10	0.813				
Perceived Usefulness (PU)	PU11	0.876	0.845	0.867	0.895	0.682
	PU12	0.77				
	PU13	0.855				
	PU14	0.797				
Behavioral Intention to Use (BI)	BI15	0.885	0.84	0.848	0.904	0.758
	BI16	0.838				
	BI17	0.887				
Performance Expectancy	PEX18	0.881	0.833	0.836	0.9	0.749
	PEX19	0.854				
	PEX20	0.862				
Export Expectancy (EE)	EE21	0.816	0.834	0.838	0.89	0.67
	EE22	0.748				
	EE23	0.879				
	EE24	0.826				
Social Influence (SI)	SI25	0.855	0.766	0.766	0.865	0.682
	SI26	0.829				
	SI27	0.792				
Facilitating Condition (FC)	FC28	0.886	0.728	0.739	0.818	0.684
	FC29	0.86				
	FC30	0.475				

Table 4. Discriminant validity.

	BI	EE	FC	PE	PEX	PU	SI	T
BI	0.87							
EE	0.79	0.818						
FC	0.67	0.775	0.764					
PE	0.667	0.784	0.758	0.827				
PEX	0.805	0.834	0.759	0.814	0.865			
PU	0.801	0.869	0.749	0.788	0.846	0.826		
SI	0.616	0.71	0.669	0.673	0.687	0.696	0.826	
T	0.474	0.637	0.639	0.749	0.707	0.651	0.599	0.862

Table 5. Heterotrait-monotrait ratio (HTMT).

	BI	EE	FC	PE	PEX	PU	SI	T
BI								
EE	0.936							
FC	0.859	1.006						
PE	0.762	0.909	0.983					
PEX	0.954	1.000	1.010	0.941				
PU	0.953	1.029	0.975	0.897	0.999			
SI	0.764	0.892	0.968	0.818	0.859	0.852		
T	0.513	0.715	0.830	0.834	0.790	0.700	0.707	

*Highlighted values in diagonal are square root of AVE and correlation are off diagonal.

While the Fornell-Larcker criteria and cross-loadings are still the most often used approaches for measuring discriminant validity in PLS-SEM, an alternate approach, such as the heterotrait-monotrait (HTMT) correlation ratio, is gaining popularity [73]. Henseler *et al.* [73] shown that HTMT outperforms other methods for testing discriminant validity.

The Bootstrapping technique permits the study of the importance of the link between model components through the interpretation of t-statistics, as well as the correlation between these constructs by a comprehensive analysis of the path coefficient values. The t-statistics must be greater than 1.96 to be deemed significant. **Table 6** summarizes these data.

After establishing the measurement model's validity and reliability, structural model analysis was used to determine the conceptual model's explanatory power and to evaluate the hypotheses. The coefficient of determination (R²) was used to estimate the study model's explanatory capacity [74]. The path coefficient values may be used to assess the strength of the cause-effect relationship [61]. The bootstrapping method was used to ascertain the effect of each step [62]. To

Table 6. Hypothesis testing.

Hypothesis	Path coefficient (β)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ($ O/STDEV $)	p Values	Hypothesis testing Decision
EE \rightarrow BI	0.378	0.376	0.084	4.484	0.000	Supported
FC \rightarrow BI	0.054	0.063	0.06	0.891	0.373	Not Supported
PE \rightarrow BI	0.005	-0.012	0.096	0.05	0.96	Not Supported
PEX \rightarrow BI	0.581	0.589	0.085	6.863	0.000	Supported
PU \rightarrow PE	0.788	0.784	0.041	18.99	0.000	Supported
SI \rightarrow BI	0.057	0.058	0.055	1.032	0.302	Not Supported
T \rightarrow BI	-0.248	-0.246	0.095	2.615	0.009	Supported
T \rightarrow PU	0.651	0.654	0.048	13.585	0.000	Supported

Note: significance level of path coefficient: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

establish the statistical significance of path coefficients, the t-test with a 95% confidence level was performed. Through bootstrapping, Smart PLS version 3 can produce both T and p values. The coefficient of determination, R^2 , for “users’ behavioral intention to use social commerce” is 0.722, according to the data. This implies that the six additional latent variables account for 72.2 percent of the variance in the intentions of business owners to embrace social commerce. Additionally, the study revealed that the variable Perceived Ease of Using Social Commerce for Business Operations explained 62% of the difference in “perceived usefulness, effort expectation, trust, facilitating conditions, and performance expectation”. **Table 7** presents the R-squared and adjusted R-squared of the model.

Estimating the Effect Size using f squared (f^2)

The study tested the significance of the model using the effect size (f squared (f^2)). The effect size is a statistical parameter that indicates the strength of a link between two variables [56].

$$ff^2 = \frac{RR^2}{1 - RR^2}$$

where RR^2 is the squared multiple correlation.

Table 8 shows the strength of effect size. By convention, f^2 effect sizes of 0.35, 0.15 and 0.02 are termed large, medium, and small respectively [62] [65]. Based upon **Table 8**, it was revealed that the variables existed a moderate effect size on Behavioral intention. The study further assessed Predictive Relevance Q^2 .

Table 9 shows the assessment of predictive relevance. A value of $Q^2 > 0$ confirms the presence of predictive relevance [62]. The results from the blindfolding process provide a Q^2 value above 0, confirming that the structural model exhibits predictive relevance. The model was deemed fit for the use of TAM and UTAUT model in s-commerce. This has clearly been illustrated in **Table 10**.

Table 7. R-square and R-square adjusted.

Latent Constructs	R Square	R Square Adjusted
BI	0.722	0.716
PE	0.62	0.619
PU	0.424	0.422

Table 8. Strength of effect size.

	BI	PE	PEX	T	PU
F2	0.117	1.635	0.263	0.088	0.736

Table 9. Predictive relevance.

	SSO	SSE	Q ² (=1 – SSE/SSO)
BI	750	358.431	0.522
EE	1000	1000	
FC	1000	1000	
PE	1250	734.067	0.413
PEX	750	750	
PU	1000	734.583	0.265
SI	750	750	
T	1250	1250	

Table 10. Model fit.

	SRMR	d_ULS	d_G	Chi-Square	NFI
Saturated Model	0.089	3.969	1.835	2381.095	0.671
Estimated Model	0.185	17.010	2.368	2738.002	0.621

4.3. Discussion and Conclusion

This research studied the influence of several aspects of e-commerce on behavioral intentions, as well as the effect of trust. More precisely, eight hypothesis models for various influencing elements were built and experimentally contrasted and evaluated using the TAM and UTAUT theoretical models [1]. S-commerce is attracting the interest of academics and businesses not only for the number of sales that such channels and tools generate, but also for the predicted development. Based on a behavioral model developed during an earlier literature study, an analysis of the impact of s-commerce on the intention to acquire items and services has been conducted. As a result, we have suggested a study model that explains why and how consumers embrace social commerce. The measurement model's findings reveal that it is sufficiently reliable and valid for all constructs in the eight study models.

The first research hypothesis revealed a significant relationship between effort expectancy and the behavioral intentions of social commerce users. The study discovered a significant positive relationship between effort expectancy and behavioral intention, indicating that users' clear understanding of the interaction between social commerce and business, as well as its ease of use, make it easier for them to choose social commerce as their mode of business. This indicates that an increase in effort expectation will result in a 37.8 percent rise in behavioral intention to utilize social commerce for commercial operations. Additionally, the research discovered a non-significant influence of enabling circumstances on behavioral intention to utilize social commerce ($H2 = 0.054$, $p = 0.373$). The association between perceived ease of use and behavioral intention to utilize social commerce platforms for commercial purposes was also similar. According to the results of this research, there is a non-significant ($H3 = 0.005$, $p = 0.96$) association between perceived ease of use and behavioral intention. Expectations about performance had a statistically significant influence on behavioral intention to engage in social commerce ($H4 = 0.581$, $p = 0.000$). This means that social commerce has a substantial beneficial influence on businessmen and women's performance expectations since it helps them to complete company operational tasks more quickly and so boosts their productivity. The study's results indicated that performance expectations might enhance the likelihood of using social commerce by 58.1 percent. Additionally, the research validated the prediction that perceived usefulness had a substantial positive influence on perceived ease of use of social commerce platforms for doing business ($H5 = 0.788$, $p = 0.000$). For hypothesis six, a non-significant association between social influence and behavioral intention to utilize social commerce for marketing and company operations was discovered ($H6 = -0.057$, $p = 0.302$), suggesting that we cannot trust this assumption. Trust has a substantial effect on behavioral intentions to utilize social commerce ($H7 = -0.248$, $p = 0.009$) and perceived utility of social commerce for company operations ($H8 = 0.651$, $p = 0.000$). Trust seems to have a considerable detrimental influence on behavioral intention to utilize social commerce, but a beneficial effect on perceived usefulness.

The study's findings confirmed those of [75], who discovered that perceived utility influences attitudes about s-commerce use, as well as perceived usefulness and simplicity of use, both with and without previous experience with online transactions. In response, [75] provide parameters for predicting perceived utility in e-commerce, including perceived product quality. These characteristics need further examination in future studies [76]. According to [77] the positive association between attitude and readiness to utilize e-commerce is conditional on prospective customers' understanding of theft risks, data privacy, and supplier dependability. Trust, perceived ease of use, perceived usefulness, social influence, effort expectation, and performance expectation were all identified as important predictors of purchase intention among online consumers [78]. Additionally, a substantial association between trust and intent to use is revealed, im-

plying the need of implementing tactics that increase user security and confidence in the items they buy and use. This is congruent with the results of [74], who observed that when it comes to completing online purchases, trust is directly tied to qualities such as confidence and enjoyment. Businesses must develop computer and communication technologies that demonstrate to consumers the trustworthiness of online transactions on an e-commerce platform in order to sell their items online, as stated by [79] trust in developed nations is conditional on security and other characteristics, as extensive studies with a high degree of repeatability have proven [80] [81] [82]. However, in less developed nations, owing to macroeconomic and political instability, the relative relevance of each condition varies.

4.4. Limitation and Future Research

The study has certain drawbacks. First, the lack of longitudinal data collection is one of the reasons why survey sample sizes are too small to generalize findings. Second, the measuring items were adapted from earlier research, resulting in inaccuracies. Fourth, trust was thought to be the sole element affecting trust performance, but there may be others. Fifth, the present study's sample gender ratio is uneven, since female customers buy online more than male consumers, and trust building processes for men and women may vary. Finally, the research ignored the impact of individual and societal variables. Future studies may include more male customers to achieve a more balanced gender ratio, explore a broader variety of qualities and factors that impact trust and trust performance, investigate the direct effects of different external variables on purchase choices.

Conflicts of Interest

The authors declare no conflict of interest regarding the publication of this paper.

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