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## Article

# Factors influencing the usage of e-business to improve SME performance

International journal of e-business research

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*Reference:* Adejare Yusuff Aremu/Arfan, Shahzad (2023). Factors influencing the usage of e-business to improve SME performance. In: International journal of e-business research 19 (1), S. 1 - 16.  
<https://www.igi-global.com/viewtitle.aspx?TitleId=324065>.  
doi:10.4018/IJEBR.324065.

This Version is available at:

<http://hdl.handle.net/11159/654588>

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# Factors Influencing the Usage of E-Business to Improve SME Performance

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## ABSTRACT

This article presents a theoretical framework for investigating factors influencing e-commerce implementation among SMEs to enhance their performance, and how these factors—percieved ease of use, perceived usefulness, and perceived privacy—could be used for this purpose. Furthermore, this article examined these factors' influence on e-commerce adoption based on three theories, “resource-based view, unified theory of acceptance and use of technology theories.” The data was obtained from a novel questionnaire, which was distributed copies to owners and managers of two hundred and five (205) SMEs in Oyo State, Nigeria. PLS-SEM for analysing empirical data derived. It was found that SMEs' e-commerce adoption to enhance their performance is highly impacted by perceived ease of use and perceived usefulness. On the other hand, perceived privacy is not significantly linked to e-commerce use. The findings were then used to construct a conceptual framework for e-commerce adoption among SMEs.

## KEYWORDS

adoption, E-commerce, Perceived ease of use, Perceived privacy, Perceived usefulness, SMEs Performance

## INTRODUCTION

Small and medium-sized Enterprises (SMEs) have dominated the business sector worldwide, including in Nigeria. SMEs are major contributors to employment generation. They provide opportunities for entrepreneurship and create jobs at both local and national levels. SMEs are often more labour-intensive than larger enterprises, leading to a higher job creation potential per unit of capital invested. SMEs contribute significantly to overall economic growth and competitiveness. Their presence fosters competition in the market, encourages efficiency, and stimulates productivity. SMEs can drive regional development, promote industrial diversification, and contribute to exports, thus enhancing the competitiveness of a country's economy. They have become the main contributors to the global economy. In this regard, 85 to 90% of business establishment all over the globe are categorised as SMEs and has provided significant employment opportunities to the community and countries as

DOI: 10.4018/IJEBR.324065

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well (Herzallah & Mukhtar, 2015; Mwila & Ngoyi, 2019; Hussain et al., 2021; Gao et al., 2023). Governments worldwide have realised the significant role played by SMEs in regional development, specifically in elevating the gross domestic product (GDP). At the same time, SMEs can help growth by providing employment opportunities and eradicating poverty (Awa et al., 2015; Agwu & Murray, 2018; Ocloo et al., 2020). It is posited that SMEs could have the opportunity to grow into future large companies and corporations (SBA, 2017) and that the success of SMEs has a significant impact on a country's wealth and economic growth (Ul Hassan & Iqbal, 2020; Shahadat et al., 2023).

SMEs contribute 95% of the economy in most countries (Yaseen et al., 2016), and in Europe, it was reported that SMEs make up 99.8% of established firms. They also provide two-thirds of employment in the region (Ghisetti & Pedraza, 2017). Meanwhile, in Nigeria, SMEs account for 90% of the total established businesses (Ahmad, 2019). Reports state that SMEs contribute an average of 50% of the GDP in high-income countries (Ghisetti & Pedraza, 2017). This highlights the value of comprehensive studies on the business growth of SMEs, and studying SME performance is essential as it supports a country's development.

The types of e-commerce used are business-to-business (B2B), business-to-consumer (B2C) and business-to-business-to-consumer (B2B2C). Meanwhile, the use of smartphones, tablets, laptop computers, and smart televisions has increased in line with the growth of internet technology. This phenomenon has given rise to e-commerce and created SMEs with business opportunities by connecting them with more diversified customers. E-commerce brought changes by boosting output and effectiveness, assisting companies in transitioning from traditional to digital business models and connecting with new customers locally, regionally, or globally. Previous works, including Yaseen et al. (2016), SBA (2017), Agwu & Murray (2018), Hussain et al. (2021) and Kilay et al. (2022), documented the role of E-commerce in revolutionising businesses, especially in developed countries.

On the contrary, SMEs in developing countries underutilise the networking mechanisms that promote e-commerce and enhance SME performance (OECD, 2017; Khan et al., 2021). This is because SMEs in developing countries have limited access to Internet resources to facilitate e-commerce. As a result, these SMEs are slow to assimilate e-commerce into their businesses (Jamali et al., 2015; Ghisetti & Pedraza, 2017; Agwu & Murray, 2018). Thus, the Nigerian government is invested in improving the sustainability of SME performance by motivating SMEs to increase firms' competitiveness through e-commerce. E-commerce has become an integral part of the modern economy, transforming how businesses operate and people engage in commerce. Its importance lies in its ability to enhance convenience, global reach, profitability, customer relationships, and innovation.

SMEs contribute to nearly 70-90% of the global GDP. SMEs have a significant presence in developed countries like China, Japan and the USA, constituting more than 90% of businesses (Jamali et al., 2015; Agwu & Murray, 2018). Meanwhile, in Nigeria, there are 17.4 million SMEs. 90% of these SMEs are in the manufacturing sector. SMEs in Nigeria contributed to 50% of the industry's jobs and 48% of the country's GDP over the preceding five years. (Nigeria Departments of Statistics, 2018). It is argued that higher SME performance could help sustain a country's economic output and employment. In this light, developing nations like Nigeria can benefit from the industrialised countries' success models.

From the theoretical point of view, studies on technology acceptance and use, like this present study, have used two main theories- the "Unified Theory of Acceptance and Use of Technology (UTAUT) and the Resource-Based View (RBV). Both have been commonly used to understand how different factors influence SMEs' adoption of e-commerce and how technology adoption, specifically e-commerce affects SMEs and other stakeholders' performance. Both theories are considered comprehensive theories on technology and ICT usage and how they link to firm performance. Therefore, this study suggests a detailed model for how Nigerian SMEs will implement e-commerce. The model might narrow the theoretical gap in studies examining the adoption of e-commerce and its effects on Nigerian SMEs' performance. Earlier studies have shown that SME owners have great concern over their transaction privacy via e-commerce (Shaharudin et al., 2012; Agwu & Murray, 2018; Kilay et al., 2022; Shahadat

et al., 2023). This study also sheds light on SMEs' concerns over the risks of e-commerce and their inclination to conduct business in a traditional manner. (Chivasa & Hurasha, 2016; Kilay et al., 2022; Gao et al., 2023). Shaharudin et al. (2012) recommended perceived risks and privacy as important determinants in research. This study will concentrate on how Nigerian SMEs use e-commerce to fill in the gap in previous studies and present a comprehensive research framework to determine the level of SMEs' e-commerce use and evaluate its impact on performance. Furthermore, it will try to improve the findings' generalisability and accuracy. This is to ensure that the study's input can add to the existing literature. Even though there have been numerous studies on SMEs and e-commerce, little research has designed a framework that considers perceived privacy when determining SMEs' e-commerce use. This study also considers perceived ease of use and Usefulness, both of which have been strongly associated with e-commerce adoption among SMEs. Hence, this study will examine whether SME performance can be improved by utilising resources and having high digital capabilities for e-commerce.

This paper structured as follows, the study starts with the introduction, follow by the literature review, next with the research methodology, is followed by an analysis, next with the discussions, further with the conclusion, follow with the implication, next with the limitation and recommendations, lastly with the references.

## **LITERATURE REVIEW**

### **SMEs Performance**

Studies in various fields have presented varying definitions of performance. In the context of a firm, in general, performance reflects that an organisation is doing well. In this regard, business performance is the outcome of a company's operations or financial commitments over a specific time period. Moreover, performance could be increased by taking actions to integrate skills and knowledge (Hoque & Awang, 2019; Gao et al., 2023). At the same time, performance refers to the organisational capacity to fulfil the stakeholders' demands. Performance is becoming more significant in this globalised world where business seems to be smaller, and business transactions can be done everywhere (Hoque & Awang, 2019; Shahadat et al., 2023). Thus, higher business performance could break down the barriers and allow SMEs to grow and sustain in the global market. Performance can measure an organisation's success and determine its growth, firm profitability, revenues, efficacy, development, survival, success, and competitiveness (Aremu, Shahzad & Hassan, 2019). While, Ebitu et al. (2015) argued that higher performance entails higher profitability, market share and growth. Performance could also be reflected through a firm's profitability or fulfilment of organisational goals. Studies like Ebitu (2016), Aremu et al. (2019) and Kilay et al. (2022) asserted that performance could be reflected through aspects like employment opportunities, GDP contribution, higher income and revenue, technology improvements, and poverty eradication (light, SMEs performance is reflected through the outcomes of the business or the projected output. Furthermore, in the context of an organisation, high performance entails desired outcomes, such as promotions, raises, and bonuses.

There are many factors that influence SMEs' performance. These factors include changes in the business environment, e-commerce adoption and ICT use. SMEs' usage of ICT in trade and business has been linked to exceptional improvement in performance (Garg & Choeu, 2015; Herzallah & Mukhtar, 2015). For instance, an empirical study by Aremu et al. (2019) in Nigeria reported that the growth of regional SMEs is facilitated by the adoption of the ERP (enterprise resource planning) system. Based on prior research, this study has looked into how perceived Usefulness, perceived privacy and perceived ease of use influence Nigerian SMEs' adoption of e-commerce, specifically to improve their performance.

### **Perceived Usefulness**

Perceived Usefulness depicts how a technology is perceived as beneficial in improving some aspect of the users' job/ business. Thus, high perceived Usefulness entails that users believe that the use

of technology will help to be useful to the users, which in this case refers to higher performance among SMEs (Sohn, 2017; Moridis et al., 2018; Nurchayati et al., 2023). Scholars have linked perceived Usefulness with acceptance of technology, as people will accept it when they deem it useful (Moslehpour et al., 2018; Kasinphila et al., 2023). Numerous studies have indicated that one's intention to utilise technology, particularly e-commerce, is significantly influenced by perceived Usefulness. (Mun et al., 2017; Shaw & Sergueeva, 2019). Thus, in this study's context, perceived Usefulness is users' perception of whether adopting an e-commerce system enhances business efficiency and performance. It is believed that perceived Usefulness will strongly predict e-commerce usage among SMEs to improve performance. Moslehpour et al. (2018) examined how perceived ease of use affects the e-commerce use intention among Taiwanese businesses. The study also analysed whether perceived usefulness intention mediates the relationship between these two variables. It was found that perceived Usefulness could predict customers' intention to use e-commerce. Furthermore, the study found that perceived Usefulness could significantly affect the customers' intention to adopt new technology. In this regard, perceived Usefulness reflects how much a customer believes that adopting e-commerce could be useful to them in their everyday lives. In the case of SMEs, perceived Usefulness refers to how SME operators believe that adopting e-commerce could help achieve business efficiency and effectiveness (Mun et al., 2017; Bendary & Al-Sahouly, 2018; Nurchayati et al., 2023). Based on the argument above, hypothesis 1 stipulates that

**H1.** Perceived Usefulness significantly affects e-commerce adoption to improve SMEs' performance.

### **Perceived Ease of Use**

Perceived ease of use reflects how people view technology adoption as effortless. Thus, it refers to a user's perception that adopting a technology is easy and will not burden them physically and mentally (Sohn, 2017; Moridis et al., 2018; Kasinphila et al., 2023). The positive connection between perceived ease of use and technology acceptance has been shown by different studies, including Moridis et al. (2018). Thus, perceived ease of use is a driving factor for businesses to use e-commerce sites. Another study by Sohn (2017) further explained that despite a high level of perceived Usefulness, the acceptance towards technology might be lower when the users find that it is difficult to use. As a result, perceived usability can be seen as a crucial factor in e-commerce adoption. In recent years, technical limitations have created a barrier for users to adopt e-commerce systems.

Furthermore, technical difficulties create an impression that using this platform is tedious and complex, subsequently making users feel reluctant to use e-commerce. For example, e-commerce websites that could not be viewed using a smaller screen or the difficulty of typing information by certain devices. This study will examine the link between perceived ease of use and SMEs' adoption of e-commerce to enhance their performance. However, this study did not focus on the system's complexity, as it only examined perceived ease of use (Mun et al., 2017; Moslehpour et al., 2018; Nurchayati et al., 2023). The second hypothesis was formulated as follows,

**H2.** Perceived ease of use has a positive relationship with SMEs' adoption of e-commerce to improve performance.

### **Perceived Privacy**

Perceived privacy is described as customers' confidence that the personal information they share during a transaction will be protected. In this study, it is hypothesised that perceived privacy affects how often people use online stores. The main challenge in e-commerce is customers' reluctance to provide their personal information when making an online transaction for fear of privacy breach. This has negatively influenced their willingness to purchase products online. Before making a transaction, some customers will conduct a cost-benefit evaluation on whether the benefit of sharing their information through

the website outweighs the negative impact (Shaw & Sergueeva, 2019; Kim et al., 2019; Akour et al., 2023). Such evaluation is often based on the trade-off between potential rewards and risk or one's perceived value. Higher performance is one benefit that could come from the use of e-commerce by SMEs. and business efficiency, while the possible risks include the breach of privacy, specifically the personal being shared during the transaction. Thus, in the context of e-commerce, perceived privacy is linked to information privacy, which determines how e-commerce plays could control and monitor how personal data are being communicated and shared with others, including customers and suppliers. There is a concern that users' personal information could be accessed and shared by other parties and, eventually, spread through the internet (Shaw & Sergueeva, 2019; Almtiri et al., 2023).

Perceived privacy protection is users' belief that the data they are being shared on the e-commerce site will be protected from breach or being used by others without their consent. (Shaw & Sergueeva, 2019; Yu et al., 2020). As many e-commerce websites request users to disclose personal data like credit card/banking information, browsing history, address, ID number and current location, there is a need for e-commerce providers to ensure users that their data will be protected from any breach. Perceived privacy strongly influences users' acceptance and usage of a website. At the same time, perceived privacy protection represents users' awareness of how e-commerce providers are safeguarding their data. Another related aspect is perceived transaction risk, which denotes users' perception of the losses that they could face when there is a breach of their personal information on the website. Numerous studies (Chang et al., 2018; Shaw & Sergueeva, 2019; Yu et al., 2020; Almtiri et al., 2023) reported that online users have higher perceived transaction risk due to using external networks for online business transactions. Based on the above arguments, perceived privacy represents how users believe that the provider protects their personal data (Shaw & Sergueeva, 2019; Akour et al., 2023). Consequently, it is hypothesised that,

**H3.** Perceived privacy has been positively significant with SMEs' e-commerce adoption to enhance SMEs' performance.

### Usage of E-Commerce

Many SMEs have used E-commerce as a platform to streamline business transactions, reduce costs and foster a more positive client-organisation relationship. In today's modern world, SMEs have been forced to adopt e-commerce as part of their business processes to ensure competitiveness in the global market (Agwu & Murray, 2018; Akour et al., 2023). E-commerce helps SMEs to reach more customers and, subsequently, increase their profits. As mentioned, SMEs have become the backbone of the economy. In many countries, SMEs have been attributed to the high percentage of job placements, economic growth, poverty eradication, and social development. Studies have found that SMEs accept and use e-commerce for several reasons, including to achieve higher output, better customer service, streamlined record keeping and more comprehensive work processes (Chivasa & Hurasha, 2016; Agwu & Murray, 2018; Almtiri et al., 2023). While some studies reported that e-commerce adoption and performance are positively correlated, it is vital to keep in mind that each SME may have a unique e-commerce orientation, experience, and definition of success. Therefore, the scope of e-commerce usage for SMEs could differ. For instance, one SME might use e-commerce for marketing, operations, and supply chain, but others might only adopt e-commerce for marketing. (Chivasa & Hurasha, 2016; Almtiri et al., 2023).

Another benefit of the e-commerce system is that it helps SMEs facilitate customer communication (Sullivan & Kim, 2018). According to Sullivan and Kim (2018), consumer expectations have gradually increased in the past few years. In this regard, e-commerce systems have become more complex due to higher consumer expectations. Realising the importance of customer interactions, SMEs need to redefine strategies to meet consumers' expectations and win their trust. Studies (Awa et al., 2015; Sullivan & Kim, 2018; Akour et al., 2023) found that acquiring new consumers requires more effort

and expenses rather than retaining existing customers, specifically in the e-commerce environment. Thus, businesses, including SMEs, strive to increase consumer loyalty. Empirical studies have shown how e-commerce contributes to the growth of SMEs (Awa et al., 2015; Agwu & Murray, 2018; Sullivan & Kim, 2018; Almtiri et al., 2023; Akour et al., 2023). Therefore, a more positive perception of technology usage and privacy in online business could improve SMEs' usage of e-commerce. In addition, the relationship between the aforementioned factors and SME success is moderated by the adoption of e-commerce. As a result, this study asserts that the adoption of e-commerce plays a mediating role in the relationship between perceived Usefulness, ease of use, privacy, and SME performance.

Hence, it is hypothesised that,

**H4.** There is a significant link between e-commerce usage and SMEs' performance.

**H5:** E-commerce has a mediating role in the relationship between perceived Usefulness, ease of use, privacy, and SME performance.

## THEORETICAL BACKGROUND

### Unified Theory of Acceptance and Use of Technology (UTAUT)

The “technology acceptance model (TAM) and technology acceptance model 2 (TAM 2)” are the primary models of users' acceptance of technology. Subsequently, researchers have extended these models to develop UTAUT (Moridis et al., 2018). UTAUT stands for the Unified Theory of Acceptance and Use of Technology, which stipulates that four factors determine technology acceptance. Moreover, it asserts that four more variables moderate the relationship between these factors and technology acceptance. This theory was extended from TAM. This theory highlights four variables which are extensions of variables in TAM, Performance Expectancy (an extension of Usefulness), Effort Expectancy (“extended from Ease of Use”), Social Influence and Facilitating Conditions (Bendary & Al-Sahouly, 2018). Performance expectancy measures how quickly people believe a piece of technology will help them with a certain task. The next variable is effort expectancy which represents a technology's user-friendliness. This is followed by social influence. This variable describes users' perception of whether people who matter to them believe that they should adopt a technology. The last variable is facilitating conditions or the users' perceptions towards the resources and support available that could help them to understand, accept and use technology (Moridis et al., 2018; Bendary & Al-Sahouly, 2018). In this regard, UTUAT establishes the link between the aforementioned variables with the behavioural intention to adopt a technology. Meanwhile, the relationship between these variables and technology acceptance is moderated by gender, age, Education and voluntariness to use it.

Numerous studies have also included other variables, such as perceived privacy as a key component of User acceptability (Moridis et al., 2018; Bendary & Al-Sahouly, 2018). In regard to this study, researchers investigated how SMEs used e-commerce and emphasised the variables that would enhance the performance of SMEs. The researcher explored dependent, independent, and mediating variables hypothesised in UTUAT models. The study focused on the importance of perceived ease of use, Usefulness, and privacy in determining SMEs' use of e-commerce in Nigeria.

### Resource-Based View Theory (RBV)

In today's business environment, a firm should utilise its resources to offer worthy, affordable, exceptional, inimitable, and unique products to gain a competitive advantage (Sheikh et al., 2017), which is linked to a Resource-Based View (RBV). In this regard, RBV argues that the resources available could potentially help an organisation improve its performance. This theory also stipulates that internal factors have a stronger impact on organisational performance than external factors. SMEs could use internal resources to improve their business performance. This could be done by offering

more quality and value products to gain competitive advantages. (Aremu et al., 2019). Furthermore, scholars suggested that competitive advantage and higher performance could be achieved by cultivating a more positive organisational culture, providing stronger management support, facilitating better technology infrastructures and. (Kellermanns et al., 2016; Aremu et al., 2019). Thus, RBV theory is used in this study to determine SMEs' performance based on e-commerce usage in business industries.

## METHODOLOGY

### Theoretical Framework

UTAUT and RBV theories serve as the foundation for the suggested conceptual framework. This study considered perceived ease of use, Usefulness and privacy as the main factors influencing e-commerce adoption and examined how these variables influence SMEs' adoption of e-commerce to enhance their performance (figure 1).

### Data Collection

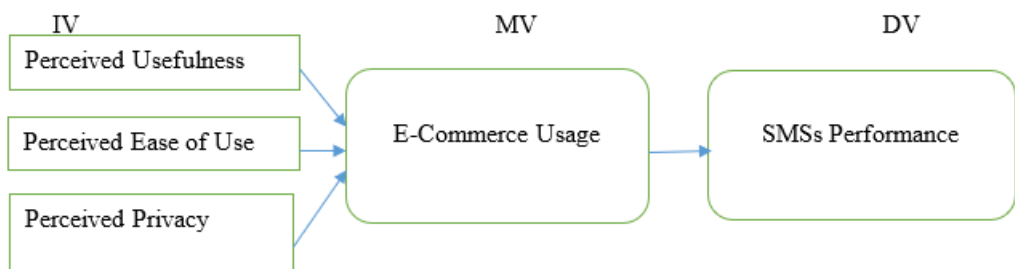
The population size of SMEs in Oyo state was determined based on data derived from the "National Bureau of Statistics (NBS) and the Small and Medium Development Agency of Nigeria (SMEDAN) 2017. The study found that there are 6,131 registered SMEs in Oyo State. The sample size was determined based on Krijcie and Morgan (1970). Based on the determination table, 361 was set as the most accurate sample size. The study's participants were chosen based on systematic random sampling. Subsequently, the researcher distributed 375 questionnaires to owners and managers of SMEs in Oyo State. A slightly higher number of questionnaires were distributed, as Aremu et al. (2019) mentioned. The higher sample size could lead to a more accurate result and less tendency for error. However, 209 were returned, and only 205 were retained for analysis. Therefore, the study used a 1 – 5 scale measurement to capture the response rates.

The Cronbach Alpha for the items in each variable is listed in Tables 1-5. The "Cronbach alpha" value was used to determine each item's fitness.

## ANALYSIS AND DISCUSSIONS

This study's data and hypotheses were analysed through PLS version 3.2.8. Figure 2 illustrates that the outer model or measurement model was evaluated first. According to Hair *et al.* (2016), the other model comprises reliability measures (internal consistency and item reliability) and validity measures (convergent validity, content validity and discriminant validity).

Figure 1. Framework for research





**Table 1. SMEs performance**

N0	Items	C/Alpha
1	The usage of E-Commerce has improved our profitability in the long run.	0.83
2	The usage of E-Commerce has increased sales and revenues.	
3	The usage of E-Commerce has improved work efficacy.	
4	The usage of E-Commerce has improved decision-making.	
5	The usage of E-Commerce has reduced operational costs.	
	Aremu, Shahzad & Hassan (2019)	

**Table 2. The usage of e-commerce**

N0	Items	C/Alpha
1	E-commerce should help improve customer services to create product value	0.89
2	E-commerce should help improve distribution channels to create product value.	
3	E-commerce should help reap operational benefits to create product value	
4	E-commerce should help provide an effective support role to operations to create product value.	
5	E-commerce should help support links with suppliers to create product value.	
6	E-commerce should help reduce the costs of business operations to create product value.	
	Grandon & Pearson (2004)	

**Table 3. Perceived usefulness of e-commerce**

N0	Items	C/Alpha
1	The usage of e-commerce could help my organisation to fulfil specific tasks faster.	0.95
2	The usage of e-commerce could lead to improved job performance.	
3	The usage of e-commerce could increase productivity.	
4	The usage of e-commerce could improve job effectiveness.	
5	The usage of e-commerce could make my job easier.	
	Grandon & Pearson (2004).	

**Table 4. Perceived ease of use**

N0	Items	C/Alpha
1	It will be flexible to interact with e-commerce.	0.95
2	I will interact clearly and understandably with e-commerce	
3	Being skilled in e-commerce will be easy for me.	
4	It will be easy to use e-commerce.	
5	It will be easy to use the website	
	Grandon & Pearson (2004) and Eid (2011).	

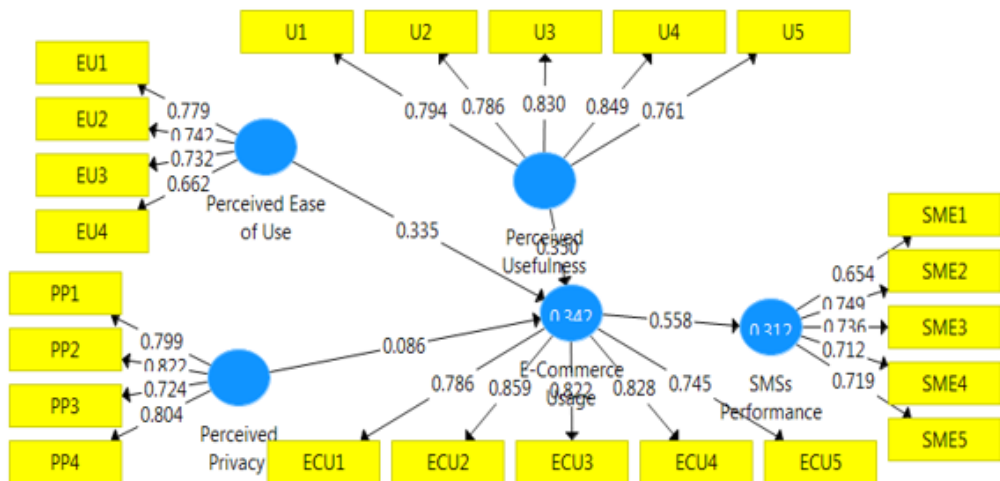
**Table 5. Perceived privacy**

N0	Items	C/Alpha
1	The website adheres to laws and regulations pertaining to personal data	0.93
2	Only personal data necessary for the transaction will be collected by the website.	
3	My personal information will not be shared with others by the website without my consent.	
4	I feel safe when sharing my personal information with the website.	
5	The website seems to protect its users' privacy.	
	Eid (2011)."	

## Measurement Model

**Figure 2. Measurement model of the PLS algorithm**

*Source: Author's own findings*



## Internal Consistency Reliability

Hair et al. (2016) described that internal consistency reliability shows the extent to which different scale indicators evaluate a similar idea. An item must have an AVI score of 0.50 or higher and a composite reliability score of 0.70 or higher to be considered reliable and has internal consistency. Cronbach's Alpha, a measure of internal consistency, ranges from excellent (>0.9) to good (>0.8) to acceptable (>0.7-). The (AVE), Cronbach Alpha, and composite reliability scores for each variable are shown in Table 6. All variables have AVE and composite reliability over 0.50, greater than 0.7. According to the findings, the measurement is both highly reliable and acceptable.

As shown, each variable's Cronbach Alpha exceeds 0.70. This shows that all variables have high consistency. Furthermore, as AVEs for the variable have hit the threshold, it hence, the measurement model is reliable.

**Table 6. Indicator loadings, internal consistency reliability, and convergent validity**

CONSTRUCT	“Items”	“Loading”	“Cronbach’s Alpha”	“Composite Reliability”	“AVE”
E-Commerce Usage	ECU1	<b>0.786</b>	0.867	0.904	0.654
	ECU2	<b>0.859</b>			
	ECU3	<b>0.822</b>			
	ECU4	<b>0.828</b>			
	ECU5	<b>0.745</b>			
Perceived Ease of Use	EU1	<b>0.779</b>	0.706	0.824	0.533
	EU2	<b>0.742</b>			
	EU3	<b>0.732</b>			
	EU4	<b>0.662</b>			
	EU5	<b>0.745</b>			
Perceived Privacy	PP1	<b>0.799</b>	0.798	0.867	0.621
	PP2	<b>0.822</b>			
	PP3	<b>0.724</b>			
	PP4	<b>0.804</b>			
	PP5	<b>0.745</b>			
Perceived Usefulness	U1	<b>0.794</b>	0.863	0.902	0.647
	U2	<b>0.786</b>			
	U3	<b>0.83</b>			
	U4	<b>0.849</b>			
	U5	<b>0.761</b>			
SMEs Performance	SME1	<b>0.654</b>	0.767	0.839	0.511
	SME2	<b>0.749</b>			
	SME3	<b>0.736</b>			
	SME4	<b>0.712</b>			
	SME5	<b>0.719</b>			

## Discriminant Validity

Hair et al. (2016) described that discriminant validity indicates how much a variable is distinct from others. Moreover, as mentioned in Duarte & Raposo (2010), higher discriminant validity indicates that the variable differs from others and that a distinct variable can measure a phenomenon that other variables could not measure. As a result, the model’s external consistency was examined in relation to its discriminant validity. In this regard, the square root of AVE was used to calculate the discriminant validity for this investigation. As Aremu et al. (2019) argued, a variable’s square root of AVE should be higher than the correlations between the latent variables for an accepted discriminant validity. Table 7 shows the square root of AVE for each variable and illustrates a comparison between the correlation between the latent variables, E-Commerce Usage (ECU) = 0.80; Perceived Ease of Use (PEU) = 0.73; Perceived Privacy (PP) = 0.78; Perceived Usefulness (PU) = 0.80 and SMEs Performance (SMEP) = 0.71.

Table 7 demonstrates that the AVE square roots are higher for all variables compared to the correlation between the latent variables. Hence, the model’s discriminant validity is at an acceptable level. (Aremu et al., 2018). Initially, the hypothesised relationships between variables in the framework were projected based on past studies as recommended by Hair et al. (2016), variables containing at least two items should be retained; hence The CFA result led to the retention of all variables because they all have at least two items (figure 3).

Table 7. Discriminant validity matrix

	E-Commerce Usage	Perceived Ease of Use	Perceived Privacy	Perceived Usefulness	SMEs Performance
E-Commerce Usage	<b>0.809</b>				
Perceived Ease of Use	0.469	<b>0.739</b>			
Perceived Privacy	0.215	0.203	<b>0.788</b>		
Perceived Usefulness	0.476	0.333	0.174	<b>0.805</b>	
SMEs Performance	0.558	0.418	0.256	0.363	<b>0.715</b>

(Source: Author's own findings)

Note: "The bolded numbers shown in Table 7 represent the square route of average while others represent latent variable correlations."

Figure 3. Structural model direct relationships

Source: Author's own findings

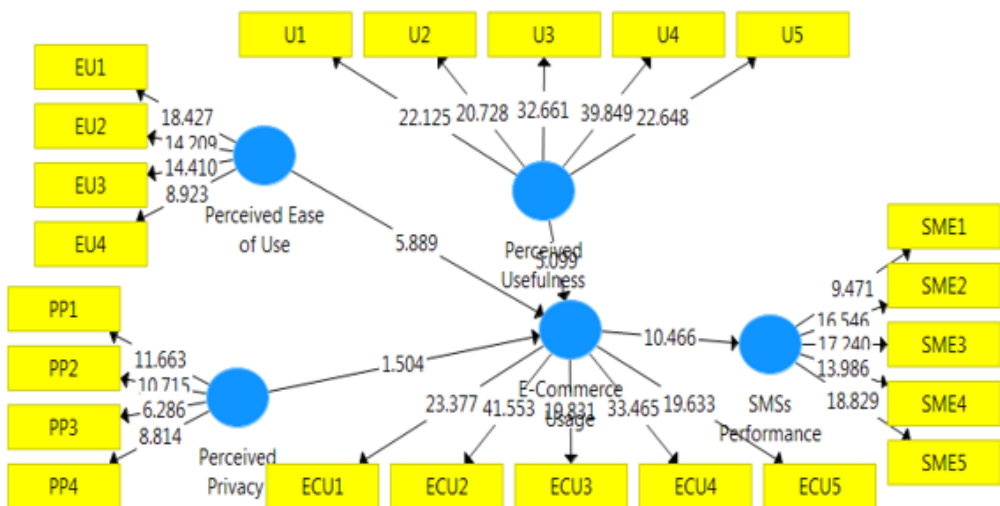


Table 8 shows that 3 out of 4 hypotheses (H1, H2, and H4) were supported with a p-value less than 0.05. As stipulated in H1, Perceived Usefulness has a direct and indirect positive impact on SMEs' Performance ( $\beta = 0.354$ ;  $T = 5.099$ ;  $p < 0.000$ ). Similarly, H2 was also supported, indicating that perceived Ease of Use positively impacts e-commerce adoption directly and indirectly, which in turn, affects SMEs' Performance ( $\beta = 0.335$ ;  $T = 5.889$ ;  $p < 0.000$ ). Lastly, H4 was accepted with ( $\beta =$

Table 8. Results of hypothesis testing

VARIABLES	Beta	T - Values	P - Values	Decision
E-Commerce Usage -> SMEs Performance	0.558	10.466	0.000	Supported
Perceived Ease of Use -> E-Commerce Usage -> SMEs Performance	0.335	5.889	0.000	Supported
Perceived Privacy -> E-Commerce adoption -> SMEs Performance	0.086	1.504	0.133	Not-Supported
Perceived Usefulness -> E-Commerce adoption -> SMEs Performance"	0.354	5.099	0.000	Supported

0.558;  $T=10.466$ ;  $p < 0.000$ ), reflecting that perceived usefulness has a direct and indirect positive impact on SMEs' Performance. On the contrary, hypothesis (H3) was not supported with ( $\beta= 0.086$ ;  $T= 1.504$ ;  $p > 0.133$ ), which reflects that perceived privacy does not, directly and indirectly, affect SMEs' Performance. Therefore, a low level of perceived privacy will have a negative impact on e-commerce usage and performance. Meanwhile, rejection of this element can be due to the field, scope or methodology of the study. Several studies have highlighted the importance of privacy concerns and their impact on consumer behavior and trust in online transactions. Privacy concerns can influence consumers' willingness to disclose personal information during online transactions. If consumers feel that their privacy may be compromised, they may be reluctant to share sensitive data, such as payment details or contact information, which can hinder the growth of e-commerce.

## **DISCUSSION**

This paper seeks to determine how different factors influence SMWs' use of e-commerce for improved performance. It also presents a theoretical framework for factors influencing SMEs' use of e-commerce to improve performance. The adoption of e-commerce is seen to be related to the perceived ease of use, perceived privacy, and perceived Usefulness in increasing SMEs' performance. The theoretical framework was developed using data from a questionnaire created especially for this study. The adoption of e-commerce by SMEs was found to have a direct, positive link with perceived ease of use and perceived Usefulness, and this relationship could potentially improve the performance of SMEs.

According to the findings, perceived Usefulness and perceived usability positively correlate with SME e-commerce usage, as presented in Bendary and Al-Sahouly (2018). According to the finding, SMEs' use of e-commerce is significantly impacted by perceived ease of use and Usefulness. Several studies have highlighted the importance of privacy concerns and their impact on consumer behavior and trust in online transactions.

## **CONCLUSION**

This conclusion suggests that there is a widespread conviction that e-commerce benefits SMEs since it links and streamlines business operations to enhance organisational performance. Thus, perceived ease of use and Usefulness may encourage SMEs to use e-commerce as a means to enhance their performance. This study's results indicate that e-commerce will expand as SME operators become more aware of e-commerce value and utility for boosting their business performance. E-commerce has long been known to connect business activities online, promote products, reduce operational expenses, and improve service quality. This implies that e-commerce usage could help SMEs to sustain or guarantee their performance and competitiveness. It also reflects the importance of good SME website design. It can be implied that the result of this study aligns with the findings of earlier studies (Awa et al., 2015; Chivasa & Hurasha, 2016; Agwu & Murray, 2018) and that the framework is consistent with the RBV and UTAUT theories. As a result, it suggests that perceived Usefulness and ease of use are factors influencing e-commerce use. Furthermore, it was discovered that perceived privacy is unrelated to business success and has little bearing on SMEs' performance. Hence has no significant impact on SMEs' performance. In this regard, the variable is not supported due to inconsistencies in perceived privacy and the lack of privacy in technology usage.

Therefore, SMEs should continue to select the most appropriate e-commerce portal/site or system. It is also deduced that the e-commerce usage and implementation, influences SMEs and entire business industry quality performance, in line with the findings of other studies (e.g. Awa et al., 2015; Chivasa & Hurasha, 2016; Agwu & Murray, 2018).

This study has used UTAUT model and RBV theory to empirically establish that The adoption of e-commerce by SMEs was found to have a direct, positive link with perceived ease of use and perceived usefulness factors generally contribute to technology adoption in the case of e-commerce

system usage among SMEs. This implies that the e-commerce system could help support businesses during the covid-19 outbreak and post-Covid-19 pandemic.

## Implications

This study presents several implications for how SMEs in developing nations like Nigeria can utilise e-commerce. The inputs can serve as a guideline for government and non-government agencies SMEs dealing with SMEs like “SMEDAN and Nigerian Central Bank” to design programmes and set policies related to SME development. Regarding its theoretical implication, this study used the e-commerce usage predictor model to conceptualise of use of e-commerce to improve SMEs’ performance and the use of e-commerce with the online operation. The UTAUT and RBV theories, which have made use of variables including perceived usability, perceived privacy, and perceived utility to explain the motivation towards using technology, are supported by this finding. These theories also explain how these perceptions could influence online business services, subjective norms, and perceived usable control. Moreover, the study revealed how the use of e-commerce could be an instrument to increase SMEs’ performance. Regarding its methodological contribution, this study used the PLS-SEM method, and it could provide better insight for the sellers and buyers as well as the business industry to change people’s mindset over online transactions. The business sector should encourage the use of e-commerce to market their products as it provides a convenient platform for customers to buy the products they want. Finally, the mediation effect of e-commerce usage in this study has important theoretical implications in terms of providing much sought-after theoretical explanation of the underlying process that accounts for the relationship between the IVs factors and the mediation effect of e-commerce usage to enhancing SMEs performance. This implies that life e-commerce innovation research is an enabler that should be given more attention in explanation amongst SMEs studies.

## Limitations and Recommendations

This study focuses on how SMEs in Nigeria use e-commerce; hence, this study’s approach is limited to a small sample. This has made it challenging to extrapolate the results to other populations accurately. However, this study offers several recommendations for additional research. First, studies should cover a larger population or a country to generalise the results to the entire population. Second, future studies should include all online sellers and buyers to see their level of inclination towards online buying and selling through e-commerce and how it affects organisational performance. This study also provides several recommendations for the business industry. First, e-commerce has a high potential to grow, and there are many applications have been created to promote and facilitate e-commerce social website applications for ads only. Second, SMEs could use this medium to reach out to their target customer, especially in promoting their product. This is because e-commerce brings in higher income than traditional retail as it provides the technology that allows business transactions to occur regardless of time and place. Finally, the usage of e-commerce among firms to expand business could, subsequently, enhance their performance.

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