

PERCEIVED USEFULNESS AND PERCEIVED EASE OF USE OF TECHNOLOGY ADOPTION ON SMEs PERFORMANCE IN SELECTED LOCAL GOVERNMENT AREAS OF PLATEAU STATE

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Abstract

This study examined the effects of perceived usefulness and perceived ease of use of technology adoption on the performance of Small and Medium-sized Enterprises (SMEs) in selected Local Government Areas, of Plateau State. 448 registered small and medium enterprises situated in Jos South and Pankshin Local Government Areas were used in this study. Multiple Linear Regression approach was used to determine the effect of perceived usefulness and perceived ease of use of technology adoption on SMEs performance in the selected local government areas. The result revealed that perceived usefulness do not significantly affect the performance of SMEs in Jos South/Pankshin

Local Government Areas. Also, perceived ease of use of technology adoption does not significantly impact on the performance of SMEs in Jos South/Pankshin Local Government Areas. The study concluded that some of the SMEs have not fully embraced technology in terms of perceived usefulness and perceived ease of use. This study recommends among other things that all SMEs need to understand the value of implementing technology as well as its advantages.

Keywords: Perceived Usefulness, Perceived Ease of Use, Technology Adoption, SMEs Performance

Introduction

In the context of Plateau State, Small and Medium-sized Enterprises (SMEs) play a vital role in the state's economy, thereby contributing to the growth of key sectors such as manufacturing, servicing, among others. However, SMEs in Plateau State may be faced with unique challenges including lack of skilled labour and inadequate infrastructure. Many factors may be responsible for hindering the performance and ability of SMEs to compete favourably. Some critical factors that can significantly influence SME performance are perceived usefulness and perceived ease of use amongst many others.

The ability of Small and Medium-sized Enterprises (SMEs) in driving economic growth, innovation, and employment cannot be overstated. SMEs are widely recognised as one of the backbones of any economies, particularly in developing countries. Elegunde et al (2023) state that Small and Medium-sized Enterprises contribute to economies worldwide and this necessitates the need for SMEs to receive more attention on a global scale. He further states that SMEs accounts for over 90% of businesses, contributing significantly to the country's GDP and providing livelihoods for millions of people. The World Trade Organisation (WTO, 2016), also state that SMEs represents over 90% of the business population, 60 – 70% of employment and 55% of GDP in

developed economies. Despite the numerous importance of SMEs, worldwide and especially in Nigeria, SMEs face many difficulties, including finance issues, intense competition and inadequate infrastructure. To remain sustainable and vibrant in the market, SMEs must adopt and leverage technology and other avenues to improve their operations in order to enhance efficiency.

The utilisation of technology by SMEs may likely have a transformative impact on their performance, enabling them to streamline processes, reduce costs, and improve customer satisfaction by abandoning traditional methods. Technology can also facilitate SMEs' access to new markets, suppliers, and partners, thereby enhancing their competitiveness and growth prospects. However, the use of technology by SMEs is often influenced by various factors, including perceived usefulness and perceived ease of use of the technology (Davis, 1989).

Technology adoption according to Zawawi et al. (2016) is the utilization of a new technology within an organisation. Technology adoption is more than just using technology; it is about integrating new technology successfully into a business. However, there are a number of aspects of technology adoption that any organisation may have to deal with, such as perceived usefulness, perceived ease of use, etc., (Davis 1989).

Perceived usefulness refers to an individual's subjective assessment of how adopting and using a particular technology will enhance their job performance or facilitate achieving specific goals. (Davis, 1989). Furthermore, perceived usefulness has been found to be a robust predictor of actual technology usage across various contexts and technologies. Perceived usefulness is central to understanding individuals' acceptance and adoption of technology.

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Perceived ease of use involves evaluating the anticipated benefits relative to the effort, cost or risks associated with using or adopting a technology. Understanding the perceived ease of use, significantly influences people's behaviour and decision-making processes (Davis & Bagozzi, 1989).

The local government areas (LGAs) in Nigeria and especially in Plateau State provide a unique context for examining the effect of perceived usefulness and perceived ease of use of technology adoption on SME performance. The local government areas are crucial focal points for SME activity, with many business owners transacting within this area. However, SMEs in local government areas often face significant challenges. The challenges may stem from lack of awareness of the benefits thereof, limited understanding on how technology can improve their operations, industry specific challenges, technical complexity, poor user experience, etc. It is against this backdrop, that this study aims to investigate the effect of perceived usefulness and perceived ease of use on the performance of SME in selected local government areas of Plateau State.

Literature Review

Conceptual Clarification Performance Of Small And Medium Enterprises (SMES)

The term performance is often used to evaluate the work finished by an enterprise and to measure competitiveness. The performance of SMEs is defined as the extent to which the target task of the enterprise was accomplished in comparison to the final output at the end of a business year (Yildiz et al., 2016). Ibrahim et al (2015) states that SMEs performance can be seen as how firms provide value to its stakeholders such as owners, customers, society and even government. In addition, SMEs performance can also be seen as the procedures of quantifying business firm actions in terms of accomplishing its objectives. SMEs performance can be measured quantitatively or qualitatively. Augustine et al (2012) studied forecasting, planning, controlling, learning, training, IT usage, age, experience and education as factors influencing firm performance. The performance of SMEs also refers to the extent to which an SME achieve its goals and objectives. It encompasses a range of outcomes, including financial results, market share, customer satisfaction, and growth. It is about how well an SME is operating and meeting its targets.

Technology Adoption

Rogers (2003) defines technology as “a design for instrumental action that reduces the uncertainty in the cause-effect relationships involved in achieving a desired

outcome.” Tornatzky & Fleischer (1990), define technology adoption as “the situationally new developments and introduction of knowledge derived tools, artefacts, devices by which people extend and interact with their environment.” Technology adoption is the process by which people and organisations accept and use new technologies. It involves learning and adapting to new technologies.

Technology adoption refers to the process by which individuals, organisations, or societies accept and integrate new technologies into their daily lives, workflows, or operations. It involves learning and adapting to new technologies. Carr (1999) defines technology adoption as the process of choosing a technology for a person or an organisation to use. Thong and Yap (1995) describe technology adoption in small and medium-sized enterprises (SMEs) as the use of computer hardware and software solutions to support organisational administration, operation, and decision-making.

Technology adoption, according to Park (2017), is a type of innovation in which a company integrates a novel technology into its daily operations. According to Ionescu & Dumitru (2015), a few of the numerous advantages that may arise from this are a rise in market share, an improvement in quality, and a wider selection of products. SME adoption of appropriate internet technology is also motivated by the need to enhance internal operations, improve product quality through faster customer and product communication, and improve product and service distribution and promotion. Its success stems from the fact that technology is now the driving force behind economic expansion. Technology adoption refers to the process of accepting and integrating new technologies into an organisation, individual or society. It involves awareness, interest, evaluation, trial and adoption. The factors that influence technology adoption amongst others are perceived usefulness, perceived ease of use, etc.

Perceived Usefulness

Technology adoption and perceived usefulness are closely linked. Highlighting the usefulness of a technology and addressing user concerns, organisations can increase the likelihood of successful technology adoption. Perceived usefulness of adoption of technology refers to an individual's or SME's perception of the usefulness of a technology. It is about how much someone feels that a system is beneficial, easy to use, and enjoyable to use. Davis (1989) defines perceived usefulness as the extent to which an individual feels that utilising a specific technology will improve their ability to

accomplish their work. Similarly, Venkatesh and Davis (2000) define perceived usefulness as the “degree to which a person believes that using a particular system will help them attain gains in their job performance.” Davis (1989), states that when individuals perceive a technology as useful, they are more likely to adopt it and integrate it into their work or daily lives. Furthermore, studies have demonstrated that subjective norms, compatibility with current systems or practices, and simplicity of use are some of the aspects that affect how beneficial something is considered.

Small and medium-sized firms are more likely to plan to use it if they believe it to be valuable. According to studies on technology adoption, people are hesitant to accept technology that makes it difficult for them to execute their tasks (Fang et al., 2005). Since it has been shown to have a significant direct impact on users' intentions to utilise the technology, perceived usefulness is significant (Dwivedi et al 2009).

According to Jones and Kauppi (2018), the system's perceived usefulness is correlated with its overall benefits of enhancing user performance as well as its productivity and effectiveness. It is the degree, to which an individual think, that utilising technology would enhance the quality of their work. Users are more inclined to use technology when it is more useful.

Perceived Ease Of Use

Technology adoption and perceived ease of use are closely connected also. Perceived ease of use is a crucial factor that influences an individual's or organisation's decision to adopt a new technology. The degree to which a user perceives a system to be free of effort is known as perceived ease of use (David, 1989). According to Venkatesh and Davis (2000), perceived ease of use can influence performance, but a lack of it can lead to annoyance and hinder the adoption of new technologies. Perceived simplicity of use can have an impact on a technology's impact on users' intention to embrace it. It is actually possible to explain perceived ease of use by usability features.

The main indicator of technology adoption is the use of the technology by SMEs, who will also determine the technology's readiness. The degree to which a company is able to use new technologies without hesitation is known as its readiness (Desmayanti, 2012). It makes sense to place a lot of emphasis on utilisation, as it is a crucial factor in determining how well an invention is implemented (Koong et al., 2019). The user's mindset may change depending on how ready they are to absorb new technology. Users' perceptions of technology are positively impacted and they utilize it more intensely

when they can readily acquire and adapt to it.

Theoretical Review

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) was proposed in 1989 by Fred Davis as a way to predict how likely people are to adopt new technologies. TAM is a theoretical model that explains how individual accept and use information systems. TAM is based on the Theory of Reasoned Action (TRA) and aims to predict user behavior towards technology. TAM provides valuable insights into the factors that influence technology acceptance, allowing developers and managers to design and implement systems that are more effective. The model suggests that people's intentions to use new technology are influenced by their perceptions of how easy it is to use a technology and how useful a technology is. The model implies that if an application is expected to be easy to use, the more likely it is that it will be considered useful for the user and the more likely that this will stimulate the acceptance of the technology (Davis, 1989; Davis, 1993)

The Technology Acceptance Model (TAM) is highly relevant to this research study because it helps explain how SMEs form attitudes and intentions towards adopting new technologies, which is crucial for understanding the impact of perceived usefulness and perceived ease of use on technology adoption.

Empirical Review

Chatterjee and Kar (2020) investigated the effect of perceived usefulness on small and medium-sized businesses (SMEs) in India. A survey of 310 organisations was used to empirically validate the theoretical model, and structural equation modeling was then used for further study. The findings showed that SMEs is positively impacted by perceived usefulness. The outcome is positive and meaningful.

Perwitasari (2022) investigated on the effect of Perceived usefulness on Micro, Small and Medium Enterprises (MSMEs). Multiple linear regression tests were used in the research, using 60 respondents. Managers of MSMEs who use financial technology services in any capacity for their business operations made up the respondents. In order to comply with multiple linear regression analysis criteria, classical assumption testing was conducted. The results reveal that perceived usefulness simultaneously affect the behavioural intention on SMEs performance. The result was positive and significant.

Niyongere and Osunsan (2022) investigated perceived usefulness on SMEs' performance in Buloba,

Uganda. 79 SMEs was used for the study. The study's analysis was done using regression analysis. The investigation's findings indicated a statistically insignificant but moderate to moderately beneficial association between the performances of SMEs and their assessment of the usefulness of technology. The statistical significance, though, was not determined. The conclusion was negative and insignificant.

Muslichah, Wiyarni and Nursasi (2019) investigated the influence of perceived usefulness on SMEs performance in Indonesian city. A sample of thirty SME owners was selected as respondents from each of these cities. One hundred and twenty (120) SME owners in total were used in this study. The findings showed that the intention to improve SME performance is highly influenced by perceived usefulness. The result is positive and significant.

Bolodeoku, Iginoba, Salau, Chukwudi, & Idia (2022) investigated the effect of perceived usefulness of technology on SME's performance. The study's target sample consisted of 495 Nigerian employees who had been identified as having implemented tactics to convey the value of the technology they had employed for their business operations. Structural equation modeling was used to analyse the data. The results showed that SMEs' perceptions of the value of technology have a major impact on their performance. The outcome demonstrates that the perceived usefulness of technology is positive and substantial.

Herzallah and Mukhar (2016) investigated the effect of perceived usefulness on SMEs performance. A survey consisting of 250 managers of SMEs in Palestine was employed in the study. Partial least square (PLS) software was utilised to conduct a structural equation modeling (SEM) analysis on the data. The findings showed that the managers' performance in SMEs was positively impacted by perceived usefulness. The perceived usefulness of technology is positive and substantial.

Alraja, Khan, Khashab and Aldaas (2020) investigated the perceived ease of use on the performance of small and medium enterprises (SMEs). Data were gathered from various 342 SMEs in Dhofar and Muscat, Oman. This study used a variety of statistical techniques, such as confirmatory, exploratory, and structural equation modeling. SPSS 25 and AMOS software were used to examine the quantitative data. The findings of this study revealed that facebook advertisements were found to have a statistically significant effect on the SMEs' performance dimensions.

Karahanna and Straub (1998) investigated perceived ease of use and SMEs performance. Technology

Acceptance Model (Tam) was employed in the study. 250 managers of SMEs in Palestine were given a survey to complete for the study. Partial least square (PLS) software was used to evaluate the data using a structural equation modeling (SEM) method. The findings revealed the significance of perceived ease of use in information system adoption on SMEs. The outcome was favorable and significant.

Idris (2022) investigated on the relationship between perceived ease of use among SMEs in Selangor. 310 SMEs made up the study population. Descriptive and inferential statistics were employed. The relationship between the elements was determined using Pearson correlation on coefficient for inference statistics. The result of the finding showed that adoption intention was influenced by perceived simplicity of use. Result is significant and favourable.

Chille, Shayo and Kara (2021) investigated the effect of perceived ease of use on SMEs in Tanzania guided by the Technology Acceptance Model (TAM). Survey strategy was employed in data collection, using structured questionnaires and collected data from 5 municipalities, 73 wards and 6 hamlets, by using multi stage sampling of 406 respondents in Dares Salaam. Quantitative data were analysed using multiple linear regression. Findings indicated that perceived ease of use had positive and significant influence. The result was positive and significant.

Research Gaps

Given the reviewed empirical literature, there are few or no studies that have examined effect of perceive usefulness and perceive ease of use of adoption of technology on SMEs performance in Jos South and Pankshin LGAs of Plateau State. Thus, this study fills the gap by empirically examining how perceive usefulness and perceive ease of use affect performance of SMEs.

Methodology

In this study, a quantitative research design was adopted because it is suitable for survey studies. The population of this study was estimated at 448 (PLASMEDA, 2021). It is largely made up of registered small and medium enterprises basically the service sector in Jos South and Pankshin Local Government Areas of Plateau State.

The data sources are basically primary and secondary. The primary source relied on questionnaires; a five-point Likert scale, from 1 (strongly disagree) to 5 (strongly agree) which measured the variables of interest, perceived usefulness, perceived ease of use of technology adoption and performance of SMEs in Jos South and Pankshin LGAs of Plateau State was used. This study

adapted perceived usefulness and perceived ease of use from Venatesh and Davis (2000). The secondary source of data in this study is literature based from previous studies.

In this study, a Multiple Linear Regression method was applied to examine the effect of perceived usefulness and perceived ease of use of technology adoption on performance of SMEs in Jos South and Pankshin Local Government Areas of Plateau State.

Model Specification

The multiple regression equation is stated thus:

$$SP_i = \beta_0 + \beta_1 PrU_i + \beta_2 PuE_i + \varepsilon_i$$

Where; SP = the dependent variable (SMEs Performance), B_0 = Constant or intercept, β_{1i} , and β_{2i} = Coefficients of the independent variables, PrU_i = the independent variable (Perceived Usefulness (PrU), and PuE_i = the independent variable (Perceived use of Ease), ε_i = Error term

Results and Discussion of Findings

A total of three hundred and fifty-nine (359) copies of questionnaires were distributed and only Two hundred and Twenty-One (221) copies of the questionnaire were returned and used for the analysis. The Cronbach Alpha values for each construct were 0.930, 0.947, and 0.948. The Cronbach Alpha values for the three variables are all greater than 0.70, indicating a strong reliable of the instrument. The correlation matrix in Table 1 shows that there are no variables that have excessive correlations between them.

Table 1: Correlation Matrix

	SMEsP	PrU	PuE
SMEsP	1		
PrU	.654**	1	
PuE	.625**	.767**	1

Source: SPSS 26.0

The relationship between perceived usefulness and perceived ease of use of technology adoption on performance of SMEs were found to be 65.4% and 62.5% respectively. The correlation results signify a positive and significant relationship with SMEs performance (SMEs).

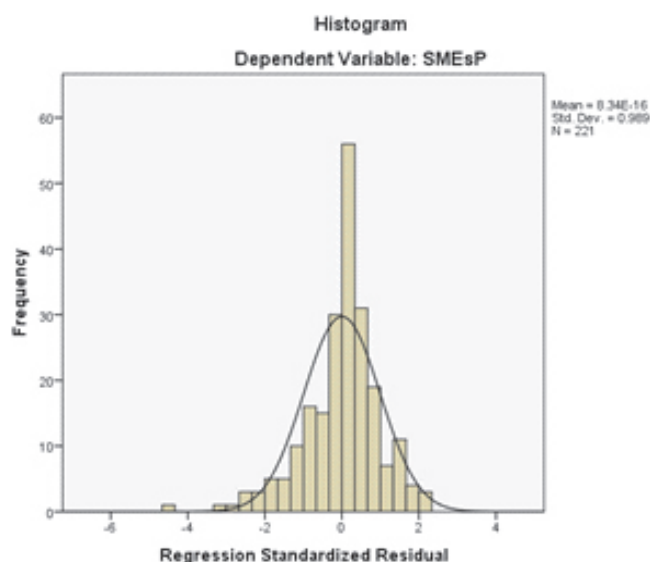


Figure 1: Normality Test

Table 2: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
SMEsP	221	1.00	5.00	4.0103	.74161
PrU	221	1.00	5.00	4.3725	.63800
PuE	221	1.33	5.00	4.2059	.70780

Source: SPSS 26.0

The normality test from figure 1 showed that the dependent variable SMEsP is normally distributed since the bell-shaped figure is equally skewed to the left and to the right.

Table 2 displays the descriptive statistics for the variables used in this study. The variables are classified as

dependent and independent variable; SMEsP, PrU, and PuE. The mean values for SMEsP, PrU, and PuE, are 4.0103, 4.3725, and 4.2059.

Table 3: Regression Result

Variable	Coefficient	Standard Devia	T-test	P-value
Constant	0.163	0.207	0.786	0.432
Perceived Usefulness (PrU)	0.054	0.084	0.647	0.519
Perceived use of Ease (PuE)	-0.034	0.073	-0.473	0.637
R ²	0.673			
F-Test	88.376			0.000**
VIF	3.436	3.182		
Tolerance Value	.291	.314		

Dependent variable: SMEs Performance (PER) * ** *** 1%, 5% and 10%

Source: SPSS version 26.0

The coefficient of determination, $R^2 = 0.673$, indicates that 67.3% of the variation in SMEs performance (PER) can be attributed to changes in Perceived Usefulness (PrU), and Perceived use of Ease (PuE). The regression model was found to be of good-fit, given that the F-statistic's p-value of 0.000.

According to Table 3, the standardised regression result for the impact of perceived usefulness (PrU) on the performance of small and medium-sized enterprises (SMEs) is 0.054 with a p-value of 0.519. This contradicts the findings of Perwitasari's (2022) study, which examined the impact of perceived usefulness on micro, small, and medium-sized enterprises (MSMEs). The findings show that behavioural intention and perceived usefulness variables have a simultaneous impact on SMEs' performance.

Nonetheless, the outcome corroborated the research done in Buloba, Uganda, by Niyongere and Osunsan (2022) on the perceived value of technology. The results of the investigation showed a modest to marginally favourable, but statistically insignificant, correlation between the performance of SMEs in Buloba and their perception of the utility of technology.

Once more, the study's findings contradict the Technology Acceptance Model (TAM). TAM explains how users form attitudes and intentions towards using a new technology. It suggests that people's intentions to use new technology are influenced by their perceptions of how easy it is to use a technology and how useful a technology is.

Furthermore, the standardised regression result for the influence of perceived ease of use (PuE) on performance of small and medium-sized enterprises (SMEs) is -0.034, with a p-value of 0.637. This indicates that the influence of perceived ease of use (PuE) on SMEs performance (PER) is negative and not statistically significant. The implication is that most SMEs in the Jos

South and Pankshin areas have found perceived use of ease of technology uneventful, which fails to contribute to the performance of SMEs. The performance decreased by 3.4% as perceived use of ease increase by 1%.

The outcome does not support the findings of Chatterjee and Kar (2020), who looked into perceived ease of use as a means of improving the performance of small and medium-sized businesses (SMEs) in India. The findings demonstrate that SMEs' perceived ease of use has a beneficial influence.

Moreover, the outcome differs with the research conducted by Idris (2022) regarding the correlation between perceived ease of use and small and medium-sized businesses in Selangor. The TAM theory that was used in this investigation is not supported by the findings. TAM explains how users form attitudes and intentions towards using a new technology. It suggests that people's intentions to use new technology are influenced by their perceptions of how easy it is to use a technology and how useful a technology is.

Conclusion and Recommendations

Having examined the effect of perceived usefulness and perceived ease of use on the performance of small and medium-sized businesses in the Plateau State LGAs it is established that perceived usefulness has no significant effect on SMEs performance in Jos South/Pankshin Local Government Areas and the performance of SMEs in Jos South/Pankshin Local Government Areas is not significantly impacted by perceived ease of use. The findings indicate that perceived usefulness, and perceived ease of use components of technology adoption have no significant effects on the performance of small and medium-sized businesses in the Plateau State's Jos South and Pankshin LGAs. The implication is that some of the SMEs have not fully embraced technology in terms of Perceived Usefulness and Perceived use of Ease.

It is therefore, recommended that all SMEs need to understand the value of implementing technology as well as its advantages. When SMEs recognise the apparent value of adopting technology, they also recognise the value of the technology itself and degree to which people feel that the system is useful. This influences their desire to attempt to utilise it. On the other hand, if they do not perceive any benefits from it, they will either intend to use it or not. As a result, proper orientation and instruction are necessary.

Contribution to Knowledge

This study has contributed to the literature in terms of theory, practice and policy. Theoretically, this study's approach and subsequent findings would be sufficient to direct future studies for both academics and students. In the area of practicability, comprehending the factors influencing technology adoption is essential for the public and government sectors in developing guidelines and interpositions that will assist providers in delivering appropriate technology adoptions that will appeal to potential SME consumes. In the area of policymaking, the understanding of technology adoption will also aid policy makers to come up with better policies that are geared towards SMEs performance which will help in improving and achieving organisational long and short term goals.

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