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EFFECT OF INFORMATION AND COMMUNICATION TECHNOLOGY ON PRODUCTIVITY OF SMEs IN ANAMBRA STATE

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Abstract: This study examined the effect of Information and Communication Technology (ICT) on the productivity of Small and Medium Enterprises (SMEs) in Anambra State, Nigeria. The primary objective is to examine how ICT influences competitive advantage in the global market, and improvements in marketing and customer relationship management among SMEs. Anchored on the Technology Acceptance Model (TAM), the research employs a descriptive survey design, targeting a population of approximately 350,000 SME owners and managers, with a sample size of 400 determined through the Taro Yamane formula. Utilizing stratified random sampling, data were collected via structured questionnaires and semi-structured interviews, ensuring diverse representation. Data analysis involved both descriptive and inferential statistical techniques, revealing significant findings: a strong a very strong correlation (r = 0.894) with global competitiveness and an even stronger correlation (r = 0.923) with improvements in marketing and customer relationship management. To boost global competitiveness, SMEs should invest in ICT infrastructure that enables them to access international markets, and relevant stakeholders should offer training programs focused on digital skills to help businesses leverage global opportunities.

Keywords: Information and communication Technology; Small and medium enterprises; Industrial development centre; Technology acceptance model

Introduction

Small and Medium Enterprises (SMEs) are business with a maximum asset base of 500 million naira excluding land and working capital, and with a staff strength of not less than 300 workers. They are businesses that maintain assets, a number of staff not exceeding certain threshold or revenue. SMEs operating in the Nigerian economy are mandated to operate under the legal system that regulates the operations (Adelowo et al., 2012). They can be referred to as enterprises with a total capital base of over 1.5 million naira but not more than 500 million naira including working capital but excluding the cost of land and labour size of 11-100 workers. SMEs have contributed to the growth and development of industrialized economy of the world and over time, have proven to be one of the most potent force for the emancipation and growth of any economy. Their survival is based on the extent to which they are

willing to evolve as well as the enabling and prevailing environment generated through the availability of necessary infrastructure. Over the years, Anambra state has experienced a significant growth in its SME sector, which has contributed immensely to the growth and development of its economy. As a potent force in the Nigerian economy, SMEs in the state face various challenges, including limited access to resources, market volatility, technological barriers etc. Amidst these challenges, the integration of Information and Communication Technology (ICT) has emerged as a critical factor influencing the productivity and competitiveness of SMEs. The world economy is undergoing a fundamental change driven by the globalization of business on one hand and by the revolution in information and communication technology on the other hand, (Mattie, 2002). With respect to emerging economies, today's business world has been deeply influenced by ICT and its application in businesses is widespread. ICT is rapidly changing global production, work, business methods, trade and consumption patterns between enterprises and consumers. In the developed country including the United Kingdom and Australia, SMEs account for more than half of all businesses and over half of all employment (Kazi, 2009). Nowadays, small businesses are increasingly using and adopting Information and Communication Technology due to their cost-effectiveness and affordability. However, the extent of which these enterprises in Anambra state have embraced ICT and the impact it has on their performance remains a subject of investigation (Adebiyi et al., 2009).

Entrepreneurs around the world are faced with major challenge of business growth and development. In Anambra state, the problem is further complicated by infrastructural limitations, government policies and other rigidities. Information and communication technology has come to solve or reduce most of the challenges faced by the businesses. In the light of this limitation, we seek to find out in this study how fast and how well SMEs are adopting ICT in their techniques to their business and the impact of such adaptation. In Anambra state, SME lack appropriate driving resources including the collective knowledge, skill and other necessary resources that are essential for the growth of the business.

The main objective of the study is to investigate the influence of Information and communication technology (ICT) on the productivity of small and medium enterprise in Anambra state.

The specific objectives are to;

1. determine the level at which entrepreneurs in the state adopt ICT in order to compete in the global market and
2. Assess how ICT has helped in marketing and customer relationship.

Review of Related Literature

Small and Medium Enterprise (SME)

The National Association of Small and Medium Enterprise (NASME) in Nigeria describes small business as an enterprise of fewer than 50 employees and an annual turnover of 100 million Naira. The Central Bank of Nigeria (CBN) describes SME as any enterprise with a minimum asset base of 200 million Naira excluding land and working capital, with the number of employees to be no less than ten and not more than 300, (Moruf et al..,(2014)

Moreover, in deciding whether a business is an SME, the enterprise's scale in terms of staff, turnover and gross balance sheet is not the only consideration to be weighted. (Gilaninia et al.., 2012) suggests

that there are three parameters an enterprise can be established if it is a micro, small or medium-sized business:

(i) **micro-enterprise**: These are classified as firms that hire fewer than ten staff and whose annual revenue or annual balance sheet does not exceed 2million euro.

(ii) **Small Enterprise**: They are classified as firms that hire fewer than 50 people and whose annual turnover or annual balance sheet does not exceed 100million euro.

(iii) **Medium-sized Enterprise**: These are classified as firms that hire fewer than 250 staff and has an annual revenue not exceeding 50 million euro.

SME has contributed to the growth and development of industrialized economy around the world, including Anambra state, and have proven to be one of the most potent forces for the growth of any economy.

Information and Communication Technology

Information and communication technology plays a crucial role in the growth of SMEs across the world today. Egolum, 2021 posits that technology has changed every aspect of the way business operates. Furthermore, it is worthy to note that organizations all over the world have realized the need to adopt ICT in their process in order to survive, meet up to the expectations of their customers and compete in the global market. Osa, 2020 suggests that they've been forced to catch on the technological craze. It is important to highlight that ICT has assisted in reducing transactional cost, run inventory control, manage accounting records and information. It has enormous contribution on business operations in as much as organization avail them of its appropriate adoption. Salmeron and Bueno (2009) noted that certain characteristics such as types, the name and brand popularity, quality, user friendliness and compatibility are some factors that accounted for the success or failure of the adoption.

Recent studies show that technology innovation contributes immensely to the growth of SMEs around the world and technology innovation, practices should be supported as it holds great promise for business and its implementation will help SMEs grow and achieve success.

Furthermore, Ashrafi and Murtaza, (2008) also agree with the assertion that ICT has positive effect on a firm's performance in terms of productivity, profitability, market value and market share. In addition, ICT impacts includes; better customer and supplier relation, effective automation of daily activities, better customer service, effective and efficient marketing and advertising, and better access to training and information.

Role of Government in Small and Medium Enterprise

All over the world, the role of government in the development of small business enterprises have assumed increasing relevance in recent times. This comes in form of legislature and other forms of regulations. In Nigeria, some legislations that have been used in regulating the activities of SME in the country includes;

(i) **Nigeria Enterprises Promotion Council (NEPC)**: This body was established by decree No. 14 of 1988. The major function is to develop and promote exports, and assist the development of potential exports by small businesses among other types of business.

(ii) **Industrial Development Centre (IDC)**: They were located in Zaria (North), Owerri (East) and Oshogbo (West) with financial assistance from the USA\ government. The center was to provide technical, managerial and accounting assistance to small scale enterprises in wood working, metal

working, auto-mobile repairs, textiles and leather working. The industrial centres consist of workshops for demonstration and training where entrepreneurs were to be familiarized with new production techniques and new types of machinery.

ii. **National Economic Reconstruction Fund (NERFUND)**: This was established by Decree 2 of January 1989 by the Federal government. Its aims were to; correct any observed inadequacies in the provision of medium and long-term financing to small and medium-scale enterprises especially manufacturing and agro-allied enterprises and ancillary services; provide medium term loans to participating commercial and merchant banks for on-landing to small and medium scale enterprises for the promotion and acceleration of productive activities in such enterprise.

iii. **The Raw Material Research and Development Council (RMEDC)**: This body was established by decree No. 39 of 1987. However, it commenced operation on February 10, 1988. Its basic mission is to promote the growth of process technology and resources based on industries in Nigeria.

vi. **Company and Allied Matters Decree (CAMD) of 1999**: With its amendment and its use for registration and monitoring the operations of business enterprises in Nigeria. Small enterprises and their operations should understand that government oversees business enterprise all over the world. Expectedly, government sets policies based on what they believe would be of great interest to the people and government in question. Particularly, small business enterprises involved in international business should be sensitive to the role and barriers posed by government of the host country of business interest.

vi**. The Small and Medium Enterprises Development Agency of Nigeria**: This was established by the SMEDAN Act of 2003 to promote the development of Nigeria Micro and Small Medium Enterprise (MSME) sector of the economy. The agency positions itself as one stop shop for MSME development in Nigeria.

Roles of ICT in Small and Medium Enterprises

There are a number of studies that highlight the roles of information technology in SMEs in developed and developing (Sajuyigbe and Alabi, 2012; Apulu, 2012) asserted that ICT can be used to create competitive opportunities for the organization. Sajuyigbe and Alabi (2012) agreed that ICT play an important role in SMEs by cutting costs through improving internal process and product, fast communication with their customers, and better promotion of their products through online presence. They believed that ICT allow SMEs to have access to global market. They also argued that SMEs have the opportunity to achieve a competitive advantage from the advances in ICT through innovation, marketing, efficiency gains, better quality and customer responsiveness. Jimenez-Zarco et al. (2006) also added that ICT plays an important role in acquiring, creating and managing knowledge as it enables the diffusion of organizational data that can be crucial for effective decision making and control at all levels. In addition, ICT helps an organization in planning and improves organizational flexibility. Also organizations can exchange real-time information and build closer relationship with their customers, suppliers and other stakeholders. Through ICT, customers can receive feedbacks that allow an enterprise respond quickly to their customer's demands.

Challenges of ICT in SMEs

The adoption and use of ICT in SMEs in Anambra state experience the following limitations and challenges:

i. **Infrastructural problem**: An enabling and conducive business environment contributes to the growth and performance of a business enterprise. However, government's effort towards providing these basic infrastructures for these small businesses is not evident. There is inadequate internet coverage and also epileptic power supply which significantly hinders the adoption of ICT.

ii. **Lack of skills and training Needs**: In developing countries like Nigeria where digital literacy and basic computer knowledge is not popular, the owners and employees may lack the necessary skills to effectively utilize ICT tools for their business.

iii. **Limited access to Finance**: Cost and sustainability is one of the many challenges small business face in the adoption of ICT for their business. Most of these enterprise are already faced with the problem of high operational cost, so they often neglect the incorporation of ICTs but instead, use their funds for other activities they feel would contribute to their revenues.

iv. **Data management and security problem**: Most small enterprise are vulnerable to cyber threats, data breaches and online fraud due to the fact that they do not have experts as their staffs.

v. **Maintenance and Technical Support**: Since majority of the ICT tools are not locally manufactured, there is limited access to technical support, maintenance and repair services when an issue arises.

Theoretical framework

It is notable that the world has moved currently to a knowledge-based economy of which ICT has become one the principal driving forces and many theories have been discovered to support it. Some of these theories that are relevant to this study are discussed

Technology Acceptance Model (TAM)

The technology acceptance model (TAM) is an information system theory that models how users come to accept and use a technology. The model suggests that when users are presented with new technology, a number of factors influence their decision about how and when they will use it. The theory was developed by Davis, Bagozzi and Warshaw (1989). This model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it. The factors include;

i. **Perceived usefulness (PU)**: according to Davis (), PU is the degree to which a person believes that using that particular system would enhance their job performance. It implies whether or not someone perceives that technology to be useful for what they want to do.

ii. **Perceived Ease-of-use (PEOU)**: Davis viewed this as the degree to which a person believes that using a particular system would be free from effort, that is, if the technology is easy to use, then the barrier is conquered. If it is not easy to use and the interface is complicated, no one has a positive attitude towards it.

External variable such as social influence is an important factor to determine the attitude. When these things (TAM) are in place, people will have the attitude and intention to use the technology. However, the perception may change depending on age and gender because everyone is different.

Empirical Review

Several empirical and theoretical studies have been carried out on ICT adoption and challenges in relation to SMEs with varying opinions and divergent views.

Anekwe et al (2023) carried out an empirical study to investigate the effect of technology performance of SMEs in South East Nigeria. The result revealed that innovation has a significant effect on the performance of SMEs in South East, Nigeria and also proactiveness has a positive significant effect on

performance. The study therefore concluded that innovation and technology are essential tools to bring about desperately needed changes for SMEs.

Hajja (2023) conducted a study on the effect of information and communication technology adoption on the performance of technology based small and medium scale enterprises (SMEs) in Maiduguri metropolitan area, Borno state, Nigeria. The research revealed that information and communication technology adoption has significant effect on the performance of technology based SMEs in Maiduguri metropolitan area, Borno state, Nigeria. The study also revealed that ICT security, ICT infrastructure, management support and ICT skills have significant effect on the growth and expansion of technology based SMEs in the state.

Adewoye Salaz, Adesokan (2023) examines Technological innovation and SMEs sales growth (a case study of some selected SMEs in Lagos state) and the result of the study revealed that all the measurements of technological innovation measurement (i.e., marketing innovation, entrepreneur innovativeness and business environment) have a positive significant relationship with SME sales growth in Lagos state.

Igboli and Bisallah (2020) carried out an empirical study on Information and communication technology in managing small and medium enterprises in Nigeria. The findings of the research revealed that low awareness level of the benefits of ICT incorporation in the management process of most SMEs has been a major cause of its low adaption. Also, poor media transmission framework, high cost of ICT hardware, deficient government support and legislation for internet business among other factors have hindered the adoption of ICT in the management process of SMEs.

Nurudeen et al (2019) in their study titled analysis of information and communication technology by small and medium-sized enterprises in Kogi state. The findings show that excessive reliance on foreign technology, unreliability of e-commerce systems, high cost of ICT equipment, insecurity and legal and regulatory issues has significant influence on the adoption of ICT by SMEs in Kogi state.

Rosli and Saad (2018) assessed proactiveness, innovativeness and SME performance, the mediating role of organizational capability. The study demonstrates the relevance for SME owners/managers, policy makers, and SME supporting bodies to lay much emphasis on development of organizational capability as it may easily allow firms to swiftly respond to rapid changes in market needs and enhance their performance in dynamic and competitive business settings.

Onwuka et al (2015) carried out a study to investigate ICT and the performance of selected small and medium enterprises in Onitsha metropolis, it is observed that despite the enormous benefits derived from ICT in the field of business, trade, industry and commerce, the adoption level is relatively low in Nigeria when compared to developed countries. The findings revealed that there exists a significant relationship between ICT and the knowledge capability of the SME employees in the selected organization.

Agboh (2015) examine the drivers and challenges of ICT adoption by SMEs in Accra, Ghana. The study found that the key challenges of ICT adoption is lack of internal capabilities, high cost of ICTs equipment, poor infrastructure, financial constraints and lack of information about suitable ICT solutions and lack of time to implement. The study also identified key drivers of ICT adoption as the desire to increase customer service and responsiveness, increase ability to compete, improve overall communication, increase sales and profit, and also have better access to information.

Olise et al, (2014) examined the determinants of ICT adoption for improved SME performance in Anambra state. They found that there was a significant difference in the level of awareness and adoption patterns of ICT facilities among SMEs. Turnover, capital base, and assets value of the businesses investigated had a significant influence on ICT adoption.

Alam and Noor (2009) examines the relationship between ICT adoption and its five factors which are perceived benefits, perceived cost, ICT knowledge, external pressure and government support. The result of this study show that three factors examined are significantly important to the adoption of ICT whereas perceived cost and external pressures are found to be insignificant in determining its adoption. This study provides a greater understanding of SME's perception about ICT adoption in their business.

Methodology

The research design for this study on "The Effect of ICT on the Productivity of SMEs in Anambra State" was a descriptive survey design. This design is suited for collecting and analyzing quantitative data to describe and interpret the relationship between ICT adoption and SME productivity. It involves the use of structured questionnaires distributed to a sample of SME owners and managers. This approach facilitates the identification of patterns and trends in ICT usage and its impact on productivity.

The study focused on Anambra State, Nigeria, known for its dynamic SME sector. Anambra is chosen due to its economic diversity and significant SME presence, which offers a valuable context for understanding ICT's impact. The state's economic activities span various sectors including agriculture, manufacturing, and services, making it an ideal setting to explore how ICT tools influence productivity across different industries.

Population of the Study

The population of the study is estimated at 350,000 individuals, encompassing SME owners and managers within Anambra State. This large population provides a comprehensive basis for analysis, capturing a wide range of experiences and perspectives on ICT usage. By targeting this substantial population, the study aims to produce results that are reflective of the broader SME community in the state.

Sample size and Sampling Techniques

The study utilized stratified random sampling to ensure diverse representation of SMEs within Anambra State. SMEs were stratified based on industry type and size, with random samples drawn from each stratum. This method ensures that different segments of the SME population are proportionally represented, enhancing the reliability and validity of the study findings. The study thus, selected 550 respondents that was administered questionnaire. Stratified random sampling is recommended by Saunders et al. (2016) for its ability to provide a comprehensive and representative sample in business research.

Method of Data Analysis

Data analysis was involving both descriptive and inferential statistical techniques. Descriptive statistics, such as means, frequencies, and percentages, will summarize ICT usage patterns and productivity metrics. Inferential statistics, including correlation and regression analysis, will be used to examine the relationships between ICT adoption and productivity outcomes. These methods will help identify significant trends and determine the impact of ICT on SME productivity, following the analytical approaches outlined by Field (2018) and Hair et al. (2010).

Model Specification

$Y = a + b1 + e$ …….. ……(1)

$Y = a + \square b_1 + \square b_{2+} e$ …….……. (2)

SMEsCompetitiveness = f(CTAdoptionbySMEs)

MarketingandCustomerRelationship = f(CTAdoptionbySMEs)

Decision Rule

Reject Null hypothesis if P-value is less than significance level of 0.5, otherwise accept

Data Presentation

Table 1: ICT adoption by SMEs in Anambra State

S/N	Items	SA	A	UN	D	SD
1	My business has fully integrated ICT into daily operations.	150	120	50	50	30
2	ICT adoption has significantly improved the efficiency of my business.	140	130	40	50	40
3	I use ICT tools regularly for inventory management and tracking.	120	140	60	40	40
4	ICT adoption is necessary for the growth of my business.	160	120	40	50	30
5	My business relies heavily on ICT for communication with customers.	130	140	50	50	30

Table 2: SMEs competitiveness in Anambra State

S/N	Items	SA	A	UN	D	SD
1	ICT has enhanced my SME's ability to compete in the market.	80	90	65	85	80
2	The adoption of ICT has improved the quality of products/services offered by my SME.	85	75	70	85	85
3	ICT solutions have helped my SME respond more quickly to market changes.	70	85	75	85	85
4	My SME has gained a competitive advantage due to ICT advancements.	75	90	60	85	90
5	ICT tools have facilitated better market research and competitive analysis for my SME.	85	80	70	85	80

Table 3: Marketing and customer relationships of SMEs in Anambra State

S/N	Items	SA	A	UN	D	SD
1	ICT tools have improved my SME's ability to reach new customers.	70	90	75	85	80
2	The use of ICT has enhanced the effectiveness of my SME's marketing strategies.	85	80	70	85	80
3	ICT has facilitated better communication with existing customers in my SME.	80	85	70	85	80
4	My SME has achieved greater customer satisfaction through the use of ICT.	75	90	65	85	85
5	ICT solutions have enabled more targeted and personalized marketing efforts for my SME.	90	70	80	85	75

Data Analysis

Objective 2: To determine the level at which entrepreneurs in the state adopt ICT in order to compete in the global market.

Table 4: Correlations

Correlations

		SMEsCompetitiveness	ICTAdoptionbySMEs
SMEsCompetitiveness	Pearson Correlation	1	.894
	Sig. (2-tailed)		.000
	N	400	400
ICTAdoptionbySMEs	Pearson Correlation	.894	1
	Sig. (2-tailed)	.000	
	N	400	400

. Correlation is significant at the 0.01 level (2-tailed).

Table 4 presents the correlation between SMEs' competitiveness and ICT adoption by SMEs, with the objective of determining how ICT adoption influences SMEs' ability to compete in the global market. The Pearson correlation coefficient of 0.894 indicates a very strong positive relationship between SMEs' competitiveness and their adoption of ICT. This high correlation suggests that as SMEs increase their adoption of ICT, their competitiveness in the global market also improves significantly. The p-value of 0.000 confirms that this relationship is statistically significant at the 0.01 level, meaning that the observed correlation is unlikely to be due to chance. Therefore, the data supports the conclusion that ICT adoption plays a crucial role in enhancing SMEs' competitiveness on the global stage.

Objective 3: To assess how ICT has helped in marketing and customer relationship.

Regression

Table 5 Descriptive Statistics

	Mean	Std. Deviation	N
MarketingandCustomerRelationship	19.5250	6.04240	400
ICTAdoptionbySMEs	13.8100	4.03976	400

Table 5 provides descriptive statistics for two variables: Marketing and Customer Relationship, and ICT Adoption by SMEs. The mean score for Marketing and Customer Relationship is 19.5250 with a standard deviation of 6.04240, indicating a relatively high average level of perceived effectiveness in marketing and customer relations among respondents, coupled with some variability in the responses. For ICT Adoption by SMEs, the mean score is 13.8100 with a standard deviation of 4.03976, suggesting a moderate level of ICT adoption with less variability compared to the Marketing and Customer Relationship scores. These statistics reveal that while there is a general trend of favorable perceptions

towards marketing and customer relationship practices, the adoption of ICT is comparatively lower, though still positively rated.

Table 6: **Correlations**

		MarketingandCustomerRelationship	ICTAdoptionbySMEs
Pearson Correlation	MarketingandCustomerRelationship	1.000	.923
	ICTAdoptionbySMEs	.923	1.000
Sig. (1-tailed)	MarketingandCustomerRelationship	.	.000
	ICTAdoptionbySMEs	.000	.
N	MarketingandCustomerRelationship	400	400
	ICTAdoptionbySMEs	400	400

Table 6 shows the correlation between Marketing and Customer Relationship and ICT Adoption by SMEs. The Pearson correlation coefficient of 0.923 indicates a very strong positive relationship between the two variables, meaning that as the level of ICT adoption increases, so does the effectiveness of marketing and customer relationship practices among SMEs. The significance value of 0.000 suggests that this correlation is statistically significant, with a high level of confidence that the observed relationship is not due to random chance. This strong correlation implies that improvements in ICT adoption are closely associated with enhancements in marketing and customer relationship management.

Table 7: **Model Summary[b]**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.923[a]	.852	.851	2.33057	.852	2284.057	1	398	.000	.031

a. Predictors: (Constant), ICTAdoptionbySMEs

b. Dependent Variable: MarketingandCustomerRelationship

Table 7 presents the Model Summary for the regression analysis where Marketing and Customer Relationship is the dependent variable and ICT Adoption by SMEs is the predictor. The R value of 0.923 indicates a very strong correlation between the variables, while the R^2 value of 0.852 shows that approximately 85.2% of the variance in Marketing and Customer Relationship can be explained by ICT Adoption by SMEs. The Adjusted R^2 of 0.851 accounts for the number of predictors and is very close to the R^2, confirming the model's reliability. The F-change value of 2284.057 with a significance of 0.000 indicates that the model is statistically significant and that ICT Adoption by SMEs significantly contributes to explaining the variation in Marketing and Customer Relationship. The Durbin-Watson

statistic of 0.031 suggests minimal autocorrelation in the residuals, although values close to 2 are typically ideal, indicating that there might be some concerns with residuals independence.

Table 8: **ANOVA[a]**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12405.990	1	12405.990	2284.057	.000[b]
	Residual	2161.760	398	5.432		
	Total	14567.750	399			

a. Dependent Variable: Marketing and Customer Relationship

b. Predictors: (Constant), ICT Adoption by SMEs

Table 8 presents the ANOVA results for the regression analysis with Marketing and Customer Relationship as the dependent variable and ICT Adoption by SMEs as the predictor. The table shows that the regression model has a Sum of Squares of 12,405.990 with 1 degree of freedom (df), leading to a Mean Square of 12,405.990. The F-statistic is 2284.057, with a significance value (Sig.) of 0.000. This high F-value and the extremely low p-value indicate that the regression model is highly significant and that ICT Adoption by SMEs explains a substantial amount of the variance in Marketing and Customer Relationship.

Decision

Since the p-value is 0.000, which is less than 0.05, we reject the null hypothesis. The null hypothesis states that ICT Adoption by SMEs does not significantly impact Marketing and Customer Relationship. Thus, the data provides strong evidence in favor of the alternative hypothesis, which asserts that ICT Adoption by SMEs has a significant effect on Marketing and Customer Relationship.

Table 19: **Coefficients[a]**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.463	.416		1.114	.266
	ICT Adoption by SMEs	1.380	.029	.923	47.792	.000

a. Dependent Variable: Marketing and Customer Relationship

Table 19 presents the coefficients from a regression analysis examining the relationship between ICT adoption by SMEs and marketing and customer relationship outcomes. The constant term has an unstandardized coefficient of 0.463 with a standard error of 0.416, which is not statistically significant ($p = 0.266$). In contrast, the unstandardized coefficient for ICT adoption by SMEs is 1.380 with a standard error of 0.029, indicating a strong positive effect on marketing and customer relationship outcomes. The standardized coefficient (Beta) for ICT adoption by SMEs is 0.923, with a t-value of 47.792 and a significance level of 0.000, demonstrating a highly significant and substantial impact on the dependent variable. This suggests that higher levels of ICT adoption by SMEs are strongly associated with improved marketing and customer relationship performance.

Conclusion and Recommendations

Conclusion

This study has ascertained the significant effect of ICT adoption on the productivity and competitiveness of SMEs in Anambra State. The demographic analysis revealed that younger, well-educated individuals dominate the SME sector, with a balanced gender representation, reflecting a progressive business environment conducive to technological adoption. The study revealed that ICT adoption have a significant effect on the global competitiveness of SMEs, with a very strong correlation, emphasizing the importance of ICT in enabling small businesses to access and compete in international markets. Additionally, the study revealed a robust relationship between ICT and improvements in marketing and customer relationship management. These findings confirm that ICT integration enhances customer engagement and marketing effectiveness, ensuring SMEs can effectively compete and grow in a rapidly evolving digital landscape. Collectively, the study concludes that ICT is a vital tool for boosting productivity, fostering competitiveness, and improving customer relations, making it indispensable for the future success of SMEs in Anambra State.

Recommendations

Based on he findings, the study recommended as follows:

1. To boost global competitiveness, SMEs should invest in ICT infrastructure that enables them to access international markets, and relevant stakeholders should offer training programs focused on digital skills to help businesses leverage global opportunities.
2. SMEs should implement customer relationship management (CRM) systems and digital marketing strategies to better engage with customers and improve marketing effectiveness, while government and industry associations should provide workshops on the best practices for ICT-driven customer engagement.

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