

Effect of Information Technology on the Market Share of Small and Medium Scale Enterprises (SMEs) in Lagos State, Nigeria

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Abstract

The study examines the effect of information technology on market share of small and medium scale enterprises (SMEs) in Lagos state. The survey research method was utilized in selecting three hundred and eighty-one respondents comprising of owners and managers of selected SMEs within Lagos state. Questionnaires were used as a data collection tool administered on a sample of 381 out of which 366 were returned from samples. Data was analyzed using multiple regression. Two hypotheses were formulated and tested at 0.05% level of significance to check for the truthfulness and falsity of the dependent and independent variables using descriptive and inferential analysis through Statistical Package for Social Science (SPSS). Findings from the data analyzed shows that the use of information technology by management of SMEs helps to improve market share thereby increasing the effectiveness of management. The study therefore recommends that Small and medium scale enterprises should focus on variables used such as IT knowledge which has been identified as a major factor that could influence the performance of small and medium scale enterprises.

Keywords: Information Technology, Management Support, IT Knowledge, Market Share, SMEs.

Introduction

The current business setting characterized by environmental changes, new requirements, technological development, and new opportunities pushes SMEs to rethink their traditional production methods and introduce new technologies to remain competitive over time. (Paolom et al. 2022; Priyono et al. 2020). The modern marketplace is highly dynamic, therefore acquiring knowledge of traditional marketing and business tools alone is not adequate enough for SMEs to survive, thrive, and grow in the present stiff competitive business world. (Nwaizugbo & Aukam, 2014). The turbulent business environment demands something extra by way of information skills to complement it such as a mindset for opportunity-driven, innovativeness, and robust measurable market share. However, introducing a new technology is challenging for SMEs with limited access to external knowledge unclear innovation strategies (Mullor et al. 2021), and scarce time and resources for innovation (Bouwman et al. 2019). Surviving in this type of business environment becomes the main concern of this study.

Despite the fundamental importance of IT in modern businesses, SMEs are characterized by owners and managers with little or no structural knowledge of information technology

to grow their businesses because the concept is the new science of information collection, storage, processing, and transmission. However, it connotes an ensemble of technologies that cover computer and storage technologies, to store and process information known as information processing, connected together with telecommunication technologies which are capable of transmitting information over distances. Information technology covers all aspects of the arts or science of processing data to produce information. This information processing, storing, and dissemination with the assistance of a computer is called information technology. (Jamal & Nazmul, 2012). Uduakobong and Okonkwo (2021), explained that as businesses grow, they depend more on information technology for their survival and attractive market share.

Businesses today implement and use information technology to find solutions to various categories of business problems, to improve management decision-making, enhance productivity and quality, and compete for new markets in our global and aggressive business environment (Idris, Aderemi, Johnson, Haorayau & Wasiu, 2022). Rana (2013) opined that computers have shorter lead times and reduce scrap rates in business activities. From the foregoing, it can be seen that some research has been conducted on Information Technology and market share of small and medium scale enterprises but little acknowledgment of the concepts by SME management due to lack of government support in the area of finance to acquire the necessary technological tools, hence mass failure of small businesses in Nigeria.

Statements of the Problem

Research is a systematic investigation, an inquiry, an examination of problems to find solutions. This study seeks to find a solution to the high rate of physical and economic failure of SMEs in Lagos state.

Information Technology (IT) is undermined by SME management in spite of literature from scholars and researchers to unveil its contributions to the growth and development of businesses. Non acceptability of the concept in the current turbulent business environment is not clear. This uncertainty is the concern issue of the study. The lack of sufficient attention given to IT characteristics such as technological innovation, customer-centricity, and competitive growth by entrepreneurs pose a real problem for SMEs in Nigeria business as a whole especially Lagos state where a bulk amount of small and mid-size business is concentrated. Technology supports other key activities including gathering, processing, storing, and processing data. It is well noted that increasing these activities involves unambiguous collaboration and communication. The specific problems cited in this research study are as follows:

Inadequate commitment to innovation by the use of digital technology to create an edge over competitors. Studies of Small and Medium-Size enterprises (SMEs) around the world have shown that innovation is the most significant factor in increasing their numbers and improving business success. At the same time, the dominant view in economic theory is that technological innovation is a key generation of changes for which SMEs can be

considered as a kind of metaphor for successful business over the last twenty years in a number of economics. Cooperation among SMEs in the concept of 'technological innovation' is an increasingly common generic strategy of their development. However, SMEs seem to underplay the adoption of innovation in IT, thereby reaping less than maximum benefits from market share. The main reason for the neglect of this key phenomenon is not well documented and this study hopes to uncover this gap in research. The objective of this study is to investigate the effect of information technology on the market share of SMEs in Lagos State. To achieve this, the researcher outlined the following research objectives are to:

- i. determine the relationship between IT knowledge and the market share of SMEs in Lagos State.
- ii. examine the impact of management support on the market share of SMEs in Lagos State.

The following research questions are also proposed

- i. What is the relationship between IT knowledge and the market share of SMEs in Lagos State?
- ii. Does management support have an impact on the market share of SMEs in Lagos State?

From the foregoing research questions, the following propositions are made

H₀₁: There is no significant relationship between IT knowledge and market share of SMEs in Lagos State

H₀₂: There is no significant impact of management support and market share of SMEs in Lagos State

Literature Review

Concept of Information Technology

Information Technology means not only a single unit of technology but the integration and convergence of a large number of technologies that have come together to serve and meet the user's needs in the age of information revolution (Jamal & Nazmul, 2012). It involves the computer's electronic media, satellites, telecommunications, and storage devices. Information technology is the study or use of electronic equipment, overcoming the computer for storing, analyzing, and any information, including keywords and images (Ramadham, Nurhayati, & Halimatusadiah, 2016). Information technology includes hardware and software to perform one or more data processing tasks such as capturing, transmitting, storing, retrieving, manipulating, or displaying data dimensions of information technology which is the intensity of utilization, frequency of utilization, and the number of applications or software used.

The impact of modern information technologies in businesses is broad and manifested in the most varied ways: Integrated systems, such as ERP systems, internet, intranet, and so on, walk hand in hand with the most recent development in business know-how. Some of these technologies with their widespread use, especially the internet, have altered the way

businesses work (Granllund, 2007). Prior to the emergence of this environment, the presence of IT in the organization has typically taken the form of specific computer application systems, such as accounts payable and financial reporting systems which either automate specific operational procedures or support certain businesses (Obio Kanu, 2020). As businesses grow, they rely more on information technology for survival (Uduakobong & Okonkwo, 2021). Businesses today implement and use information technology to find solutions to business problems, improve management decisions, enhance productivity, sales growth, profitability, and quality, and compete for new markets in our global and aggressive business environment (Idris, Aderemi, Johnson, Haorayau & Wasiu, 2022). In developing countries, information technology plays a vital role in development. The adoption of information technology in business processes has improved the overall performance of Small and Medium Scale Enterprises (SMEs). IT has immensely affected small business activities in the improvement of productivity, office automation, sharing of data and information internally and externally, storing of large amounts of data, competitiveness, marketing, and security.

Market Share

This concept "Market Share" is an outcome and measure of organizational performance and success in an industry (Brush, 2014). The higher the market share of SMEs in a market, the higher the development of SMEs, and vice versa. Market share consists of the capability of a company to use a brand image that can enjoy significant importance in every category of products or services. (Lee and Masso (2010), define market share as that share of the market commanded by the firm's product or brand. O'Regan (2002), defined marketing shares as a company's sales in relation to total industry sales for a certain period. (Pearce and Robinson (2003), also use the same definition that market share is sales relative to those of other competitors in the market. Market share is usually used to express the competitive position of SMEs. It is generally accepted that increased market share can be equated with success whereas decreased market share is a manifestation of unfavorable actions by firms and is usually equal to failure.

For SMEs to succeed and have a higher percentage of market share in the regular business changing environment, they should be acquitted with the use of information technology in all their operations. Also, a good market share of an organization depends on the internal buildup of the firm's marketing department, coordination of its activities, quality of information and communication technology, procurement system, quality of human resource capital, and how they interact and impact the cost and differentiation (Ojung'a, 2007). Market share is calculated as the percentage of an industry or market's total sales that is earned by a particular company over a specific time period. Market share is calculated by taking the company's sales over the period and dividing it by the total sales of the industry over the sales period.

Theoretical Review

Dynamic Capability (DC) Theory

Teece et al., (1997), characterized "dynamic capability" (DC) as the ability of an organization to frame and reframe internal and external competencies in order to withstand unpredictable turbulent business environment. Teece and Pisano (1994), noted dynamic capabilities (e.g., timely innovation, effective deployment of the organizations internal and external competencies) as determinants of firms' competitiveness. For Teece et al., (1997), DC assists in grasping the way in which dynamic capabilities aid organizations in establishing and sustaining competitiveness through IT recognition in a fierce marketplace. Teece (2007), placed dynamic capabilities at the Centre of the organization's achievements. DC places capabilities and competencies at the core of management activities.

Protagonists of DC frameworks stress that the meaning assigned to dynamic capabilities in DC is blurred and inconsistent (Arend & Bromiley, 2009; Zahra et al. 2006). Owing to the difficulties in operationalizing the definition proposed (Elsehardt & Martin, (2000). Further limitations were found by Arend and Bromiley (2009), that the inability of a company to adapt to a certain circumstance is not synonymous with lacking dynamic capabilities.

The Strategic Contingency Theory (SCT)

The notion of 'Fit' is the center of the SCT theory. It postulates that organizational performance is a result of the congruence between the organization's key characteristics (innovation, customer needs, demands, and competitive structures) and the contingent factor of its business environment. This view is mainly well supported among contingency-based researchers such as Steiner (1979), Hofer, (1990), and Ginsberg and Venkatraman (1985). They view a firm's resources in conjunction with environmental factors as a possible avenue for IT strategical formulation (Hofer, 1990, Lawrence & Lorsch, 1967) making contingency central to the firms' operation. Many authors (Drazin & Vande Ven, 1985; Nadler & Tushman, 1980; Umanath, 2003) "Fit" is an alignment between the firms' resources and competencies and environmental factors (Venkatraman & Canillius, 1984) that deliver performance outcomes. Many authors (Miles, 2012; Perrow, 1979; Schregogg, 1980) reproach SCT for the deterministic stance that it takes. This essential criticism is rooted in the view that in the SCT framework, contingencies determine the organization attitudes and choices, assuming that most first approach to business reality is essentially reactive (Miles, 2012).

Theory Adopted for the Study

Based on the theoretical review, the study was anchored on the Dynamic capability view theory (DCV) because it creates avenues for an organization to fit in any changing business environment and reorganize its ability internally and externally by virtue of digital services in order to survive and grow in this kind of unpredictable and turbulent business environment. This is the current environment in which SMEs have found themselves.

Empirical Review

Kitema & Makhamara (2022), carried out a study on the Influence of Technological Innovation Strategy on the organizational performance of Kenya Broadcasting Corporation in Nairobi city, Kenya. The specific objective of the study sought to investigate the sway of technological innovation strategy in the dimension of innovation, customer-centricity, and competitive growth that bring to the limelight of the organization performance in Broadcasting Corporation in Kenya. The theory underpinning the study objective was the contingency theory. The researcher utilized the descriptive research design. The target population comprised the members of the headquarters of the Kenya Broadcasting Corporation in Nairobi City County, Kenya. The target respondents were selected using a stratified random sampling of 150 employees from the departments of Radio, Television, ICT, Technical services, corporate planning, Research, and development, and Administration. The study used primary data which were gathered using a semi-structured questionnaire. The research findings revealed that technological innovation strategy (0.903) was statistically significant in determining organizational performance and that it accounted for 34.5% of the variation in the organizational performance as depicted by the coefficient of multiple determination ($R^2=0.345$). Having established that Technological strategy had a positive effect on organizational performance, the management of Kenya Broadcasting corporation could utilize the findings in formulating policies that forment the activities and practices associated with technologically innovative strategy to enhance performance of different SMEs in Kenya.

Henny & Suarman (2020), in their article "Barriers to the technological innovation of SMEs: "How to solve them" in Riau province, Sumatra, Indonesia, have analyzed the inhibiting factors of small and medium enterprises (SMEs) technology innovation, supporting institutions for SMEs technology innovation development, SMEs technology innovation development model and strategies for developing SMEs in technology innovation. Mixed method research was conducted through a survey of SMEs in Riau province, Sumatera. Indonesia for SMEs that have been operating for at least five years were chosen purposively as a sample. Based on the requirement, there are 277 entities used in this study. A focus group discussion was also conducted to formulate SMEs models and development strategies in technological innovation. In addition, in-depth interviews and observations were carried out on technological innovations undertaken by respondents. It was found that there are five inhabiting factors of SMEs technology innovation: funding of technological innovation, government support, quality of human resources, economic conditions and business owners and managers. The biggest inhibiting factor remains the ignorance skill of owners of SMEs which is also in agreement with the essence of this study. Therefore, SMEs provide independent innovation costs, innovativeness, customer- centricity and competitive growth for business sustainability. To survive and excel amid competition, SMEs businesses need to pay attention to technological innovation. The business strategy that needs to be done is to improve services to consumers and improve their attitude toward innovation in the implementation and development of SMEs businesses.

Amahdi Mosbah & Najiya (2022), conducted research on knowledge and use of Information Communication Technology in Libyan SMEs. A survey was conducted among 207 corporate executives. A descriptive-explanatory methodology was used. The statistical technique was descriptive analysis. A structure survey was used as a data collection instrument. Findings was that ICT is underutilized in Tripoli SMEs which result to mass failure of SMEs in Libyan. It is clear that the department of Tripoli, Libyan, needs to strengthen training programs on the matter, and it is also imperative that businessmen be updated on the benefits of these important technological tools either at the initiative of the universities of the region or the chamber of commerce of Libyan.

Edwin (2018), studied Relevance of Information Technology in the effective management of selected SMEs in Lagos State, Nigeria. This study purpose was to investigate the relevance of information technology in the proper effective management of selected SMEs in Lagos state. The survey involves one hundred and fifty respondents comprising of managers and employees in selected SMEs within Lagos state. Questionnaires were used as data collection tool. Four hypotheses were formulated and tested using descriptive analysis and regression analysis through the Statistical Package for Social Science (SPSS). Findings from the data analyzed shows that use of information technology by managements of SMEs helps to improve productivity and market share, thereby increasing the effectiveness of management. This study recommends that sound education and training for managers and employees to create more awareness and improve the e- literacy of SMEs operators.

Akande & Yinus (2013), carried out an appraisal of the impact of Information Technology (IT) on Nigeria Small and Medium Enterprises (SMEs) performance. The purpose of this paper is to investigate a deep understanding of influence of Information Technology (IT) on the performance of Small and Medium Enterprises (SMEs) operation in Nigeria. This paper attempts to explore the extent to which the improvement in SMEs operation performance can be certified to the implementation of information technology (IT). The study was carried out in Lagos State, using multi-stage sampling technique, a sample of 200 out of 250 respondent SMEs were selected from a list of 4,535 registered small and medium enterprises as provided by NASSMEs obtained from www.businessdayonline.com as at November, 2013. Data collected were coded and analyzed using frequency table and percentage while non-parametric statistical test, chi-square was used to test the formulated hypothesis using STATA 10 data analyzed package. The result of hypothesis tested showed that information technology has significant impact on the performance of SMEs operation in Nigeria. It was concluded that involvement by SMEs in IT will significantly improve their market share in term of productivity, sales growth, time saving, competitive growth and employment generation. To this end, it is recommended that there is need for more training facilities in IT for SMEs, and ease of use of free professional advice and consulting on IT at reasonable cost to SMEs.

Olaoye & Olaofe-Obasesin (2019), examined the impact of Information Technology on corporate organizations performance in Nigeria. The research explores the significance of

information technology on corporate organization. The study is empirical as questionnaire was the primary source of data collection while results were presented with average, variance and standard deviation. The target respondents constitute specialists in the field of information technology specifically Lagos State. To achieve the primary aim of this study, forty-five questionnaires were administered to the IT specialist, forty was received which was analyzed with one way ANOVA technique. Findings from the research depicted that information technology have significant impact on corporate organization performance in Nigeria. It was recommended that corporate organization must prioritize training of personnel and invest massively on IT for efficiency in operations.

Adeyemi, Micheal & Yusuf (2017), investigated the impact of Technological Innovation on SMEs market share in Nigeria. They tried to examine the impact of research and development (R D) process innovations on Small and Medium Enterprises (SMEs) performance in manufacturing industries in Nigeria using a survey of 1000 SMEs with a response rate of 52.1% in year 2009. The results with least squares method showed that R & D spending by the firms as well as process innovation has significant impacts on firms' performance (market share) with probability value of 0.0529, 0.624 and 0.0086 respectively at 10% level of significant. Also, training of workforce constitutes the major innovation activities in Nigeria manufacturing SMEs as against in-house and outsourced activities. This study suggests that improvement technological activities are expected to increase SMEs market share and thus generate more employment in Nigeria.

Methodology

The research design that was adopted for this study is a descriptive survey design. This was employed to empirically investigate the relationship among variables of the research. The descriptive design is preferred because it largely focuses on vital facts, beliefs, opinion, demographic information attitudes, motives and behaviors of correspondent and given responses to the research instructions (Aliyu, Tudun, & Oladejo, 2014; Osinbanjo, Adeniji, Falola & Heirsman, 2014). The population of the study comprises all registered SMEs in Lagos State, Nigeria. SMEDA (2012), recorded a total 11,489 roistered SMEs in Lagos State. The population were selected from three sectors (Trading, Manufacturing and Services). The descriptive survey was used in this study. The sample consisted of 387 participants which the sample size comprises owners and managers of SMEs in Lagos State. A structure questionnaire consisting of sections A, B, and C developed by the researcher was used to elicit information from the participants. Five points rating scales was used to measure the responses. The scales ranged from 5(strongly agree) to 1(strongly disagree). The questionnaires were distributed to 387 participants. The data was analyzed with the use of both descriptive and inferential statistical method. Descriptive statistical analysis was used to present demographic data and inferential statistical technique was used to evaluate the effect and relationship between the variables. Regression analysis was also use to analysis the relationship between the two or more variables with dependent variable (multiple regressions). In this case the relationship between information technology and market

share of SMEs in Lagos. The underlying assumptions of the linear regression which are linearity, normality and homoscedasticity were tested in continuous data used for the regression analysis.

Analysis and Results

Three hundred and eighty one (381) questionnaires were administered and three hundred and sixty six (366) questionnaires were returned and used for this study. Finding shows that the distribution of the respondents on the basis of gender, age, marital status and educational qualification. The analyses of distribution based on gender shows that 210 were male representing 57.5% and 155 were female representing 42.5%. the analyses of the distribution by age shows that out of 365 respondents, 62 fall between 18 – 25 years, 58 fall between 26-35 years, 114 fall between 36-45 years, 79 fall between 46 – 55 years, 30 fall between 56 – 65 years and 22 falls between 66 years and above. Analysis based on the marital status of the respondents shows that 161 of the respondents were single, 173 of the respondents were married and 31 were either married or separated. Analysis of the distribution of educational qualifications of respondents shows that 163 were holders of ND/NCE, 158 were holders of B.sc/ HND and 44 were holders of Postgraduate degrees.

Research Hypothesis One

H₀₁: There is no significant relationship between IT knowledge and market share of SMEs in Lagos State.

Table 1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.352 ^a	.124	.122	.49651
a. Predictors: (Constant), IT Knowledge				
b. Dependent Variable: Market Share				

Source: SPSS 23

Table 2: ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	12.686	1	12.686	51.458	.000 ^b
	Residual	89.489	363	.247		
	Total	102.174	364			
a. Dependent Variable: Market share						
b. Predictors: (Constant), IT Knowledge						

Source: SPSS 23

Table 3: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.809	.212		13.255	.000
	KNOWLEDGE	.354	.049	.352	7.173	.000
a. Dependent Variable: Market share						

Decision Rule

According to Table 2, the overall result for the regression model was significant ($p = 0.000 < 0.05$), thus result indicate support for the first hypothesis. Null hypothesis is rejected and alternative hypothesis is accepted which indicate that IT knowledge has significant effect on market share of SMEs in Lagos State. Depending on the R^2 value of (0.124) IT knowledge could explain 12.4% variation in market share. The analysis of variance (ANOVA) calculated F-test was 51.458 and an associated significant value of 0.000 (p value < 0.05) was significant. The implication is that the simple linear regression was good fit for the data.

Research Hypothesis Two

H_{02} : There is no significant impact of management support and market share of SMEs in Lagos State.

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.425 ^a	.180	.178	.48031
a. Predictors: (Constant), Management support				
b. Dependent Variable: Market Share				

Source: SPSS 23

Table 5: ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	18.432	1	18.432	79.899	.000 ^b
	Residual	83.742	363	.231		
	Total	102.174	364			
a. Dependent Variable: Market Share						
b. Predictors: (Constant), Management Support						

Source: SPSS 23

Table 6: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.632	.190		13.832	.000
	Management support	.400	.045	.425	8.939	.000
a. Dependent Variable: Market share						

Decision Rule

According to table 4, the overall result for the regression model was significant ($p = 0.000 < 0.05$), thus results indicate support for the second hypothesis. We reject null hypothesis and accept the alternative hypothesis which indicate that management support has significant impact on market share of SMEs in Lagos State. Depending on the R^2 value of (0.180), management support could explain 18.0% variation in Market share of SMEs. The analysis of variance (ANOVA) calculated F-test was 79.899 and an associated significance p value of 0.000 ($p \text{ value} < 0.05$) was significant. The implication was that the simple linear regression was good for the data.

Discussion of Findings

The regression result showed in table 1 relates to the relationship between IT Knowledge and market share. The value of the R^2 (0.124) reveals that IT knowledge account for 12.4% of the variation in market share. This shows that IT Knowledge have positive relationship with market share. The f -statistic in the table 2 shows that the model is statistically significant. The value of adjusted R^2 indicates that the model is fit. Table 3 shows the regression result relating to the relationship between management support and market share. R^2 value of 0.180 reveals that management support independently accounts for 18.0% of the variation in market share. The f -statistics in table 5 shows that the model is statistically significant. The value of the adjusted R^2 indicates that the model has a good fit. There is a significant relationship between Information technology variables (IT knowledge and management support) and market share. It can therefore be concluded that IT Knowledge and management support jointly predict SMEs market share to a large extent.

Conclusion and Recommendations

From the research findings, it can be seen that IT knowledge has positive relationship with market share. In essence, there is a strong relationship between IT knowledge and market share. It is therefore very essential to consider the information on IT knowledge in order to constantly increase market share. Finding shows that management support has a significant relationship with market share of SMEs. In variably, there is a positive

relationship between management support and market share. In line with this study, it is hereby recommended that

1. Small and medium scale enterprises should focus on variables used such as IT knowledge which has been identified as a major factor that could influence the performance of small and medium scale enterprises. The study emphasized on the significant of IT knowledge on market share of SMEs performance. It is therefore suggested that SMEs should partner with relevant authorities such as Federal, State and Local government so as to achieve the benefit of this variable in its entirety.
2. It is also recommended that management support as one of important predictor of information technology should give much attention by small and medium scale enterprises in Lagos State so as to be able to explore its benefit. The study shows that management support plays an important role on market share of SMEs. It is recommended that there is a need for SMEs to embark on effective strategy implementation practices to be able to improve their performance.

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