

Information Technology Adoption And The Growth Of Small And Medium Enterprises In Greater Kampala Metropolitan Area, Uganda

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Abstract: Growth of Small and Medium Enterprises plays a major role in improving a country's economic development. Whereas research identifies the role played by Information Technology adoption in improving the growth of organizations, much emphasis has been given to understanding large organizations in developed countries. This has left SMEs in developing countries prone to low growth and limited survival in the market with the contemporary competitive business environment. More so, SMEs contribute approximately 20% of GDP in most developing countries. Apparently, due to a weak link between Information Technology adoption and Growth of SMEs. In Uganda, it appears that there is need for a greater emphasis on studies that link information technology adoption and growth of SMEs. In this study a mixed methods approach and cross-sectional research design was used to establish the effect of information technology adoption and growth of small and medium enterprises in greater Kampala metropolitan area on a sample of 189 top administrators of SMEs. Findings revealed approximately a large correlation between information technology adoption and growth of SMEs. Linear regression results revealed that 42.2% of growth of SMEs according to this study was explained by variations in information technology adoption practices. As a result, this study recommends that SMEs ought to take advantage of the existing sophisticated and the ever varying information technologies in order to achieve their ultimate goal which is growth.

Keywords: Information Technology Adoption, Growth of Small and Medium and Enterprises.

1. INTRODUCTION

The concept of small and medium enterprises (SMEs) dates back 4000 years ago, during the ancient cultures when business flourished among Arabs, Egyptians, romans, Jews, Greeks among many others. During that time, the cottage industries thrived and the workman in craft produced goods at his home and would sell the finished products by himself to the market. As time passed, there was a major resurgence in small scale industries throughout the world (1–3). Globally, countries are facing the challenge of low growth, weak trade and investment, and persistent rise in inequality among small and medium enterprises. Small and medium enterprises are key players in the economies, enabling small and medium enterprises to adapt and thrive in a more open environment is essential in boosting economic growth and development (4). According to Olughor (5), growth of SMEs strongly relies on their innovativeness and the ultimate goal of innovation is to improve business growth. Given the continually changing environment, information technology adoption become a competitive advantage for firms, this means that SMEs policies should be designed in a way which generates better and viable inducement for information technology adoption activities. Information technology coupled with other Innovation practices have become a basis for development of most economies. Nonetheless, the ICT innovations have still remained a puzzling problem of research in economics, yet key research work has been concentrated in understanding of the process in industrialized countries and reasonably not much has been done for the developing countries (6). Small and medium enterprises largely contribute to economies of most or all developed countries. They act as a basis of employment, provider of

survival, ensuing reasonable income distribution, increase in monetary capital gains and importantly contribute to Gross Domestic Product (GDP) of emerging economies like India, Brazil, China and Malaysia. Government of developing countries are obliged to spend significantly to the growth and sustainability of SMEs through the provision of vital infrastructures, human resources, finance, adequate policies and security (7). Companies which use information technology based achieve cost savings and competitive advantage through low cost of advertising, timely market responses and customer relationship. Adoption of information technology has helped to be more effective, innovative, efficient and competent (8). Determinants of productivity and growth have been documented for industrialized countries with innovation regarded as the key to growth. However, in most developing countries, majority of the firms are still operating far below the technological level with lower levels of human capital and older vintage of machinery. Several initiatives have been undertaken to develop measures of innovation activities in developing countries; they include human resources, linkages with the human capital development of firms, adoption of ICT, quality control systems, acquisition of embodied technology and Research and Development (9). There are various variables which may symbolize the growth of commercial enterprises. They include sales, employment, net profit, number of customers or market share, asset size, business expansion, market and product diversification and physical output (10). In Uganda, "Small and medium enterprises are faced with a number of challenges that lead to business failure. These causes of failure are quite diverse in nature. They have resulted in more than fifty percent of businesses failing in the first five years of their existence and fighting a

difficult battle from the start” (11). Furthermore, the World Bank in its survey (2015) identified impediments for small and medium enterprises growth and competitiveness which included the informal sector with many enterprises only lasting five years or less. In line with vision 2040, small and medium enterprises were identified as main basis of technological innovations since they constitute a significant sector in manufacturing, services and agribusiness engaged in local, regional and international business. Companies use information technology to gain local and international competitive advantage. Government of Uganda, development associates and the private sector have come up with a number of creativities to encourage the small and medium enterprises sector but this has to-date not yielded to their expectations and still perform poorly (12,13).

Small and Medium Enterprises in Uganda

Uganda Bureau of Statistics (UBOS) has embraced the classification of enterprises based on the realization of minimum necessities; these include number of employees, capital investment, and annual sales turnover among others. “Small enterprises employ 5 – 49 and have total assets between 10 million but not exceeding 100 million; medium enterprises employ between 50 – 100 with total assets between 100 million but not exceeding 360 million” (UBOS 2010/2011). According to Uganda MSME Policy (13), in Uganda SMEs contribute above 20% of GDP which is sizable. Vision 2040 has emphasized setting up a national institution for coordinating SMEs development. The World Bank (2015) identified impediments for small and medium enterprises growth and competitiveness which included the informal sector with many enterprises only lasting five years or less, despite the number of initiatives like the youth fund, “entandikwa” scheme, operation wealth creation program and many others by Ugandan government, development associates and the private sector to promote the small and medium enterprises sector (12,13). The government of Uganda through the Ministry of Trade, Industry and cooperatives recognizes the contribution of SMEs through its MSME policy framework for 2015 – 2025 towards the attainment of the national objective of vision 2040. SMEs have been identified as the major source of technological innovation and new products; however, there is inadequate framework to enable SMEs realize full growth potential.

Information Technology and Growth of SME

In a study to improve the understanding of issues which affect Information Technology adoption by small and medium enterprises, it was revealed that today’s business world has been extremely inclined by ICT and its application has become wide spread. Small and medium enterprises are now gradually adopting to the use of information technology. ICT adoption progresses commercial competitiveness among small and medium enterprises and large enterprises. Findings also demonstrated a possibility of ICT adoption by firms in search for a wide variety of opportunities for improving their competitiveness (14). A descriptive study to examine the role of ICT adoption in the survival of SMEs in was carried out using a sample of 100 SMEs. It was revealed that ICT is vital and it helps SMEs to survive in any competitive business environments. It was also revealed that majority of the firms in Ghana use at least one ICT tool in supporting their operations. ICT is the basis in which small and medium enterprises can shape enterprise information systems meant

to improve business processes, client relationships and distribution of goods and services to satisfy their clients. It is clear that ICT adoption facilities were insignificantly available in SMEs in Ghana due to a series of different reasons (15). Due to intensive competitiveness and necessity to enter the global market by small and medium enterprises, SMEs are increasingly employing information technology to have a competitive advantage in the current competitive business environment. Most of the previous studies have focused more on adoption of ICT in large organizations. Information Technology has become a crucial tool for daily for daily operations of small and medium enterprises. In line, SMEs are investing more in Information Technology to strengthen their competitive advantage (16,17). Economic growth of a country depends to a certain degree, to which its business community can maximize growth potential. One of the key contributors are SMEs. Studies show that, SMEs and large enterprises can improve their production capacity by tapping on the benefits of ICT adoption. It is recommended that bodies which regulate SMEs should formulate policies which will facilitate the adoption of ICT facilities by SMEs to improve their performance (18). Also, continued use of information technology in SMEs as an innovation practice stimulates their growth by adopting new and improving the existing technological infrastructures. Such practices are used by firms to replace the existing traditional methods of communication, manage business documentation and business databases which are crucial factors for survival and sustainability of firms (19).

2. METHODOLOGY

Research Approach

Mixed methods approach was adopted; the study was based on a combination of quantitative and qualitative approaches. For quantitative methods, statistics were used to measure reality or views with a focus on measurement of relationships between variables with a view to build models that can predict outcomes; qualitative methods were used to interpret and make sense of the problem and the meanings that people attribute to them by gathering data and interpreting it (20,21).

Research Design

When conducting a good research, a good researcher is anticipated at the beginning after defining the scope of research to come up with an plan or the strategy to be followed which is called the research design. It is composed of the methods to be followed, concepts which will be measured and the method chosen by the researcher which will adequately perform the task (22). This study was directed by mixed designs where both quantitative and qualitative research designs were employed. Descriptive, Correlational, survey and cross-sectional Designs were adopted. Descriptive designs involved the use of means, frequencies, standard deviation and percentages to describe and get meaningful interpretation of the study variables; Correlational designs were used to collect data on two variables in order to establish the relationship between the two variables and hypothesis testing; Survey design was also used to collect data from a large number of respondents at a certain point on time thus making it a Cross-sectional design as well.

Target Population and Sample Size

The target population of this study was all registered SMEs in Greater Kampala Metropolitan Area (GKMA). From each of the SMEs, the researcher targeted one top administrator (owner, manager and any other top administration staff). These enterprises should have been in operation for a duration of not less than three years. The researcher chose to carry out his study on SMEs in GKMA because over a third of SMEs are located in central region with most businesses in Kampala, Mukono and Wakiso (23,24). A total of 226 SMEs were involved in the study using Krejcie & Morgan table (25) to determine the sample of enterprises and respondents to be involved in the study.

Data Collection Instruments

According to Amin (26), in a survey research design exists main procedures for collecting data from the respondents. This study adopted survey research design and thus used self-administered questionnaires to collect data from the respondents of the study. The questionnaire used a five point likert scale as cited by Wade (27). The researcher opted to include a 0 “Zero” in a five point likert scale because he was interested in the absence or presence of the attribute to which the scale pertains, that is growth of SMEs in this study. This study choice is supported by the findings of Schwarz et al., (“spss - Is 0 a valid value in a Likert scale? - Cross Validated,” n.d.) (28,29). This study notices that most studies have been based on likert scales without a 0 “zero”, and this justifies the reason as to why this study’s likert scale included a zero in order to be able come up with new knowledge.

Data Analysis

Quantitative data was analyzed using the statistical package for social scientists (SPSS Version 22). Data was cleaned prior to analysis by checking for omitted values, checking outliers, common method variance, testing for normality, linearity, sampling adequacy and Multicollinearity. Thereafter correlation matrix to examine the indexes to ensure its suitability, confirmatory factor analysis was also performed to explain the variance of the variables by identifying the underlying factors which determine the effect of innovation practices on the growth of SMEs variable observed, and the component factor analysis to ensure that the loadings were acceptable. Pearson linear correlation and simple linear regression analysis was conducted on each of the variables to establish the relationship between variables and the effect of independent variables on the dependent variable respectively. Multiple linear regression was done to determine the predictive nature of the relationships between the study variables and relative effects of each of the independent variables on the dependent variable. In simple linear regression analysis, the dependent variable, growth of SMEs was regressed on each of the independent variables respectively while in multiple linear regression it was jointly regressed.

3. RESULTS

Pearson’s linear correlation on Information Technology Adoption and Growth of Small and Medium Enterprises in Greater Kampala Metropolitan Area. In order to achieve this study’s third objective the researcher started by carrying out a Pearson linear coefficient correlation on the two variable (information technology adoption and the growth of small

and medium enterprises). The corresponding results are presented in table 1.

Table 1: Pearson’s linear correlation on IT Adoption and Growth of SMEs in Greater Kampala Metropolitan Area

		Correlations	
		Information Technology Adoption	Growth of Small and Medium Enterprises
Information Technology Adoption	Pearson Correlation	1	.650**
	Sig. (2-tailed)		.000
	N	189	189
Growth of Small and Medium Enterprises	Pearson Correlation	.650**	1
	Sig. (2-tailed)	.000	
	N	189	189

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

Source: Primary Data

Pearson’s linear correlation coefficient was used to ascertain the relationship between information technology adoption and growth of small and medium enterprises in greater Kampala metropolitan area. Preliminary analyses of normality and linearity to ensure that there were no violations of the assumptions of normality and linearity were done revealing a normally distributed data. Results in Table 1 indicated that there was a positive and significant relationship between information technology adoption and growth of small and medium enterprises in GKMA ($r=.650, p=.000$) and approximately large correlation between the variables. As suggested by Cohen (30) in determining the strength of a relationship, these results indicated that an improvement in information technology adoption levels will lead to a corresponding improvement in the growth of small and medium enterprises in greater Kampala metropolitan area.

Results of Linear Regression Analysis

This was done by regressing information technology adoption against growth of SMEs in greater Kampala metropolitan area as per the results hereunder.

Table 2: Linear Regression Analysis Results

Model Summary ^b						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.650 ^a	.422	.419	.32904		
a. Predictors: (Constant), Information Technology Adoption						
b. Dependent Variable: Growth of Small and Medium Enterprises						
ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	14.775	1	14.775	136.469	.000 ^b
	Residual	20.246	187	.108		
	Total	35.021	188			
a. Dependent Variable: Growth of Small and Medium Enterprises						
b. Predictors: (Constant), Information Technology Adoption						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.597	.132		12.102	.000
	Information Technology Adoption	.511	.044	.650	11.682	.000
a. Dependent Variable: Growth of Small and Medium Enterprises						

Source: Primary Data

Results from Table 2 revealed that 42.2% (R Square=.422) of Growth of Small and Medium Enterprises in Greater Kampala Metropolitan Area was explained by variations in Information Technology Adoption practices. Under coefficients, it was established that Information Technology Adoption contributes positively and significantly to Growth of Small and Medium Enterprises in ($\beta=.511$, $p=0.000$). The Beta value of .511 shows that an improvement in information technology adoption by one unit leads to a 0.511 increase in the growth of small and medium enterprises. The constant value of 1.597 indicates that when information technology adoption is zero, growth of small and medium enterprises is equal to 1.597 which is also significant at 0.01 level.

4. DISCUSSION

According to this study's findings, it was revealed that information technology adoption positively and significantly affects growth of small and medium enterprises in greater Kampala metropolitan area ($p=.000$, $\beta=.511$). Simple linear regression results revealed that 42.2% (R Square = .422) of growth of small and Medium enterprises was explained by variations in information technology adoption. This study findings agree with Nuamah-Gyambrah et al., (15), who in his study to examine the role of ICT adoption and survival of SMEs also revealed that information technology adoption is important and helps any business including SMEs to survive in any competitive environment. These findings were not any different from Ghobakhloo et al., (16,17), whose findings revealed that SMEs were investing more in adoption of information technology as a crucial tool in the daily operations of their businesses, yet these practices have previously been in large enterprises. Same as this study's findings also is Shittu et al., (18), it was revealed that SMEs can improve their production capacity by tapping in the benefits of information technology adoption which help to facilitate and improve the growth of small and medium enterprises. This study's findings also conquers with Miraz & Habib (14) whose study revealed that today's businesses with a case in point of SMEs have been deeply influenced by application and widespread of information technology adoption. The adoption has information technology adoption increases commercial competitiveness which in turn leads to growth of these SMEs. In the same way, Albeshir (31), argued that, several studies should have a closer look at SME information technology adoption resources and their impact on their performance since they make a significant contribution to the existing knowledge on ICT adoption and growth of SMEs. Consistent with this study's findings, Liang, Kong, You, & Liu (32), maintain that information technology adoption can significantly improve organizational capabilities internally and externally which are key to growth of Small and Medium Enterprises. The effect of information technology cannot be overshadowed by other factors, this means that it does not only stop on being statistically significant. It can enhance performance and by raising a firms internal and external capabilities (16,17,32,33). Again, Selase, Comfort, Stanley, & Ebenezer (34), identified a positive relationship between internet technology and market performance. This is in a way of that internet technology use can improve the competitiveness by providing several chances to small and medium enterprises which may in the end race with large firms. Adoption of information technology by SMEs grants the competitiveness

and opportunities for growth if they are well implemented by the managers (15,17,32,34,35), whose findings are similar to this study's findings.

5. CONCLUSION

Consistent with findings of this study and previous studies on information technology adoption and growth of both large, small and medium enterprises, this study concludes that information technology adoption largely affects the growth of small and medium enterprises in greater Kampala metropolitan area. When SMEs take into consideration of the current technologies and put them into practice, they will have high chances of meeting their ultimate goal which is growth; this may be in terms of size, profits, sales, customer base, employees, capital base and many other corresponding constructs that measure growth. With such improvement, SMEs will probably be able to grow into larger enterprises in the long run.

6. RECOMMENDATIONS

Since it was also revealed that information technology adoption was significantly correlated to growth of small and medium enterprises and based on fact of this study that 42.2% of growth of small and medium enterprises was predicted by information technology adoption practices, this study recommends that, small and medium enterprises should take advantage of the new and improved information technologies across the industry to foster their growth and survival in the current competitive business environment by; always targeting to be the first to try out new technologies, buying and using up-to-date technology, having information technology policies, allocating funds for new technologies, buying and using new technologies to be ahead of competitors, purchasing quite a good number of up-to-date machines, taking employees to learn new technologies and serving clients using up-to-date technology.

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