African Journal of Emerging Issues
Peer reviewed | Double blind | Interdisciplinary

African Journal of Emerging Issues
(AJOEI)
Online ISSN: 2663 - 9335
Available at: https://ajoeijournals.org

ENTREPRENEURSHIP

THE ADOPTION OF TECHNOLOGY TO AN ENHANCED SME GROWTH; A SURVEY OF SMES IN AMUKURA TOWN, BUSIA COUNTY, KENYA

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Publication Date: July 2022

ABSTRACT

Background: The Small and Medium Enterprises (SMEs) play a vital role in uplifting the overall economic status of a nation in uplifting people's living standards and industrial development. The SME sector in Kenya contributes over 70% of new jobs created annually. Most research on SME growth had concentrated on external factors influencing them like infrastructure. Little research considered the effect of internal factors on SME growth. Therefore, this article gives the positive effect that adoption of current technology as an internal factor, has had to an enhanced growth of SMEs. The study is important to entrepreneurs who would wish to grow their enterprises through the adoption of varied technology within their reach.
Methodology: A survey of 56 SMEs in Amukura town was conducted using a descriptive research design that found out that there is a significant correlation between the adoption of technology and the growth of SMEs.
Results: Further, the various kinds of technology like, use of internet, computers, mobile money transfer among others had individually and collectively enhanced growth of enterprises. It is worth noting therefore that those enterprises that embrace the current technological advancement are bound to experience a quick growth as compared to those that do not. Entrepreneurs should, however, be careful in adopting a certain kind of technology based on their capacity to have them and also based on its applicability on that particular locality and industry if they are to achieve a competitive advantage over others.

Keywords: *Adoption of technology, Small and Medium Enterprises growth, self-service technologies, Enterprise, Amukura*

INTRODUCTION

Technology is considered to be a great ingredient to the growth of small and medium enterprises. Since the advent of industrial revolution, technological advancement has been on a higher trajectory. The world is also growing at a faster pace to be at par with technology and is not any different on the SME growth. Enterprises have opted to embrace technology for efficient and effective service delivery in their operations and transactions. More customers continue to interact with self-service technologies like automated teller machines (ATMs), mobile banking, internet services and automated accommodation checkout as compared employee service.

As much as there has been extensive research done on the effect of technology to the growth of SMEs, the emphasis has been on the external basis. How technological advancement holistically affected the pace of economic growth (Lecerf & Omrani 2020; Sroufe 2017; Yunis et al. 2018). There's need to know why this available technology is at the disposal of all enterprises in a locality but some of the enterprises benefit of it more than the others. The increasing dependance on self-service technologies presents the need for study among the SMEs internally in order to take advantage of this direction customers are focusing in as regards to service acquisition.

Little study has been conducted to specifically know how this technology has internally contributed to the growth of particular enterprises as regards to a positive attitude towards these technologies and embracing them at whatever cost because they contribute to the overall goodness. For example, the internet enables many customers to make transactions like ordering products without physically having to visit a retail outlet. It is therefore evident that the technological advancement and its adoption will continue to play a central role as regards to customer enterprise relations. This is a game changer for those who have internally embraced it since it results to more transactions and ultimately sustained enterprise growth.

The main purpose of this study was to investigate Amukura town SMEs' adoption of the current technologies, how the customers were using self-service technologies and also how the technology had given them a competitive advantage over others to ensure their growth. More specifically, the study aimed to achieve the following research objectives:

i. To determine whether most of the SMEs had adopted the various kinds of current technology that are available.
ii. To determine whether most customers are using self-service technologies.

iii. To determine whether the adoption of the current technologies had given the enterprises a competitive advantage over others.

iv. To investigate whether the use of current technology had enhanced the growth of SMEs.

The remaining part of this article is organized as follows: the literature on the adoption of technology has been reviewed, followed by the brief description of the research methods and techniques, the findings of the study and discussions. The article concludes with conclusions and directions for future research.

LITERATURE REVIEW

In the current competitive world brought about by the industrial revolutions, any business venture would not survive in the industry without an upgrade to the current and new ideas in terms of the adoption of technology. Therefore, embracing technology is very beneficial to the realization of enterprise mission objectives and ultimately the growth of the enterprise. With the current pace at which the world is moving, the adoption and application of technological advancement will definitely lead to the most effective and efficient utilization of the available economic resources. This will increase the enterprise productivity and profitability and thus ensuring enterprise growth. Technology in itself is the application of scientific language especially advancement in computer machinery hardware and software in the industrial sector and mostly the engineering aspects. This technical knowledge can also be applied in all other walks of life including the socio-economic and cultural environment.

According to Lecerf and Omrani (2020) in their study "SME internationalization: The impact of information technology and innovation' adoption of technology is vital to the growth and development of SMEs as technology transforms new ideas into economic solutions giving an enterprise an added competitive advantage over other enterprises in the industry thus ensuring sustainable growth. The impact of technology on an enterprise has been proven to have the greatest advantage as it helps to generate products and services aligned to the customer needs in an efficient manner. The culture and relationships of an enterprise have an impact on the adoption of technological infrastructure.

Technology has been a major contributor of the enterprise's competitiveness in developing and integrating business strategy. Crick (2019) conducted a study on Moderators affecting the relationship between cooperation and company performance. He found out that technological strategy plays a key role in determining enterprise performance in technology-driven industries.

Sroufe (2017) conducted a study on Integration and organizational change towards sustainability and found out that most enterprises had created websites where they can post all the relevant information relating the SMEs for their customers to easily have access to them. Given that SMEs have market connections both domestic and global, they market their products and services using these websites. When these products and services are sold, these SMEs adopt an online banking service for the purpose of payments having been enabled through the adoption of technology. Automatic teller machines have also enabled customers and suppliers to conveniently access their accounts at all places around the world in order to execute e-money transactions like cash transfers and payment of bills.

According to Yunis et al. (2018) in their study of the role of ICT and innovation in enhancing organizational performance, the catalyzing effect of corporate entrepreneurship, they deduced that ICT can play a bigger role in the reduction of transactions costs, improved acquisition of appropriate technical and business skills for enhancement of productivity, expanded markets and the supply chain, and improved dissemination and acquisition of timely and usable knowledge to the accomplishment of mission objectives of the enterprises.

The relationship and the link between the infrastructural development and the SME growth is evident in most aspects. The improved infrastructural development has been found to have enhanced the economic productivity of the various enterprise ventures. When the enterprise has advanced technological infrastructure, with an appropriate human resource, trained and equipped with requisite skills capable of effectively and efficiently utilizing the technology, then the enterprise is bound to produce at an averagely greater level. In a nut shell, the better the infrastructure in terms of technology, the more opportunities for the company to perform successfully (Lecerf & Omrani, 2020).

RESEARCH METHODOLOGY

Amukura town had 224 SMEs duly registered and operational as at December 2021. The researcher employed purposive sampling technique to obtain data from 56 SMEs out of 224 SMEs. Each of these sampled SMEs had one participant in the study, especially those heading the Information Technology department or its equivalent. Therefore, the target population of study was 56 Information Technology departmental heads or their equivalents from the sampled 56 SMEs operating in Amukura town. For descriptive research design, in order to get favourable results, the sample population should at least be 30 elements (Siedlecki, 2020). In this regard,

census was used to increase the objectivity of the study and reduce the chances of biasness since it was a non-probability method, where out of target population of 224 SMEs, 56 SMEs were selected to participate in the study using purposive sampling technique.

The IT departmental heads were selected in each SME because they were personnel considered to be privy to detailed information on their departments and therefore would give good analysis of their organizations and how the various stated technological aspects were having an impact on the growth of their enterprises.

Self-administered questionnaires were used in the study as the major data collection tool from the respondents, who were given up to one week to respond to the questionnaires after exchanging their telephone contacts with the researcher. Where the researcher felt that there was need to provide guidance on completion of the questionnaires, researcher promptly assisted the respondents on that. The researcher used the services of a research enumerator to make a follow-up on the administered questionnaires. A self-administered questionnaire was physically handed over to the sampled 56 IT departmental heads as opposed to mailing them so as to increase the response rates. At the expiry of one week, the questionnaires were physically collected from the respondents. Out of the possible 56 respondents, only 48 respondents were able to completely fill the questionnaires as required. This represents 85.7% response rate and therefore considered a convenient sample. This is in agreement with Kazdin (2021) that a response rate above 55% qualifies the gathered data sufficient to generalize the opinions of respondents in the study population as regards to the study problem.

The questionnaire was pre-tested using a convenience sample of ten respondents from ten SMEs randomly sampled from Busia town on April 4, 2022. The pilot study assisted the researcher to have an insight of how the questionnaires' expected results were to be obtained. The reason behind a pilot study was not in testing the research hypotheses but the research protocols, data collection instruments, various strategies employed and other aspects of the study in readiness for the larger research study. The pilot study also tested the validity and reliability of the questionnaires as designed to collect data for the study. Out of the ten questionnaires which were issued to those SMEs' employees, the researcher received nine of them that were responded to.

The Likert scale was used to provide for the descriptive statistics for each of the research variables. The respondents were asked to indicate the extent to which they agreed or disagreed with the various aspects of adoption of technology on growth of SMEs. Likert scale was used ranging from

1 to 5 in linear manner indicating the extent to which the respondents either agreed or disagreed with how those various variables had impact on the growth of SMEs. The scale used was as follows; 1 = Strongly Disagree, 2 = Disagree, 3 = Neither Agree nor Disagree, 4 = Agree, and 5 = Strongly Agree. Thereafter, the summary of means and standard deviation of variation of the study variables were computed to determine the trend.

FINDINGS

The advancement of technology brought about by the industrial revolution has definitely contributed to the ease way of doing business holistically. In line with the study objectives, the respondents indicated the following on the various aspects of technology that had an effect on the growth of their enterprises as shown in the Table 1 below.

Table 1: Adoption of Technology

Adoption of Technology	Mean	Standard Deviation
The enterprise has high innovation in product improvement	3.857	0.247
The enterprise has incorporated technology	4.634	0.213
Technology has enhanced accountability in the enterprise	4.318	0.190
Technology has led to quick service delivery	4.403	0.204
Technology has given the enterprise a competitive edge	3.871	0.367
The enterprise is well linked to electronic cards/ATMs, Mobile phone transfer and M-Banking	4.552	0.221
Adoption of Technology and Innovation has led to growth of enterprise	4.743	0.183

The results presented above show that there is a very strong approval that the adoption of technology had led to the substantial growth and development of SMEs as indicated by the mean of 4.743. The growth of enterprises was evident across all the forms of business ownership with the leading in wholesale traders and the service industry. Even in the retail traders, though lower

compared to the others, was still very substantial. This can be ascertained by the smallest number of 0.183 in the standard deviation.

The various aspects of technology which had the strongest contribution to the growth of SMEs included the ability of these enterprise to embrace technological advancement in the use of computer technology and the employment of self-service technologies like the adoption of electronic cards, mobile transfer services and payments, and Mobile-banking. This incorporation of technology had enhanced accountability in management of resources and also in tracking the business transactions. Ultimately, this has improved service delivery to the customers and also improved efficiency and effectiveness in management of personnel and utilization of the available resources. The respondents were almost unanimous in this opinion given that the standard deviation on all these aspects was very small.

On the downside, there was a little bit shaky approval on the enterprises effort in product improvement as regards to innovation (3.857). This was brought about by enterprises not putting much emphasis and resources toward improving their products out of consultancy and benchmarking with other established outfits within the industry. The other factor on the downside was that the kind of technology employed by these enterprises did not give them a greater competitive advantage over the other enterprises. This was majorly because the kind of technology applied by almost all the enterprises within Amukura town, was similar to each other, mainly M-pesa service. Though this data was widely spread as shown by a standard deviation of 0.367 because those enterprises that used a unique technology had received a greater competitive advantage as opposed to the others, using the similar technology within that locality.

Correlation analysis

Pearson correlation technique was used to conduct correlation analysis in order to determine the relationship between adoption of Technology and growth of SMEs and the results were as indicated in Table 2 below.

Table 2: Correlation

		Growth of SMEs	Adoption of Technology
Pearson Correlation	Growth of SMEs	1.000	
	Adoption of Technology	0.625	1.000

Pearson product moment correlation coefficient was computed and the results indicated that there was a positive correlation between adoption of technology and growth of SMEs as shown by; r = 0.625 and p = 0.000. The p-value was less than 0.05 and therefore, adoption of technology variable was significant for the study.

Regression analysis

Regression analysis was conducted in order to find out the strength of the relationship between adoption of technology and growth of SMEs and the results were as shown in Table 3 below.

Table 3: Regression

Model	R	R-Squared	Adjusted R-Squared	Std. Error of the Estimate
1	.625	.391	.387	.30254

The regression analysis results shown above indicated that the adoption of technology variable had a positive correlation on the growth of SMEs. The R^2 value of 0.391 showed that 39.1% of positive growth in SMEs was due to the contribution of adoption of technology to those respective SMEs while 60.9% growth was due to other factors not explained by this model.

Analysis of Variance (ANOVA)

Analysis of variance was conducted to determine the significance of the model for fit of use in determining the relationship of these variables and the results are as shown in Tables 4 and 5 below.

Table 4: ANOVA

Model		Sum of squares	Df	Mean Square	F	Sig
1	Regression	16.416	1	16.416	104.561	.000
	Residual	25.568	163	0.157		
	Total	41.984	164			

Table 5: Coefficients for Adoption of Technology

Model		Unstandardized Coefficient		Standardized Coefficient		
		B	Std Error	Beta	T	Sig
1	(Constant)	1.214	0.278		4.366	0.000
	Adoption of Technology	0.616	0.041	0.625	15.024	0.000

The computed F-value of 104.561 was found to be more than the F-critical value of 3.94 and therefore, the model $Y = 1.214 + 0.616X_2$ was found to be significant and therefore fit for prediction. Additionally, the computed T-value of 4.366 was found to be more than the T-critical value of 1.92 leading to the conclusion that the adoption of technology was significant in influencing the growth of SMEs.

SUMMARY OF FINDINGS

It is evident that there was relatively very strong positive relationship between the adoption of the current technology to the growth of SMEs. The respondents concurred that their enterprises had a very positive attitude that drove the need for them to embrace the new technology such as the use of computers and the adoption of self-service technologies like the use of electronic cards, mobile money transfer services and payments, and M-banking services. It was also found out that the customers were switching from the traditional customer enterprise employee relationship to the self-service technologies at a faster rate. The use of technology had enhanced service delivery and

accountability in management of resources and also in tracking the business transactions. Therefore for those that had embraced this current technology had a great competitive advantage over others. Overall, technology had improved efficiency and effectiveness in management of personnel and utilization of the available resources which ultimately led to the growth of SMEs.

DISCUSSIONS

Since the industrial revolution era coming into being, the world at large has successfully and consistently achieved a higher trajectory on the path of technological advancement. Due to this technological advancement and its applicability, the world has become a global village not only in matters to do with trade and communications, but in all other aspects of day-to-day wellbeing. This technology has taken different forms like; computers, information technology, internet, electronics, among others.

This study shows that there is a very strong positive relationship between the enterprises adopting the various forms of technology that are available to the SME growth. Most of the enterprises in Amukura town had embraced new technology and had acquired them at all cost because of the benefits that come along with them. The new technologies that have been embraced included the use of computers, internet and other self-service technologies. The use of computer technology had improved efficiency at work since tracking of business operations had been made much easier. This tracking would translate to the identification of the business strengths and capitalize on them while at the same time the identification of the enterprise weaknesses that need to be fixed promptly.

The use of self-service technologies like use of credit cards, mobile banking, mobile phone money transfer like M-pesa services had made the payment of business transactions very easy. Customers are able to carry out business transactions involving larger sums of money without having to physically handle the cash amount. This in essence uplifts the safety of both the customers and the enterprise itself because there is very little exposure of cash to burglary and robbery incidents. Also, just in case one loses his/her credit card, M-pesa phone or any other gadget enabling self-service, then there are several safeguards like the PIN number restrictions to ensure that there is no easy access to the cash from them when in wrong hands. This is the prime reason as to why there is a high trajectory in the usage of self-service technologies.

The internet service has made it possible to do online transactions and this has been very key in the purchasing and procurement department. All these technological aspects have increased

efficiency of doing business and therefore, accomplishment of the enterprise mission ideal for its growth. This is in agreement with Crick (2019) in his study on Moderators affecting the relationship between cooperation and company performance, found out that technological strategy plays a key role in determining enterprise performance in technology-driven industries by way of improvement on efficiency in doing business.

The study also found out that those SMEs that had embraced the use of new technology had accumulated all the benefits derived from this technology to their businesses and there had a competitive advantage over other enterprises. This competitive advantage had come in the form of increased production, better communication between the enterprise and its customers, increased sales and profits, among other benefits. This concurs with Lecerf and Omrani (2020) in their study of SME internationalization, the impact of information technology and innovation, in which they showed that technology transforms new ideas into economic solutions giving an enterprise an added competitive advantage over other enterprises in the industry thus ensuring sustainable growth.

Finally, having seen all these benefits that have been derived from the use of technology towards the enterprise accomplishing its mission objectives and goals, and also improving service delivery to the customers in an efficient and effective way, it can be concluded that the adoption of technology has a great contribution to the growth of SMEs.

CONCLUSIONS

The study concludes that the adoption of technology by the enterprises in their operations is very key to the overall growth of SMEs. In this perspective, the SMEs are required to be at par with current pace the world is moving in terms of technological advancement. That the enterprises should embrace the current technology in varied forms so as to tap the benefits derived by the use of them in relation to their mission accomplishment, increased production and profits, and ultimate growth of SMEs. When these benefits of technological use become part of the enterprise, then they will have competitive advantage over others which will translate to their growth. This even becomes more pronounced when the SMEs employ the varied forms of technology to give customers a range of choices applicable to them.

RECOMMENDATIONS

For the SMEs to have a substantial growth, they have to embrace the use of current technology in all their operations. For those enterprises to gain competitive advantage over others in the same

industry, then they have to diversify the various forms of technologies available. It was evident that most SMEs had embraced a certain type of technological application like M-pesa mobile money transfer. This study therefore recommends that the SMEs should adopt the varied forms of technology so that the customers have choices to make on those SMEs with technologies that suit them. This is especially on the varied types of self-service technologies. It is also recommended that the government and other telecommunication companies like Safaricom should fast track the connectivity of high-speed internet network to all areas of the country so that SMEs can effectively utilize the varied forms of technology that go along with that kind of internet connectivity.

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