

Digital Transformation as A Source of Competitiveness among Small and Medium Enterprises in Nairobi City County, Kenya

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Abstract

Digitalization of business units is more pronounced to small and medium enterprises in developing countries that have to compete with both large and small firms from developed world in equal times - courtesy of globalization. SMEs in the developing countries need to therefore come up with appropriate internal strategies, such as digitalization of services, in order to remain competitive. The objective of this study was to investigate the influence of digital capability on the competitiveness of SMEs in Nairobi City County, Kenya. Descriptive survey design used employed both systematic and random sampling procedures. Data was collected using structured questionnaires containing both open and close-ended questions. The predictor variables were digital sensing capability, digital enabled strategy, digital seizing capability and digital resource management. The study found that digital sensing capability has a positive and significant impact on competitiveness of SMEs since the competitiveness of the firm had improved due to the SME capacity to serve customers better. The study further found that developing a digitally enabled growth strategy and mind-set contributes to the overall organization competitiveness by a factor of 0.206 with a significance coefficient of 1.3% which is less than the 5% significance level. Based on the capacity to seize opportunities in the market, the study findings revealed that there is a positive correlation (coefficient factor-0.097) between capacity to seize opportunities and SMEs competitiveness. It was also established that managing resources for digital transformation has a contributing factor of 0.157 towards the overall organizational competitiveness. Therefore adequate resources are allocated to the digitalization of process initiatives. From the empirical results, it is evident that digital transformation has a positive and strong correlation with SMEs competitiveness ($R=0.727$). The findings also shows that the digital transformation constructs studied contributes 52.9% ($R\text{ square} = 0.529$) of the overall SME competitiveness. It is therefore imperative that digital transformation has a moderate and positive impact on organization competitiveness and that market opportunities are seized better using digital measures.

Key Words: Digitalization, competitiveness, small and medium enterprises

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I. Introduction

The need for businesses, both small and large, to adapt to the changes in the business environment has become more compelling in the 21st century than in the 20th century. Globalization has made the world a small place forcing more entrepreneurs to venture into ways of breaking the business ground and increasing enlightened customer base that expect better and less costly service. With such a dynamic business environment, it has become evident that exploring digitalization of business operations would be one of the ways to increase firm competitiveness (Probst, et al., 2017). Digitalization of services is part of a heterogeneous universe of diverse strategies to an organization and whose characteristics can be adapted depending on the business sector and the number of partners along the supply chain. Similarly, Ling, Simsek, Lubatkin and Veiga (2016) reinforce that the nature of the digital transformation that an organization pursues would depend on the nature of products they produce and how involved and connected they are to the macroeconomic context and support institutions. Digitalization of businesses can generate varied capabilities, which according to North, Aramburu and Lorenzo (2019) include the capability to sense business opportunities easily, develop digital strategy, be able to seize digital growth potential and facilitate digital resource management.

Ollo-López and Aramendia-Muneta (2012) explained why firms are digitizing their systems, stressing that Information on communication Technologies (ICT) affects the competitiveness of organisations and enterprises, while ICT-adopting corporations appear to do well on the market by differentiating goods and services. Therefore, digitalizing processes has a beneficial influence both explicitly and indirectly on profitability, depending on the business and has tremendous potential to promote a sustainable growth. Pursuing the same line, Hamill, (2015) expound that digitalization of business facilitates faster planning that is based on the identified opportunities, improved communication with and feedback from customers and enhances the capacity to react faster to any emerging changes in the market (Hamill, 2015). Similarly, Rogers (2016) assert

that digitalization of businesses affects their capacity to utilize available human resource skills and enhance digital technology security on the firm processes and protects the initial investment to a new project (Rogers, 2016). Digitalisation of a business process can affect its competitiveness, because a successful competitive operation of an enterprise must always be based on the continuous renovation of production process or service delivery procedures. This path informs the strategy and ability to make use of the resources available to satisfy external and internal customer's diverse needs through growing flexibility (Moran & Brightman, 2009)

Despite recognizing SMEs as the engines through which the growth objectives of the developing countries, they lack adequate resources to compete effectively with large multinational firms that have entered into the local markets and in some cases offer similar products and services but at a more competitive position than the locally manufactured products (Bharati & Chaudhury, 2015). SMEs also have higher potential to create employment, create wealth and develop innovation in many developing countries. With all these observations, it is critical that the SMEs embrace new operational strategies that enhance their competitiveness level in the face of increased competition and thus be able to play their increasing important role in national economy. One of these strategies that could be affecting the competitiveness of the SMEs is the digitalization of their operations.

It has been enumerated that one of the internal resources that when adopted and applied appropriately influences the organization outcomes is the adoption and use of ICT (Higon, 2011, Steinfield, LaRose, Chew, & Tong, 2012). The importance of digitalization of business units is more evident to SMEs in developing countries that have to compete with both large and small firms from developed world in equal times - courtesy of globalization. However, despite the enumerated advantages of digitalization of business operations such as cost reduction, improved communication with customers, ability to respond quickly to changes in the market and improved, innovation capability, Madichie, Mpofo and Kolo (2017) observe that SMEs in developing countries have not embraced digitalization process and therefore lag behind in reaping the benefits.

In Kenya for example, according to the Kenya National Bureau of Statistics Survey (2018), SMEs contribute around 20% of the GDP and employment of about 75% of the workforce. Despite the importance of this category of business, it is evident, according to Kamunyu and Theuri (2017) that the SMEs in Kenya need support to embrace digitalization in their processes if they need to compete effectively and play their important role in the national economy as well as growth of their individual economic status. Inadequate digitalization has also been identified by Foster, Graham, Mann, Waema and Friederici (2018) as a major reason of the SMEs in East Africa registering minimal presence in the global value chain. This is despite a backdrop of improved connectivity of the internet in the East African region over the last decade. It is on this basis that this research sought to investigate the effect of digital capability on the competitiveness of SMEs in Nairobi City County, Kenya.

The purpose of this study was to determine the effect of digital capability on the competitiveness of SMEs in Nairobi City County, Kenya and the specific aims were to investigate the capabilities of digital adoption in SMEs and to establish how these capabilities influence the digital competitiveness of these SMEs

II. Literature Review

This research presents some of the theoretical aspects related to digitalization of businesses and its effect on competitiveness.

There has been different school of thoughts with regard to what constitutes the digitalization in organizations with some scholars considering small technological change such as the deployment of a new ERP system as digital transformation (Kavadias, Ladas & Loch, 2016; Janowski 2018) while some equate digital transformation to be business models (Berman, 2012) (Berman, et al., 2016). However, these different schools of thought agree that in order for the digitalization process to be successful in a business organization, there need to be proper coordination and harmonious technological integration across the organization since digitalization failures is usually the product of either uncoordinated deployment or a lack of participation by organizational leaders (Westerman, et al., 2014).

Commenting on the value of digitisation for business organizations, Manochehri, Al-Esmail and Ashrafi (2012) called the effect of the ICTs on small business activities and considering ICTs to be a necessary factor in order to enable effective use of global markets. The importance of digitalization of businesses was further highlighted by MIT Sloan Management (Fitzgerald, et al., 2013) finding that 78 percent of the managers in different industries believe it is important for their organizations to achieve digital transformation. However, in a later study from Harvard Business Review Analytics Services (Business, 2014) 50% of business and technology leaders already have new technology-enabled business opportunities missing from their organizations.

Foster, Graham, Mann, Waema and Friederici (2018) examined the digital control in value chains of East African firms with specific aim to investigate whether the internet connectivity experienced in East African Countries had resulted in improved access to markets and increased efficiency. The research adopted a case study where tea, tourism and business process outsourcing firms were investigated with the findings revealing

that despite the improved internet connectivity, small number of African producers have been integrated to the global value chain. Thus internet connectivity in the East Africa has not translated to improved benefit to African firms in the global value chains. This findings however differs to the World Bank (2016) results which suggest that the improved internet connectivity had resulted in better business opportunities for the small businesses.

Ndung'u (2018) examined the next steps in digital revolution in Africa with specific reference on its effect on inclusive growth and job creation lessons from Kenya. The researchers employed a case study research design in which the data was evaluated using content analysis. The results shows that digitization of Kenyan SMEs had resulted in employment creation across the economy through the entry of Fintechs. Furthermore, digitalization has created opportunities, enhanced demand for different specific skills within and outside an organization, making it harder to align workers and abilities and thereby growing labour efficiency and consequently enhancing productivity of the human capital. The experience from Kenya also shows that the access to credit has improved through virtual micro-credit products developed by financial institutions.

As explained in details by Sarel and Marmorstein on the perceived importance of digitisation by embracing mobile marketing stress that mobile marketing interest of SMEs is dependent on performance, operation benefit and resources and non-monetary sacrifices (Sarel & Marmorstein, 2003). In relation to Wang (Wang, et al., 2006), mobile marketing enhances the perception of consumer needs via customer input and value assessments through page visits, as well as the potential to manipulate customer perceptions and views of service via good contact with one another. In addition, Thrassou and Vrontis (2006) explains that mobile marketing allows for mass communications, a move that affect publics' and secondary collaborators' impressions as well. In the same line, Afanu and Mamattah (2013) highlighted that digitalization of process and thus mobile money allows endorsers to bank straightforwardly from their cell phones without a physically visit to a financial institution. Exchanges of money and virtual transaction take place through a mobile wallet that is present in the cell phone.

In recognition of the low rate of digitalization of business in Kenya, Kariuki, Karugu and Opiyo (2018) investigated the challenges facing digitization of Projects in Kenya with regard to the application of land management information system (Kariuki, et al., 2018). The report zeroed on the problems of the Lands, Housing and Urban Development ministry. The study focused on the detailed analysis nature of the ministry's staff as well as program vendors by integrating qualitative and quantitative study method. The results identify the main challenges the National Land Information Management System (NLIMS) is facing in regards management, budget support and ICT infrastructure, because of their considerable influence and because stakeholder involvement in the implementation phase was not identified as the challenge. This findings is contrary to that of Manochehri, Al-Esmail and Ashrafi (2012) who while investigating the impact of ICT on enterprise practices in Qatar found that effective communication with both internal and external stakeholders

The adoption of mobile technology in a company offers numerous opportunities to address the weaknesses and objectives of SMEs, such as improvements in organizational performance, reductions in operations and paperwork, improved task quality and accuracy. Along the same lines, Ajagbe, Olujobi, Udo and Uduimoh (2016), find that mobile technology enhances decision-making, relationship, coordination at institutional level as well as customer services and improves linkages between customers and suppliers of goods. Mobile communication compresses time and space making it easier for entrepreneurs to expand beyond regional boundaries (Solomon *et al.*, 2014) which in an earlier study Sarrafzadeh (2009) noted that mobile technology eliminates geographical boundaries and enhances business relationships, economic.

III. Research Methodology

The research adopted a cross-sectional survey and descriptive design. This design was deemed appropriate because it facilitated the establishment of the current situation of the research unit of measure and analysing such conditions. A cross-sectional research was appropriate in this study because the research was undertaken across all SMEs in Nairobi County, Kenya, all at the same period. This facilitated the collection of data at the operating condition that was free of business operating environmental factors that might give affect the respondent's position on the research objective. The population of the study was the 6,295 licensed SMEs under the jurisdiction of the Nairobi county government and the data was generated from the 2019 licensing report. Out of this number, 4,836 were small enterprises while 1,459 were medium size enterprises. Stratified sampling techniques were employed to select the sample firms having used to set the sample size of 98 firms.

Primary data was collected by the use of a questionnaire coupled with informal interviews on the open ended questions. The data collected was sorted, coded and input in SPSS V.22.0 for production of graphs and generation of table. The analysis was based on descriptive measures of mean and standard deviation. A regression model was used for establishing the relationship between the digital capabilities and competitiveness of the SMEs. More specifically, the regression was of the form;

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \epsilon$$

Where Y = Organizational Competitiveness
 β_0 = Constant
 X1 = Digital sensing capability
 X2 = Digital enabled strategy
 X3 = Digital seizing capability
 X4 = Digital Resource management capability
 ϵ = Error Term

The study used linear regression analysis to establish the relationship between digital capability and competitiveness of SMEs and how these capabilities have affected the firms competitiveness.

IV. Results

4.1. Model Summary

To evaluate the amount of variation in the SME competitiveness that can be explained by the digitalization capabilities, the coefficient of determination was used. The results are presented in Table 1.

Table1: Summary model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.727 ^a	.529	.503	.465

^aPredictors: (Constant), Resource, Sensing, Enabled, Seizing

From the results, the R coefficient is 0.727 which shows that digital transformation and SME competitiveness are positively and strongly correlated. In addition, the R²coefficient is 0.529 implying that digital transformation dimension considered in the study contributes 52.9% of total SME competitiveness. Therefore 47.1% of the SME competitiveness is attributed to other factors not covered in the study.

In assessing whether the model with the four independent variables can significantly predict the behaviour outcome, the F-statistic from the ANOVA was used, and the results are reported in Table-2.

Table 2: Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.928	4	4.482	20.768	.000 ^a
	Residual	15.970	74	.216		
	Total	33.899	78			

^aPredictors: (Constant), Resource, Sensing, Enabled, Seizing

^bDependent Variable: Competitiveness

From the study results in Table-2, F-statistics results reveal that the independent variables; digitalization capabilities (Resource, Sensing, Enabled, Seizing)significantly predict the levels of SME competitiveness in Nairobi County ($F= 20.768, p < 0.05$).This therefore implies that we reject the null hypothesis and conclude that the average value of the dependent variable is not the same for all the four groups. The model therefore best fit the regression data. A significant F-Value indicates that the results of the regression are indeed true and not the consequence of chance.

To assess the significance of the multiple regression coefficients between the explanatory variable and predictor, the t-test for regression coefficients and the standardized beta values were used. The unstandardized regression coefficients, the standardized beta coefficients and t-test values are presented in Table-3.

Table 3: Coefficients of regression analysis

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	.946	.352		2.690	.009
	Sensing	.361	.077	.446	4.680	.000
	Enabled	.206	.081	.232	2.531	.013
	Seizing	.097	.086	.105	1.136	.260
	Resource	.157	.090	.170	1.740	.086

^aDependent Variable: Competitiveness

To test the statistical significance of the regression coefficients, the research employed *t*-test together with the *p*- values as evidenced in Table-3. In testing the significance of the sensing capability among the SMEs (X1) coefficient, *t*-value of 4.68 was obtained and since $p=0.000$, the study concludes that there the variables is statistically significant. Similarly, digitally enabled strategy was found to be significant with *t*-value of 2.531 and $p=0.013$ implying that it significantly affects the competitiveness of the SMEs. However the seizing capability and resource management capability was found to be insignificant with $p=0.260$ and $p=0.086$ respectively.

As a result, the final regression that explain the relationship between digitalizationcapabilities and the competitiveness of the SMEs can be revised as follows by eliminating the insignificant variables;

$$Y = 0.946 + 0.361X_1 + 0.206X_2$$

V. Conclusion and Recommendation

The study found that digital capabilities had a positive effect on the competitiveness of SMEs. Adoption of appropriate digital technology by SMEs is able to use ideas from customers to meet the market demand and that the resultant technological innovation that is customer oriented enhances customer satisfaction since it meets the customer demand through enhanced customer feedback and quick address of the feedback. The study found that the organizations develop digitally enabled business models thus spearheading the organization towards sustainable competitive advantage. SMEs can easily deploy organization digital capacity whenever a need arise since the framework is already in place. The results reveal that the ability of the digital media to reach a wide consumer base was realized as an important capability that the SMEs had been availed. Consequently, it is concluded that business organizations come up with effective social media strategy that can enable them reach a wide market at the same time at a much less cost compared to the traditional marketing options. Employment of an employee dedicated to handle the social media marketing strategy will go a long way in actualizing the same.

The conceptual framework limited the researcher to four constructs or variables. The study focused on four main digitalization dimensions whereas there might have been more variables that could have given better results. With the aggregate contribution of 52.9%, it therefore implies that there are other factors that enhance competitiveness of SMEs. The study thus recommends that SMEs should put together coordinating factors that are related to digital transformation in order to realize better results or adopt frameworks that have more concepts.

The study proposes further research to be done on the relationship between digital transformation and competitiveness of SMEs in different regions in the continent that has never been done before. This research focused only in Nairobi County, there are different SMEs in different regions within the country that may be subjected to the same findings obtained in the present study but it is subject to confirmation through research study. More so, the SMEs in other regions operate under different policy and regulations of county government hence the findings of the present study may not be generalized and used in drawing reference to firms in different regions. The study also suggests that future studies should focus on more independent variables in order to see whether the impact on competitiveness will be more. Also different frameworks that explain how digital transformations contribute to competitive advantage of SMEs should be exploited so that the other variables contributing to this are noted.

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