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Muchiri, J., & Juma, J.

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[1] Muchiri, J., & [2] Juma, J.

[1] Master Student, Jomo Kenyatta University of Agriculture and Technology [JKUAT], Kenya
[2] Lecturer, Jomo Kenyatta University of Agriculture and Technology [JKUAT], Kenya

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ABSTRACT

Competitive performance of the manufacturing sector remains the lifeblood of an economy considering critical role it plays in a country's long-term prosperity. Despite the increased awareness about the essence of organizational capabilities, it is witnessed that the dynamics in the business environment still presents fresh daily challenges to the manufacturing sector. In addition, manufacturing firms in Kenya have not found a way to exploit this conjuncture, and are not sufficiently competitive with new market requirements. It is in this regard that this study was designed to analyze the role of organizational capabilities by singling out Information Capabilities on Competitive Performance of manufacturing firms in Kisumu City. The study was guided by the following research objective; to examine the role of information technology capabilities on the competitive performance of manufacturing firms in Kisumu city. This study relied on resource-based view and Porters generic theories. In a bid to effectively achieve this, the study adopted a cross-sectional study design based on samples drawn from across the existing manufacturing firms within the city of Kisumu. The target population included operations managers and supervisors of the manufacturing factories. These were systematically selected by use of census inquiry. The operations managers and supervisors were purposively selected. Data was collected by use of a questionnaire from the respondents and analyzed by use of both inferential and descriptive statistics using SPSS version 25. From the findings Information Technology Capabilities had an impact on Competitive Performance of manufacturing companies in Kisumu. This implied that Information Technology Capabilities remains a strategic pillar for competitive performance in the manufacturing sector. The study concluded that there is need for the manufacturing companies to strategically invest their resuorces to enhance their information technology capabilities for competitive performance.

Key words: *Information Technology Capabilities, Organization Capabilities, Competitive Performance*

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INTRODUCTION

Organizational capabilities are conceptualized as a firm's ability to build and/or extend basic capabilities to deal with changing environments (Inan & Bititci, 2015). Strategic capability includes resources and competences that a firm utilizes to compete in its business environment (Akter, Wamba, Gunasekaran, Dubey & Childe, 2016). It can therefore constitute a firm's strengths and weaknesses, and be a source of competitive advantage or disadvantage over its rivals. Therefore, organizational capability is the ability of an organization to build unique and distinctive competences so as to provide products or services to customers that are superior to competitor`s offerings that become the basis of a lasting competitive performance (Pearce, 2011). In general terms technology, product development, production processes, marketing, logistics, and managerial skills can be counted as organizational capabilities (Day, 1995; De Sarbo, 2005) as cited in (Seyhan, Ayas, Sonmez & Ozlem, 2017).

IT capabilities are the multifaceted bundles of IT resources which enable firms to coordinate business activities efficiently through the mobilization and deployment of these IT-based resources, hence improve various firm performance indicators (Nevo, Wade, & Cook, 2010). IT capability is a multidimensional construct which encompasses both the technical and organizational dimensions. IT capabilities have four sub-dimensions as IT infrastructure, IT business experience, IT relationship resources and IT human resources (Bakan & Sekkeli, 2017). Porter (2008) also proposed positive contribution to firm performance by IT, by facilitating customer online access to firm's information on products, services, prices and online purchases. The extant literature shows the significant positive relationship between IT capabilities and business performance; however, this relationship has not been studied thoroughly and the underlying mechanism through which IT capabilities influences the performance of the firm is not yet clear (Rehman, Nor, Taha & Mahmood, 2018). Numerous studies have documented the positive effects of IT capability on organizational performance but our knowledge of the processes through which such gains are achieved remains limited due to a lack of focus on the business environment (Chen, et al., 2014). Besides Previous empirical studies examining this relationship in the context of developed economies have reported mixed results, and there is a dearth of studies in the context of emerging economies (Majhi & Mukherjee, 2019).

Bakan and Sekkeli (2017) studied the impacts of IT Capability and its four sub-dimensions on the firm competitiveness at the logistics sector in firms in the 9 cities of Turkey. The data was collected from the national industry of logistics service providers associated in the international forwarding associations UND by questionnaire method. 450 questionnaires were distributed, 428 of them was returned (a response rate of 95%). All data was analyzed by SPSS programme. First of all, demographic characteristics of the respondents were presented by the frequency analysis. Then correlation analyze was used and it was found significant and positive relationships among IT Capability, its four sub-dimensions and competitiveness. At last regression analyses were used. The results of analyses showed that a firm's IT capability and its sub dimensions have positive effects on competitiveness. However, the study was conducted amongst logistics firm and not the manufacturing sector which is the focus of the current study. Majhi and Mukherjee (2019) studied the effect of Information Technology Capability and Firm Performance: The Role of Strategic Orientation. In this study, archival data from the emerging economy context of India was employed, and replicated the findings from the earlier studies, in order to examine the existing theory. The study also proposes to extend the existing theory by incorporating the role of strategic orientation (indicated by the Miles and Snow strategy types) of the firms while examining the impact of IT capability on firm performance. The study focused

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on firm performance as an out and not competitive performance.

Peña-Vinces, Cepeda-Carrión and Chin (2012) studied the effect of ITC on the international competitiveness of firms from a developing country – Peru. The study was examined through empirical research of 100 small to medium-sized enterprises (SMEs) from a developing country – Peru. SMEs from developing countries follow an isomorphic approach. This is because they tend to imitate or copy the better practices from developed countries. The results have shown that ITCs have a positive effect on the international competitiveness of firms. The limitation is the cross-sectional character of this research. Flor and Oltra (2005) studied the influence of firms' Technological Capabilities on Export Performance in Supplier Dominated Industries: The Case of Ceramic Tiles Firms. The empirical work was carried out on a sample of 88 Spanish exporting firms belonging to the ceramic tiles industry, which is characterized as being a supplier-dominated industry. Data was mainly gathered through a postal survey directed at firm managers. The findings show that technological innovation capabilities have a positive impact on export performance. Specifically, results showed that investment in internal non-R&D innovative activities, such as engineering design and pre-production, exerts a positive influence on export performance. However, neither investment in R&D nor investment in external acquisition of technology exerts any influence on export performance. In addition, the findings showed that production capabilities have a positive effect linked to both improvement and imitation of products and processes. Regarding co-operation, export performance is related to capabilities that derive from co-operation with universities and research institutes rather than co-operation with other companies. However, the study was conducted in a Spanish exporting firm belonging to the ceramic tiles industry and not sugar industry.

Herwiyanti (2015) determined the effect of information technology capability and quality of management accounting information with technological uncertainty as moderating variable. Data were collected from respondent represented by accounting managers from the companies that listed in Indonesia Stock Exchange. The data processed using Structural Equation Modeling analysis technique. The result of this study support that there is positive effect of information technology capability toward quality of management accounting information. Whereas, technological uncertainty cannot moderate the relationship between information technology capability and quality of management accounting information. However, the study was conducted in the Indonesian context limiting generalization of findings to the Kenyan context.

Chen, et al. (2014) Studied IT Capability and Organizational Performance: The Roles of Business Process Agility and Environmental Factors. On the basis of matched survey data obtained from 214 IT and business executives from manufacturing firms in China, the analyses showed that even though firm-wide IT capability presents the characteristics of rarity, appropriability, non-reproducibility, and non-substitutability, its impact on organizational performance is fully mediated by business process agility. The results showed that the impact of the environment is multifaceted and nuanced. In particular, environmental hostility weakens the effect of IT capability on business process agility, while environmental complexity strengthens it. However, the study was conducted in the Chinese context and findings may not be generalizable to the Kenyan context. Aduloju (2014) studied information technology managerial capabilities and customer service performance among insurance firms in Nigeria. Using survey research design, the three formulated hypotheses were tested with data gathered from 402 staff at the managerial level drawn from the selected insurance companies in Nigeria, which have been among the largest investors in IT, and where customer service is widely perceived as strategically important. Responses were analyzed using linear regression. A

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major finding of this study is that IT is a necessary, but not sufficient, condition for sustainable competitive advantage in customer service. Results show that the interaction of IT investments and tacit, path-dependent, and firm-specific IT managerial capabilities significantly explains variations in customer service performance. However, the study was conducted in the service industry and not manufacturing industry limiting the generalization of the findings to the sugar industry in Kenya.

Globally competitive performance of the manufacturing sector remains the lifeblood of an economy because of the critical role it plays in a country's long-term prosperity (cimaglobal. com., 2010). In response, realizing competitive performance gains in the contemporary business environment requires that firms are able to adapt to changes that have an impact on their functioning (Mikalef, Pateli & van de Wetering, 2016).Thus, for sustainable competitive performance it remains pertinent for the manufacturing sector to identify their organizational capabilities. This is explained by the fact that organizational capabilities have been posited as being a critical enabler in attaining competitive performance gains. (Muogbo, 2013). Despite the increased awareness about the essence of organizational capabilities, it is evident that the dynamics in the business environment still presents fresh daily challenges to the manufacturing sector. However, Andrews, Boyne, Meier, O'Toole and Walker (2012) emphasize that organizations can exercise strategic choice, even in the face of external constraints to achieve competitive performance.

Teeratansirikool *et al* (2013) studied competitive strategies and firm performance among listed companies in Thailand. Their findings showed that generally, all competitive strategies positively and significantly enhanced firm performance through performance measurement. Specifically, firms' differentiation strategy had a direct and significant impact on firm performance. The study adopted Porters' generic strategies. Bayo- Moriones *et al*. (2016) paid attention to competitive strategy, performance appraisal and firm results. They observed that the interaction between a developmental appraisal system and a quality strategy displays higher return on equity and sales per employee.

Organizational performance comprises the actual output or results of an organization as measured against its intended outputs (Ongeti, 2014). Embracing organizational capabilities shifts the focus of the organization from relying on sources of current competitive advantage and performance to continuously rejuvenating and innovating resources and/or capabilities to yield future competitive advantages against their rivals. This espouses from the fact that the ability to develop and deploy unique organizational capabilities that are superior and or are not available to the competitors therefore serves as prerequisite for superior firm performance (Nyongesa, 2018).

Ngugi (2014) studied competitive strategies and organizational performance of insurance companies in Nyeri County, Kenya. The study concluded that that pursuit of competitive strategies delivers positive results to the organization.

Kungu, Desta and Ngui (2014) also looked at the effectiveness of competitive strategies by Commercial Banks in Kenya noting that Commercial banks were facing stiff competition necessitating the design of competitive strategies to guarantee their performance. The study found that there was a positive correlation between competitive strategy effectiveness; and innovation, customer focus, bench marking and differentiation which were found to be statistically significant. They recommended that the commercial banks should improve their information system, come up with effective pricing strategies, and adopt advanced technology if they are to compete effectively. Kenyan manufacturing firms are finding it increasingly difficult to compete within the changing Kenyan business environment (Owiye & Naibei, 2016). This calls for adoption of proven

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organizational capabilities to enhance their performance.

Tanui (2015) explored how the deployment of information technology capability may be used to build competitiveness among consultancy firms in Nairobi County, Kenya. The study tested six hypotheses covering direct and moderated (by environmental conditions) relationships between IT capability and competitiveness, IT capability and firm competence and between firm competence and competitiveness. The study adopted positivist philosophical approach. The cross-sectional explanatory research design was used for the study, while random sampling method was used to select the target sample. From the total population of 265 consultancy firms in Nairobi, a target sample of 200 consultancy firms was picked via Microsoft excel generated random numbers. Data collection was done via structured questionnaires, after which simple and multiple regression analyses were used to analyze the data. The study found that IT capability positively influences firm competitiveness. IT capability also positively influences firm competence. Firm competence partially mediates the relationship between IT capability and firm competitiveness. The moderating influence of the environmental conditions was found to be contingent upon the behavior of the environmental conditions. At high levels of the environmental conditions, the moderating influence of the environmental conditions on the direct and mediated relationships (mediated by firm competence) between IT capability and firm competitiveness was significant, but at low and medium levels of environmental conditions, the moderating influence of the environmental conditions was not significant. However, the study was conducted in the service industry and not the manufacturing sector.

Kamau, Eng and Nzioki (2019) sought to establish the effect of Information Technology Capability on competitive advantage of the banking sector in Kenya. The study was anchored on the McKinsey 7S Framework Model and the dynamic capability Theory. A positivist research philosophy was adopted for the study. Focusing on 39 operational commercial banks in Kenya, a descriptive survey design was adopted. Primary data was collected and applied in the study. The relationship between the variables was tested using ordinary east square regression model. The study findings revealed that organizational capabilities, that is information technology capability, have a positive and significant effect on competitive advantage of commercial banks in Kenya. However, the study was conducted in the banking industry which has a different organizational culture and structure of management from the Kenyan sugar industry.

Statement of the Problem

Seyhan, Ayas, Sönmez and Özlem, (2017) opine that there are factors which influence the relationship between organizational capabilities and competitive performance. Studies such as Parnell (2011) have examined organizational performance including ROA and ROE on competitive performance. The manufacturing industry saves Kenya more than US$ 250 million in foreign exchange annually sales, this may lead to achieving the goal of being globally competitive and prosperous country with a high quality of life and income per capita by 2030 (Waswa, Mukras & Oima, 2018). However, the manufacturing companies are a victim of the challenges of globalization and its opportunities for their competitiveness. Despite this, the sector in Kenya have not found a way to exploit this conjuncture, and are not sufficiently competitive with new market requirements. Government of Kenya interventions such as removal of price controls, foreign exchange controls and introduction of investment incentives aimed at improving performance of these organizations has not yielded any major changes (KAM, 2012). Kenya's manufacturing companies have over the last decade experienced weak performance with huge debts despite its overall growth potential. Strategic management-oriented challenges have been incriminated for the poor competitive performance of the companies. Imbambi (2017)

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found a positive link between information technology capabilities and competitive advantage of manufacturing companies in Kenya. However, the study did not look at competitive performance but competitive advantage besides the study did not consider information technology capabilities and other management related capabilities as organizational capabilities to see their outcome. In this regard the current study has filled the gap by looking at the effect of information capabilities on competitive performance of manufacturing firms in Kenya.

Objective of the Study

The study examined the role of information technology capabilities on competitive performance of manufacturing firms in Kisumu city.

Research Hypothesis

H_{01}: Information technology capabilities do not significantly affect competitive performance of manufacturing firms in Kisumu city.

LITERATURE REVIEW

Theoretical review;

Resource-Based View Theory

Resource based view theory has its origin from the works of Barney in 1991. A resource- based view (RBV) is one of the most widely accepted theories of strategic management (Powell, 2001). The original resource-based theory claimed that competitive advantages of a firm stemmed from specific resources and proficiencies controlled by the firm including organizational capabilities. Resource-based view theory focuses attention on organizations internal resources as a means of organizing functional processes and obtaining a competitive advantage. Barney (1991) stated that for resources to hold potential as sources of sustainable competitive advantage, they should be valuable, rare, imperfectly imitable and not substitutable. The resource- based view suggests that organizations must develop unique, firm specific core competencies that will allow them to outperform competitors by doing things differently. Some researchers viewed capabilities as those unique significant firm resources, while others distinguished the capabilities from the resources by pinpointing capabilities branched from the resources held by the firm.

The aspect of accomplishing tasks or activities within the organization clearly defines capabilities. (Grant 1991). Although all of the researchers consented that a firm could review its potential of competitive advantages by ways of recognizing its internal resources and capabilities and choosing an appropriate strategy to moderate resource gaps (Raible, 2013). Various organizations are usually faced with a major challenge as they try to identify and review their resources. The RBV theory enables them to identify such resources by reviewing and classifying them according to their potential of having competitive advantage. The major classification of resources was first done by Barney (1991) and Grant (1991). They were able to classify resources into six major categories which were: financial, physicals, human, technological resources, status, and organizational resources. They describe these resources as precious, scarce and durable, which meant that they ought to be protected against duplication, change or imitation. They were thus described as capable of gaining competitive performance.

Resource based view theory is very applicable when analyzing the effectiveness of an organization. This is because, a strategic leader will be in position to adopt organizational capabilities to easily link resources to the functional levels of an organization thus can forecast on the long-term benefits accrued by these resources. On the other hand, leaders bereft of organizational capabilities will only view resources as they appear, for example, in terms of people, tangibles, or intangibles; or seeing one type of capital where others only see another type of capital. Such leaders will never be in a position to see the bigger picture (Hussein, 2011). This theory also states that strategic leaders have the powers of making sure that the firm has access to and develops its resources so that it can effectively and

efficiently make use of them. This may involve the strategic capability of working in conjunction with other players of the industry and exchanging resources with them.

To add on this, organizations need to know which resources to keep, and which ones to dispose (Lorsh, 2017). This only explains that appropriate retention and removal strategies are also required by every organization. To gain competitive performance through competitive advantage, firms should understand that they ought to change their resources into products or services that are valued by their competitors. Strategic capability includes resources and competences that a firm utilizes to compete in its business environment (Akter, Wamba, Gunasekaran, Dubey & Childe, 2016). It can therefore constitute a firm's strengths and weaknesses, and be a source of competitive advantage or disadvantage over its rivals. The theory has been criticized in that an assumption that a firm can be profitable in a highly competitive market as long as it can exploit advantageous resources does not always hold true. It ignores external factors concerning the industry as a whole. Also, it is difficult to find a resource which satisfies all of VRINs criteria.

Porters Generic Theory

Porter's Generic Strategies by Michael Porter **in 1985** (Norris, 2013). Porter suggested four "generic" business strategies that could be adopted in order to gain competitive advantage. The strategies relate to the extent to which the scope of a business' activities is narrow versus broad and the extent to which a business seeks to differentiate its products. The Generic Strategies can be used to determine the direction (strategy) of your organization. According to Porter achieving competitive performance requires a firm to make a choice about the type of competitive advantage it seeks to attain and the scope within which it will attain it.

The two basic types of competitive advantage differentiation and lower cost combined with the scope of activities for which a firm seeks to achieve them lead to three generic strategies for achieving above average performance in an industry: cost leadership, differentiation and focus. The focus strategy has two variants, cost focus and differentiation focus (Gamble, Thompson & Strickland, 2010). The highly volatile and turbulent market conditions will not permit survival of rigid business strategies since long-term establishment will depend on the agility and the quick responsiveness towards market and environmental conditions (Villegas, 2015). Market and environmental turbulence will make drastic implications on the strategies adopted by the firm. Therefore, for competitiveness the sugar industry must adopt strategies which are compatible with the market and dynamics of the business environment in total. The choice of strategy should target a clear niche market and through understanding the dynamics of the market and the wishes of the consumers, should ensure that the costs remain low. The strategy used by the industry should ensure that their product remains unique in the market by focusing on the outside world and has a creative approach for competitive performance. Lastly the sugar industry should ensure that the strategies adopted guarantees costs remaining as low as possible; or ensure that they have a larger market share with average prices to remain competitive. In fine the strategies adopted by the sugar industry should take cognizance of cost leadership, differentiation and focus in order to remain competitive. However, to gain competitiveness these must be done by taking your organization's competencies and strengths into account Gamble, Thompson & Strickland, 2010).

The key strategic challenge for most businesses is to find a way of achieving a sustainable competitive performance over the other competing products and firms in a market (McGrath, 2013). Porter stressed the idea that only one strategy should be adopted by a firm and failure to do so will result in "stuck in the middle" scenario (Porter, 1980). He discussed the idea that practicing more than one strategy will lose the entire focus of the organization hence clear direction of the future

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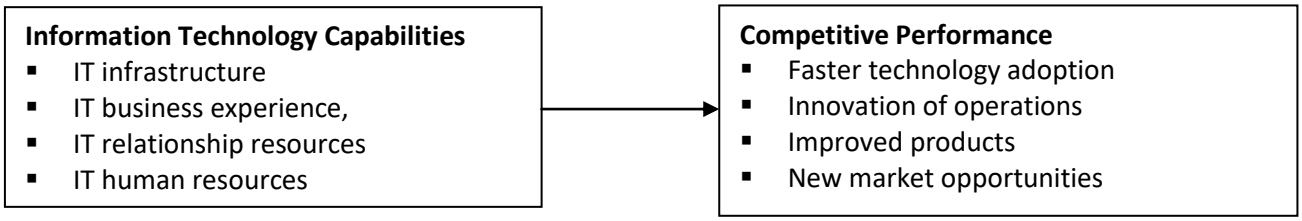
trajectory could not be established. The argument is based on the fundamental that differentiation will incur costs to the firm which clearly contradicts with the basis of low-cost strategy and on the other hand relatively standardized products with features acceptable to many customers will not carry any differentiation hence, cost leadership and differentiation strategy will be mutually exclusive (Bowring, 2014).

Conceptual Framework



Independent Variable **Dependent Variable**

Figure 1: Conceptual framework

METHODOLOGY

Research Design: This research employed a cross-sectional survey design. *Cross-sectional survey* is *defined* as a *research* method that collects data to make inferences about a population of interest (universe) at one point in time (Turner, Balmer & Coverdale, 2013). A cross-sectional study is a type of research design in which you collect data from many different individuals at a single point in time. This type of research method is not simply amassing and tabulating facts but includes proper analyses, interpretation, comparisons, and identification of trends and relationships at a single point in time. In cross-sectional research, researchers do not have direct control over independent variables because their manifestations have already occurred or because they are inherently not manipulable (Remler & Van Ryzin, 2014).

***Target Population*:** The target population for a survey is the entire set of units for which the survey data are to be used to make inferences (Elliott & Valliant, 2017). In fine, the target population of a study defines those units for which the findings of the survey are meant to be generalized to. The target population was 15 manufacturing companies. The study sampled only operations managers and supervisors because they would have in-depth knowledge of managerial decision making and strategy issues in these companies which hinges on organizational capabilities. For purposes of this study the target population was 81 respondents who were drawn from the existing private manufacturing companies in Kisumu city.

***Sampling Frame*:** A sampling frame is a list of all the items in the population (Cooper & Schinder, (2007). That is, it is a complete list of everyone or everything you want to study or a list of things that you draw a sample from. For purposes of this study the target population was 81 respondents who were drawn from the existing private manufacturing companies in Kisumu city.

***Sample Size and Technique*:** The study sampled only operations managers and supervisors because they would have in-depth knowledge of managerial decision making and strategy issues in these companies which hinges on organizational capabilities. In this study census technique was adopted. Mugenda and Mugenda (2012) explain a census as an enumeration of all items in a population which must be consistently defined for the purpose of study. The ideal sample is the one that fulfills the requirements of representativeness, efficiency, reliability, and flexibility in light of the entire population (Tamayo-Torres, Gutierrez-Gutierrez, & Ruiz-Moreno, 2014).

***Data collection Instruments*:** Primary data was collected by means of self-administered questionnaires. The questionnaires had structured

questions. These questionnaires were structured and designed in multiple choice formats.

Data Processing and Analysis: Data collected from the field was coded, cleaned, tabulated and analyzed using both descriptive and inferential statistics with the aid of specialized Statistical Package for Social Sciences (SPSS).version 24 software. Descriptive statistics such as frequencies and percentages as well as measures of central tendency (means) and dispersion (standard deviation) was used. Data was also organized into graphs and tables for easy reference.

Further, inferential statistics such as regression and correlation analyses was used to determine both the nature and the strength of the relationship between the dependent and independent variables. Correlation analysis is usually used together with regression analysis to measure how well the regression line explains the variation of the dependent variable. The linear and multiple regression plus correlation analyses were based on the association between two (or more) variables. SPSS version 24 is the analysis computer software that was used to compute statistical data.

Study conceptualized Regression Model;

$y = \beta_0+\beta_1X_1 + \varepsilon$

y = Competitive Performance

β_0 = Constant

X_1= Information Technology Capabilities

$\{\beta_1\}$ = Beta coefficients

ε = the error term

FINDINGS AND DISCUSSIONS

A sample size of 81 was adopted to get the views of operations managers and supervisors of all the manufacturing firms for data on the effect of organizational capabilities on competitive performance. Subsequently, 81 questionnaires were distributed. A total of 72 questionnaires were returned from which, 6 questionnaires were discarded for lack of response. This represented a response rate of 81%. This response rate was deemed adequate for external validity. According to Lindemann (2019) a high response rate (>80%) from a small, random sample is preferable to a low response rate from a large sample. A higher response rate is preferable because the missing data is not random. A low response rate can give rise to sampling bias if the nonresponse is unequal among the participants regarding the outcome.

Descriptive Statistics;

Information Technology Capabilities and Competitive Performance

One way to improve competitiveness is by utilization of ICT capabilities. Chong, Salleh, Ahmad and Sharifuddin (2011) show that the development and maintenance of appropriate ICT infrastructure and software is an essential factor in improving an organization's performance. Thus, the study sought to establish the state of ICT capabilities in the sugar companies. According to the results a total of 80.6% of the respondents both agreed and strongly agreed that there is continuous utilization of information technology to manage business processes (M=4.18 SD=1.167) ,12.9 % disagreed while 4.8% were undecided. Besides, a majority of the employees 68.1% of the respondents agree that their human resources are proficient in the utilization of information technology in discharging their duties (M=3.61 SD=1.497), 30.7% disagreed while undecided were 11.3%. A total of 95.2% of the respondents also agreed and strongly agreed that there is continuous investment on new ICT software for efficient management of the business functions (M=4.68 SD=.696), 1.6% strongly disagreed while 3.2% were undecided. A total of 67.7% of respondents agreed and strongly agreed that ICT has been useful in the management of customer information and sensing new markets (M=4.11 SD=1. 057), 1.6%, 4.8% strongly disagreed and disagreed while 25.8% were undecided. Lastly 91.9% of the respondents agreed and strongly agreed that their customers are able get business information online (M=4.55 SD=.694), 0.0% disagreed while 6.5% were undecided. The sugar companies have information communication technology for competitive performance. The

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implication of this is that there should be strategies in place for the sugar companies to enhance their information communication technology within various domains of their operations.

Inferential Statistics;

Effect of the information technology capabilities

The aggregate mean scores of information technology capabilities (independent variable) were regressed on the aggregate mean score of competitive performance (dependent variable) and the research findings for the Effect of the information technology capabilities on competitive performance of manufacturing companies were outlined in table 1. The individual regression results reveal that information technology capabilities explained 20.7% (Adjusted R^2 = .207) variation on competitive performance of manufacturing companies. This shows that 20.7% changes in competitive performance of manufacturing companies could be accounted for by changes in information technology capabilities while other factors not considered in this study account for only 79.3% of the changes in competitive performance of the manufacturing companies. The R value .455 shows that there is a positive significant correlation between information technology capabilities and competitive performance of manufacturing companies at $p< 0.05$.

Table 1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.455[a]	.207	.193	.412	1.976

a. Predictors: (Constant), Information Technology Capabilities

b. Dependent Variable: Competitive Performance

The ANOVA results in table 1 revealed that there is significance of F statistics (15.634) is 0.000 which is less than 0.05. This implies that there is a significant relationship between information technology capabilities and competitive performance as seen in table 2. This tested the null hypothesis and indicated that Information Technology Capabilities significantly affects competitive performance of manufacturing companies. Thus, the rejection of the null hypothesis. These findings are supported by (Bakan &Sekkeli, 2017; Nevo, Wade, & Cook, 2010).

Table 2: ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2.649	1	2.649	15.634	.000[b]
Residual	10.165	60	.169		
Total	12.813	61			

a. Dependent Variable: Competitive Performance

b. Predictors: (Constant), Information Technology Capabilities

The regression coefficients table 2 showed the contribution of the independent variable to the dependent variable. Finally, from the data in Table 2, the study established regression equation was $Y = 2.844 + .317X_2$.

Therefore, competitive performance of manufacturing companies = 2.844 + .317 Information Technology Capabilities.

From the above regression equation it was revealed that holding Information Technology Capabilities to a constant zero, competitive performance of manufacturing companies would be at 2.844 units. A unit increase in Information Technology Capabilities would lead to increase in competitive performance of manufacturing companies by a factor of 0.317 (B=0.317, P<0.05).

Table 3: Regression coefficients

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Model Tolerance	Model VIF
1	(Constant)	2.844	.343		8.285	.000		
	Information Technology Capabilities	.317	.080	.455	3.954	.000	1.000	1.000

a. Dependent Variable: Competitive Performance

Effect of Information Technology capabilities on competitive performance of manufacturing firms in Kisumu city

The objective of the study was to determine the effect of Information Technology capabilities on competitive performance of manufacturing firms in Kisumu city. The hypothesis stated in the null form is as:

H_{01}: Information Technology capabilities have no statistically significant effect on competitive performance of manufacturing firms in Kisumu city.

Porter (2008) proposed a positive contribution to firm performance by IT, by facilitating customer online access to firm's information on products, services, prices and online purchases. The extant literature shows the significant positive relationship between IT capabilities and business performance. The findings of the study asserts this by revealing that the value of adjusted R squared is 0.193 an indication that there is a variation of 19.3% on competitive performance of manufacturing companies due to Information Technology capabilities at 95% confidence interval. The F statistics (15.634) was also significance a P less than 0.05. This implies that there is a significant ant relationship between Information Technology capabilities and competitive performance of manufacturing companies as seen in table 3.

There was also a fairly strong positive relationship between the study variables as shown by R which is 0.455. All these together led to the rejection of the null hypothesis thus Information Technology capabilities significantly affects competitive performance of manufacturing companies based on Porters generic theory and resource-based view theory. These findings were supported by Bakan and Sekkeli, (2017); Nevo, Wade, and Cook, (2010) who also found a positive and significant effect of Information Technology capabilities and competitive performance of manufacturing companies. This implies that the management of the manufacturing companies should continuously implement and improve on their Information Technology capabilities to enable them coordinate their business activities efficiently courtesy of effective mobilization and deployment of their IT-based resources for competitive performance.

CONCLUSIONS AND RECOMMENDATIONS

Information Technology Capabilities had a significant effect on competitive performance of manufacturing firms in Kisumu city. The model proved that Information Technology Capabilities significantly in enhances competitive performance of manufacturing companies by value of adjusted R squared is 0.193. There was also a fairly strong positive relationship between the study variables as shown by 0.455. Therefore an increase in Information Technology Capabilities by one unit has a positive increase in competitive performance. This findings were supported by emperical literature and both porters generic theory and resource based view.

The study concluded that Information Technology Capabilities had an effect on competitive performance of manufacturing firms in Kisumu city. Information Technology capabilities significantly enhance competitive performance of the manufacturing companies. Thus, the companies

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should continuously make full use of Information Technology Capabilities.

Areas for further research

The study recommended that future studies should focus on other outcomes of organizational capabilities in other sectors. Other studies should focus on the use of moderators in examining the effect of information technology capabilities on competitive performance. Further research using the same variables should be conducted in public manufacturing companies and other organizations

REFERENCES

Aduloju, S. A. (2014). Information Technology Managerial Capabilities and Customer Service Performance among Insurance Firms in Nigeria. *SAGE Open*, 4(4).

Ahmad, S., Schroeder, R. G., & Mallick, D. N. (2010). The relationship among modularity, functional coordination, and mass customization: Implications for competitiveness. *European Journal of Innovation Management*, 13(1), 46–61.

Akter, S., Wamba, S. F., Gunasekaran, A., Dubey, R., & Childe, S. J. (2016). How to improve firm performance using big data analytics capability and business strategy alignment? *International Journal of Production Economics*, 182, 113-131.

Andrews, R., Boyne, G. A., Meier, K. J., O'Toole Jr, L. J., & Walker, R. M. (2012). Vertical strategic alignment and public service performance. *Public Administration*, 90(1), 77-98.

Bakan, I., & Sekkeli, Z. H. (2017). Types of information technology capability and their impacts on competitiveness. *Research Journal of Business and Management*, 4(2), 212-220.

Bowring, J. (2014). *Competition in a dual economy.* Princeton University Press.

Chen, Y., Wang, Y., Nevo, S., Jin, J., Wang, L., & Chow, W. S. (2014). IT Capability and Organizational Performance: The Roles of Business Process Agility and Environmental Factors". . *European Journal of Information Systems*, 23(3), 326-342. .

Chong, S. C., Salleh, K., Ahmad, S. N., & Sharifuddin, S. I. (2011). KM implementation in a public sector accounting organization: an empirical investigation. *Journal of Knowledge Management*, 15(3), 497-512.

cimaglobal.com. (2010). *The global manufacturing sector: Chartered Institute of Management Accountants*. Retrieved from https://www.cimaglobal.com acesssed on the 12/05/2021

Cruz-Ro, S., & Gonzalez-Cruz, T. (2015). Service firm capabilities and performance. Contingent analysis of customer contact, . *Journal of Business Research*, 68(7), 1612-1621.

Elliott, M. R., & Valliant, R. (2017). Inference for nonprobability samples. *Statistical Science*, 32(2), 249-264.

Flor, M., & Oltra, M. J. (2005). The Influence of Firms' Technological Capabilities on Export Performance in Supplier-Dominated Industries: The Case of Ceramic Tiles Firms". *R&D Management*, 35(3), 333-347.

Herwiyanti, E. (2015). The effect of information technology capability and quality of management accounting information with technological uncertainty as a moderating variable. *International Technology Management Review*, 5(2), 11-17.

Hussein, K. H. (2011). Competitive Strategies employed by Mumias Sugar Company to develop Competitive advantage. *Unpublished MBA Project). School of Business, University of Nairobi, Kenya.*

IMBAMBI, R. (2017). INFLUENCE OF STRATEGIC CAPABILITIES ON COMPETITIVE ADVANTAGE OF SUGAR COMPANIES IN WESTERN KENYA . *JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY* .

Inan, G. G., & Bititci, U. S. (2015). Understanding organizational capabilities and dynamic capabilities in the context of micro enterprises: a research agenda . *Procedia-Social and Behavioral Sciences*, 210, 310-319.

Kamau, J. G., Eng, D. T., & Nzioki, D. S. (2019). EFFECT OF INFORMATION TECHNOLOGY CAPABILITY ON COMPETITIVE ADVANTAGE OF THE KENYAN BANKING SECTOR. *International Journal of Technology and Systems*, 4(1), 1 – 20.

Majhi, S. G., & Mukherjee, A. (2019). Information Technology Capability and Firm Performance: The Role of Strategic Orientation. *Australasian Conference on Information Systems.* Perth Western Australia : Indian Institute of Management Ranchi.

McGrath, R. G. (2013). *The end of competitive advantage: How to keep your strategy moving as fast as your business.* Harvard Business Review Press.

Mikalef, P., Pateli, A., & van de Wetering, R. (2016). IT flexibility and competitive performance: The mediating role of IT-enabled dynamic capabilities. *Norwegian University of Science and Technology*.

Mugenda, O. M., & Mugenda, A. G. (2012). *Research methods dictionary.*

Muogbo, U. S. (2013). The impact of strategic management on organisational growth and development (A study of selected manufacturing firms in Anambra state). *IOSR Journal of Business and Management*, 7(1), 24-32.

Nevo, S., Wade, M., & Cook, W. D. (2010). An empirical study of IT as a factor of production: The case of Net-enabled IT assets. *Information Systems Frontiers*, 12(3), 323-335.

Norris, S. E. (2013). *Norris, S. E. (2013). A complex responsive process approach to strategic management: Employee engagement, knowledge creation, and organizational learning. In Intellectual Capital Strategy Management for Knowledge-Based Organizations (pp. 39-51).* IGI Globa.

Nyongesa, P. H. (2018). Influence of Strategic Firm Capabilities on Systemic Performance of Vendor Managed Retail Medium and Large Supermarkets in the Nairobi City County in Kenya . *Doctoral dissertation, COHRED-JKUAT*.

Ongeti, W. J. (2014). Organizational Resources, Corporate Governance and Performance of Kenyan State. *Unpublished PhD thesis. Nairobi: University of Nairobi*.

Owiye, P., & Naibei, I. K. (2016). Effect of Trade Liberalization on Performance ofSugar Firms in Kenya: The Case of Government-Owned Firms. *European Scientific Journal* , 12(13),306-321.

Parnell, J. A. (2011). Strategic capabilities, competitive strategy, and performance among retailers in Argentina, Peru and the United States. *Management Decision*, 49(1), 139-155.

Pearce, I. I. (2011). JA, & Robinson Jr. RB, Strategic Management, Strategy Formulation and Implementation.

Peña-Vinces, J. C., Cepeda-Carrión, G., & Chin, W. W. (2012). Effect of ITC on the international competitiveness of firms. . *Management decision* , 50(6), 1045-1061.

Piedrahita, J. S., ZAPATA, G. M., ZAPATA, A. I., & Rosero, B. E. (2020). Marketing Capabilities to Grant a Competitive Advantage to Engineering. *Utopía y Praxis Latinoamericana*, 25(11), 96-110.

Porter, M. E. (2008). On Competition, Updated and Expanded Edition. Boston: Harvard Business .

Powell, T. C. (2001). Competitive advantage: logical and philosophical considerations. . *Strategic management Journal*, 22(1), 135-156.

Raible, M. (2013). Industrial organization theory and its contribution to decision-making in purchasing. Tewnte: university of Twente.

Rehman, N., Nor, M. N., Taha, A. Z., & Mahmood, S. (2018). Impact of information technology capabilities on firm performance: Understanding the mediating role of corporate entrepreneurship in SMEs. *Academy of Entrepreneurship Journal*, 24(3), 1-19.

Remler, D. K., & Van Ryzin, G. G. (2014). *Research methods in practice: Strategies for description and causation.* Sage Publications.

Saleh, A. A. (2015). The role of marketing capabilities in firm's success. . *International Journal of Management Science and Business Administration*, 2(1), 56-65.

SEYHAN, M., AYAS, S., SÖNMEZ, Ü., & Özlem, Y. U. (2017). The Relationship between Strategic Capabilities and Competitive Performance: The Moderating Role of Internal Cooperation. *International Journal of Academic Research in Economics and Management Sciences*, 6(1),146-164.

Tamayo-Torres, J., Gutierrez-Gutierrez, L., & Ruiz-Moreno, A. (2014). The relationship between exploration and exploitation strategies, manufacturing flexibility and organizational learning: An empirical comparison between Non-ISO and ISO certified firms.

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic management journal*, 18(7), 509-533.

Turner, T. L., Balmer, D. F., & Coverdale, J. H. (2013). Methodologies and study designs relevant to medical education research. *International Review of Psychiatry*, 25(3), 301-310.

Waswa, C., Mukras, M., & Oima, D. (2018). Effect of Competitiveness on Financial Performance of the Sugar Industry in Kenya. *International Journal of Education and Research*, 6(6),45-69.

Yu, H., Jiang, S., & Land, K. C. (2015). Multicollinearity in hierarchical linear models. *Social science research*, 53, 118-136.