



**EFFECT OF INFORMATION AND COMMUNICATION TECHNOLOGIES ON
COMPETITIVENESS OF MANUFACTURING SMALL AND MEDIUM SCALE
ENTERPRISES**

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Abstract

The study was seeking to establish effect of information and communication technologies on competitiveness of manufacturing (SMEs) in Thika, Kiambu County: Kenya. This was achieved through the following objectives: examining how e-inventory management affects the competitiveness of SMEs traders at Thika; determining how e-marketing affects competitiveness of SMEs traders at Thika and identifying how e-customer relationship management affects the competitiveness of SMEs traders in Thika. A survey research design was employed on sample SMEs Traders through the use of questionnaires to collect primary data. The collected data was analyzed through descriptive statistics mainly to summarize the data. This will include percentages and frequencies. Tables and other graphs were used as appropriate to present the data collected for ease of understanding. The questionnaire technique was used to obtain information from the respondents through simple random methods of administering them. Kothari (2004) observes that a questionnaire is good for research studies as they enable a researcher to collect more information which is not directly observable. The questions in the questionnaire were both structured (closed ended questions) and open ended questions for the purposes of eliciting more in-depth qualitative information and quantitative information. The selection of these tools was informed by time available and the objectives of the study. Based on the empirical evidences and results of the analysis, the researcher arrived at logical conclusions. The researcher concludes that there is a positive relationship between all the independent variables under study and competitiveness. This position was clearly shown through the inference statistics which confirmed the existence of a significance level or the P values which were less than confidence level of confidence.

Keywords: e-inventory management, e-marketing, e-Customer Relationship Management

Background of the Study

Information Communication Technology has changed strategies and manner of doing things, in commerce, trade, agriculture, and manufacturing and government services. It is to be adopted by business as a matter of responding to world dynamics. Highlighting the impact of ICT in recent years, Oladejo and Adereti (2010) observed that the 1990s witness the proliferation and hyper growth of internet and internet technologies, which together are creating a global and cost-effective platform for business to communicate and conduct commerce. Despite the enormous investment in IT during recent years, demonstrating the effect on such on organizational performance has proven an enormous subject, (Mahmood & Mann, 2000). Due to the globalization of markets and competitive developments in the demand for new technologies and innovations have rapidly made it difficult to survive and prosper (Seyyed et al 2015). Today turbulent nature of global manufacturing sector industry is faced with numerous challenges. The solution in this unstable environment is to consolidate and achieve a situation of continuous improvement through application of ICT (Seyyed, 2015).

According to world development report (1999), for leading countries in the world economy, the balance between knowledge and resources has shifted so far towards the former that knowledge has become perhaps the most important factor determining the standard of living more than land, tools, and labor. Today's most technologically advanced economies are truly knowledge based (Akande & Oluwaseun, 2013). Computers and the internet catalyzed the growth of the knowledge economy by enabling people to put knowledge into a digital form easily transmitted to anywhere around the world. IT has sped up the pace of globalization and increase the complexity of business practices because firms not only need to be familiar with their local context but also with global developments, (Olusola et. al, 2013. Thus, to compete in the knowledge economy, Manufacturing SME's need a strong IT skills base that can innovate and adapt quickly to change.

ICT usage in business activities can be effective and efficiently and ensure business success as ICT is usually more accurate and fast than manually routines. ICT has the potential to support many business activities within a firm and could influence its performance; performance such as productivity, profitability, market value, and market share (Laudon and Laudon, 2016). ICT also affects intermediate performance measures such as process efficiency, service quality, cost savings, customer satisfactions, as well as organizational and process flexibility (Alberto and Fernando, 2016). Businesses adopting and using ICT can obtain benefits as it allows quick access and more accuracy to vital information in a competitive environment (Laudon and Laudon, 2016). There are many examples of benefits from ICT usage for SMEs in their daily business activities. Increased annual profit, more effective employees, improved accuracy, and quick customer satisfaction is some of the benefits SMEs can gain by adopting and using ICT. The ICT usage could be computer (web sites, email, database), and communication (telephone and internet) usage. Firms using ICT needs to have personnel that can use the ICT in order for

the firm to reap these benefits. If the SMEs manages to reap these benefits depends on their ability to recruit ICT skillful graduates (Vanita *et al.*, 2016).

Statement of the problem

An inventory management program considers such things as purchasing goods commensurate with demand, seasonal variation, changing usage patterns, and monitoring for pilferage. Electronic marketing and marketing information remains a severe constraint to Manufacturing SMEs development and competitiveness in Kenya. To this view (Kiveu & Ofafa, 2015) further states that overall aggregate demand is low; markets are saturated due to dumping and overproduction, and in most cases markets do not function well due to lack market information and high transaction costs. This confines majority of Manufacturing SMEs to narrow local markets characterized by intense competition

Although Kenya is the most industrially developed country in East Africa, GOK, (2011). Manufacturing still accounts for only 14 per cent of gross domestic product (GDP). This represents only a slight increase since independence. Expansion of manufacturing after independence, initially rapid, has stagnated since the 1980s because of scanty leverage on ICT and dumping of cheap imports (GOK, 2011). A recent study by the Bowen et al. (2009) shows SMI's in Kenya suffer from constraints that lower their resilience to risk and over 50% of SME's continue to have a deteriorating performance with every 3 in 5 SME's introduced failing within few months of establishment and only a fraction develops to the core group of high performance firms.

This study was informed by the understanding that Kenyan people are faced with myriads of challenges with earning income due to high unemployment levels and thereby resorting to starting SME's as a means of harnessing their livelihood. Therefore, given the importance of Manufacturing SME's to the Kenyan people and the evidence that they are often exposed to risk of failures, there is need to conduct empirical enquiry on how ICT would foster their survival and growth overall.

Objectives of the Study

The main aim of the study is to establish the effect of information and communication technologies on competitiveness of manufacturing small and medium scale enterprises. The specific objectives were to:

- 1) Determine the effect of electronic inventory management on competitiveness of manufacturing SME's in Thika
- 2) Examine the effect of electronic marketing on competitiveness of manufacturing SME's in Thika
- 3) Establish the effect of electronic customer relationship management on competitiveness of manufacturing SME's in Thika

Research Methodology

This research survey used both qualitative and quantitative methods to investigate and collect required data for analysis. The research problem was studied using a descriptive research design. Descriptive research design in which quantitative data was collected and analyzed so that to describe the specific phenomenon in its current events, current trends, and linkages between different factors at current time. The research targeted manufacturing SMEs operating in Thika, Kiambu County, Kenya. There are about 67 registered SMEs in Thika according to County Government of Kiambu. The sample size was computed using 30% of the target population which gave us a sample size of 20 respondents. The questionnaire technique was used to obtain information from the respondents through simple random methods of administering them. The questions in the questionnaire were both structured (closed ended questions) and open ended questions for the purposes of eliciting more in-depth qualitative information and quantitative information. The selection of these tools was informed by time available and the objectives of the study.

This statistical process for estimating the relationships among variables focused on the relationship between dependent variable_i.e. competitiveness and independent variables_or predictors. A written explanation was also provided to interpret data, draw conclusions, and make recommendations.

Research Findings and Discussion

ICT Strategies and Competitiveness

The respondents were classified on contribution of ICT on business competitiveness in the industry. The table below shows the frequencies and the respective percentages.

Table 1: ICT Strategies and Competitiveness

	Frequency	Percentage
Highly Competitive	15	83.3
Moderate competitive	3	16.7
Total	18	100

From this study, 15 out of the 18 respondents reported that they were highly competitive while 3 respondents reported that they had moderate competitiveness through application of ICT. This implies that 83.3% of the respondents had high competitive only 16.7% of these respondents had moderate competitive. This agrees with (Furrer 2008) that the pursuit of competitiveness is arguably the central theme of all businesses, further according to (Powell 2015; the superior performance of a firm arises from sustainable completeness through adopting new technologies is of strategic importance in initiating the movement toward higher quality and completeness.

Every SME have a desire of being competitive so that they can acquire a high level of market share compared to other competitors. Hence the management and the owners of an organization should work very hard to ensure that they are competitive. Moreover, Hazbo (2008) argues that ICT has become a major catalyst and enabler of organizational change that enable a firm to successfully formulate and implements a value-creating strategy. In this respect, Ashrafi and Murtaza (2010) assert that ICT enhance manufacturing SMEs competitiveness by helping them to enter new markets, supply new products and services increase their added value, change business processes increase performance and productivity of the SME's, employ new business channels and provide a rapid response to competitors' activities. Also, Gathogo, (2014) strongly advocate that they need access to appropriate technology if they are to have be competitive otherwise their inability to secure technology especially at start-up level impact negatively on the entrepreneurship development process in today's world of globalization.

E-Inventory Strategy Management and Competitiveness

The respondents were required to give information on e-inventory management on competitiveness and whether they had adopted E-inventory management in their business. The table below shows the responses to this regard.

The researcher tried to relate E-inventory management and the competitiveness of the SMEs. This was summarized in the table below.

Table 2: E-Inventory Strategy and Competitiveness

Contribution of E-inventory management	%
High competitiveness 15	83.3
Moderate Competitiveness 3	16.7
Total 18	100

Table 2 above indicates that respondents who had high competitiveness based on the application if electronic inventory management were 15, translating to 83.3% while only 3 that is 16.7% of these respondents reported to have moderate competitiveness. As Graman and Magazine (2013) argue that companies must now provide good service by tapping to e-inventory management while maintaining minimal inventories in order to be competitive and avoid stock loses due to the cost of holding inventory, extensive product proliferation and the risk of obsolescence, especially in rapidly changing markets. Further Imeokparia (2013). argues that for an organisation to adopt the right e-inventory management strategy, this e-inventory management strategy is necessary in order to gain more customers through customer satisfaction, and in order for the third-party logistics provider organisation to operate effectively through the preferable strategy.

E-Marketing Strategy and Competitiveness

The researcher tried to evaluate contribution of e-marketing and competitiveness to competitiveness and whether the respondents were applying E-marketing in their businesses. The table below summarizes the responses given.

Table 3: E-Marketing Strategy and Competitiveness

	Contribution of E-marketing	%
High Competitiveness	17	94.4
Moderate	1	5.6
Total	18	100

Table 3 above indicates that most of the respondents that is 17 (94.4%) reported to have high competitiveness which was courtesy to application of E-marketing while only 1 (5,6%) respondent who had moderate competitiveness through the use of E-marketing. As Kiveu (2013) proposed that E-marketing is important success function for Manufacturing SME's that is facilitated by market access. Information plays a key role in market access and is the main core of any e-marketing system. Further to this view (Kiveu & Ofafa, 2013); E-marketing strategy spells a breakthrough to unlimited access to market. Strategies that enhance market access greatly impacts on the Competitiveness of small enterprises. He further said Potential benefits of ICT to Manufacturing SME's include enhancing efficiency, reducing costs, and broadening the market both locally and globally. (Kiveu, 2013) continue to say: empowering Manufacturing SME's to participate in the knowledge based economy by facilitating connectivity promote their competitiveness in the industry.

E-Customer Relationship Management Strategy and Competitiveness

The respondents were required to give information on e-customer relationship management and competitiveness. The table below shows the responses to this regard.

The researcher tried to find the relationship between the E- customer relationship management and competitiveness and produced the following results.

Table 4: E- Customer Relationship Management Strategy and Competitiveness

	Contribution of E-CRM	%
High Competitiveness	16	88.9
Moderate Competitiveness	2	11.1
Total	18	100

Table 4 above shows that the application of E-CRM contribute to 88.9% of high level of competitiveness while only 11.1% are seen to have moderate competitiveness and they apply the E- CRM. This is true as supported by Fotouhi (2015); that 5% increase in preserving the

customer will lead to 95% increase in the value for organization. This means that instead of distinguishing products, organizations should identify their customers and shift toward emphasis on the increasing the share of customer. Thus, customer is one of the important resources for the development of enterprise: For the enterprises, efficient organization and planning of their own resources can help them to achieve competitiveness and long-term development goals.

Mean and Standard Deviation

The researcher obtained a low standard deviation which indicates that the data points tend to be close to the mean also called the expected value of the set, while a high standard deviation indicates that the data points are spread out over a wider range of values. The table below is the result of this study.

Table 5: Mean and Standard Deviation Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
E-Inventory mgnt	18	1	5	4.58	1.056
E-marketing	18	1	5	4.94	1.349
E-Cust mgnt	18	1	5	5.00	1.351
Comp indicator	18	1	5	4.79	0.901
Valid N (listwise)	18				

Standard deviation tries to show how well the data is represented by the mean. Since there is not much variations from the reported mean, it means that the data is well represented by the mean. From the table above competitiveness has the least deviation from the mean.

Correlation

Correlation is used to show the relationship between two variables. Unlike experimental studies, however, correlational studies can only show that two variables are related—they cannot determine causation which variable causes a change in the other. The researcher tested the correlation between the dependent and the independent variable. The correlation results are shown in the table below.

Table 6: Correlation

Competitiveness		E-INV	E-M	E-CRM	S
E-INV	Pearson Correlation	1	.173	.045	.532
E-MTK	Pearson Correlation		1	.338	.310
E-CRM	Pearson Correlation			1	.448
Competitiveness	Pearson Correlation				1

Correlation indicates the level of association between the variables under consideration. The results show that there is a positive correlation between the dependent variable and all the independent variables. The highest correlation was observed between e-inventory management and competitiveness with a relationship of 0.532. This was closely followed by e-customer relationship with a relationship of 0.448. The lowest e-marketing was which had a positive but mild correlation with competitiveness with a relationship of 0.310. However, it is noted that all variables had a positive correlation with competitiveness; when any of the variables increased, they increased competitiveness.

Inferential Statistics

This section explains the linear regression model results that was obtained from the SPSS model. The linear regression model is of the form;

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + e$$

Where Y is the dependent variable

β_0 is the constant

$\beta_0, \beta_2, \beta_3$ is the slope of each independent variable

X_1 is the electronic inventory management

X_2 is the electronic marketing

X_3 is the electronic customer relationship management tools

The model is presented in the table below;

Table 8: Linear Regression Model

Coefficients		Unstandardized		Standardized		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	.947	.436		2.170	.048
	E-IM	.372	.147	.436	2.533	.024
	E-M	.271	.122	.405	2.219	.044
	E-CRMT	.377	.120	.565	3.136	.007

R² 0.517

The table 8 above gives the statistical results of the study. At 95% confidence or 5% significant level, the study indicated that all the variables under consideration are significant to the study since they have a significant level of less than 0.05. The study results also show a positive relationship between the dependent variable and the independent variables.

From the model table, that is table 8 above the linear regression equation can be expressed as follows:

$$Y = 0.947 + 0.372X_1 + 0.271X_2 + 0.377X_3 + e$$

Analysis of B-Coefficient & significance level

From the B-Coefficient we observe that E-customer relationship management had the largest contribution to the effect of competitiveness (β 0.377) implying is more significant and at the lowest significant level of 0.007. E follows this- inventory management with a beta coefficient of (β - 0.372) at a significant level of 0.024. The last one is E-marketing with a (β -0.271) with also the least significance level of 0.044 being the last of the three as we compare significance. This implies that when one has limited resources to invest in any of the three independent variables, he will concentrate most of the resources on E-customer relationship management which has the largest contribution on SME's competitiveness, followed by E-inventory management and eventually on E-marketing. This model is translated to mean that if X_1 , X_2 , and X_3 are zero, Y the dependent variable will be 0.947. This model shows that a unit increase in E-inventory will contribute positively towards SME's competitiveness by 0.372. Likewise, a unit increase in E-marketing will contribute to increased competitiveness by 0.271 and a unit increase in E-customer relationship management will contribute to increased competitiveness by 0.377. The study showed an R square of 0.517 implying that the 51.7% of the variations in the dependent variable can be explained by the independent variables thus 48.3% of the variations in the dependent variable are explained by other factors other than those considered in this study.

Conclusion and Recommendations

Conclusion

The overall objective of the study was to investigate the effect of information and communication technologies on competitiveness of manufacturing small and medium scale enterprises. Several questions were given to the clients through questionnaires to assist derive facts and information on the variables. Based on the empirical evidences and results of the analysis, the researcher arrived at logical conclusions. The researcher concludes that there is a positive relationship between all the independent variables under study on competitiveness. This position was clearly shown through the inference statistics which confirmed the existence of a significance level or the p values which were less than confidence level of confidence.

Recommendations

Based on the investigations conducted and the findings of this study, the following recommendations are put forward by the researcher, for the effective application of information and communication technologies to improve on competitiveness. Based on the significant and positive relationship between electronic inventory management and competitiveness, I recommend that organizations should put more emphasis on installation of software's that assists

them to trace the movement of inventories which in turn will assist in cost reduction due to minimization of stock out. This will also enhance effective customer satisfaction and quick customer service. From the studies, there was a significant and positive relationship between electronic marketing and competitiveness. From these findings, I would recommend that organizations should invest on electronic marketing to enable them to be competitive in the growing economy. From the significant and positive relationship between electronic customer relationship management tools and competitiveness I recommend that organizations should have an emphasis on the use of the different tools that would build up the customer relationship and hence competitiveness.

REFERENCES

- Admin. (2014). *Harnessing Digital Marketing To Access Markets*. ResearchGate.
- Ajayi, A. (2014). *An Appraisal of ICT Adoption in Small and Medium Scale Enterprises in Nigeria*. *International Journal of Research (IJR)*, Vol-1, Issue-8, September 2014 ISSN 2348-6848.
- Akande, O., & Oluwaseun, A. (2013). *An Appraisal of the Impact of Information Technology on Nigeria Small and Medium Enterprises (SMEs) Performance*. *International Journal of Academic Research in Management (IJARM)* Vol. 2, No. 4, 2013., (IJARM) Vol. 2, No. 4, 2013.,
- Alam, & Noor. (2009). *Challenges faced by SME's in developing countries adopting information communication technology*. ResearchGate, Retrieved on: 24 October 2016.
- Alberto, & Fernando. (2016). *Challenges faced by SME's in developing countries adopting information communication technology*. ResearchGate.
- Alimin. (2013). *Strategic Planning and Competitive Advantage of ICT*. *Business and Management Horizons*, 2013, Vol. 1, No. 1.
- Amir, M. (2015). *Effect of Customer Relationship Management (CRM) on Performance of Small-Medium Sized Enterprises (SMEs) Using Structural Equations*. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, Vol. 5, No.2, April 2015, .
- Apulu. (2012). *Determinants of ICT Adoption for Improved SME's Performance in Anambra State, Nigeria*. *American International Journal of Contemporary Research*.
- Armstrong, K. (2015). *Effect of Customer Relationship Management (CRM) on Performance of Small-Medium Sized Enterprises (SMEs) Using Structural Equations*. *International Journal of Academic Research in Accounting, Finance and Management Sciences*.
- Asgarkhani, Y. (2010). *An Evaluation of the Impact of Information and Communication Technologies*. *International Business Research*, Vol. 4, No. 3; July 2011.
- Ashrafi, M. (2014). *An Appraisal of ICT Adoption in Small and Medium Scale Enterprises in Nigeria*. *International Journal of Research (IJR)* , Vol-1, Issue-8, September 2014 ISSN 2348-6848.
- Ata, T. (2014). *Customer Relationship Management Practices: The Impact on*. *European Journal of Business and Management*, Vol.6, No.13, 2014.

- Aziz, A. (2014). *The Impact of Target Cost Method to Strengthen the Competitiveness of Industrial Companies*. *International Journal of Business and Social Science* Vol. 5 No. 2; February 2014.
- Barney. (1991). *What are dynamic capabilities and are they a useful construct in strategic management*. *International Journal of Management Reviews*, Volume 11, Issue 1, March 2009.
- Barton. (1992). *What are dynamic capabilities and are they a useful construct in strategic management*. *International Journal of Management Reviews*, Volume 11, Issue 1, March 2009.
- Birger, W. (1984). *A Resource-Based View of the Firm*. *Strategic Management Journal*, Vol. 5, No. 2. (Apr. - Jun., 1984).
- Bowen. (2009). *Competitive strategy and business environment influencing performance of Small and Medium Enterprises in the*. *European Journal of Business and Management*.
- Brent. (2011). *Tips on how to Write a Good Survey*. Millennium Point Learning Centre :.
- Bryman. (2007). *business research methods 2nd*. *European Journal of Business and Management*.
- ByoungHo. (2013). *Inventory Management System and Performance of Food and Beverages Companies in Nigeria*. *IOSR Journal of Mathematics (IOSR-JM)*, Volume 6, Issue 1 (Mar. - Apr. 2013), .
- Centeno. (2012). *Harnessing Digital Marketing to Access Markets Opportunities for Africa's SMEs*. ResearchGate.
- Chaffey. (2013). *Impact of ICT on SMES*. Bachelor's Thesis Turku University of Applied Science.
- Chen, & Popovich . (2008). *Electronic customer relationship management opportunities and challenges in digital world*. *Irish Marketing Review* Volume.
- Chennai. (2013). *Impact-Of-Information-Systems-On-Management-Decision-making-In-The-Nigerian-Insurance-Sector*. *International Journal of Scientific & Technology Research* , Volume 2, ISSUE 12, December 2013.
- Chuchuen, C. (2011). *Customer Relationship Management Practices: The Impact on Organizational Performance in SMEs of Food Manufacturing*. *European Journal of Business and Management*, Vol.6, No.13, 2014.
- CMA. (2010). *Capital Market Authority. Corporate Governance Regulations*.
- Conner. (1992). *Testing the Impact of Global Mindset on Positive Organizational Outcomes*. University of Nebraska - Lincoln.
- Cooper, S. (2006). *Business Research Methods 9Th Ed*. *European Journal of Business and Management*.
- Dasanayaka, B. (2009). *Small and Medium Scale Enterprises in Informal Sector in Pakistan*. Paper Prepared for the Special IARIW-SAIM Conference on Nepal, September 23-26, 2009.
- Dutu, H. (2011). *European Journal of Business and Management*. *Customer Relationship Management Practices: The Impact on Organizational Performance in SMEs of Food Manufacturing*, Vol.6, No.13, 2014.
- Eckerson, & Watson. (2014). *The Role of Electronic Customer Relationship Management Pillars in Achieving Competitiveness*. *British Journal of Marketing Studies*, Vol.2, No.7, pp.29-44, November 2014.

- Fickel. (2014). *The Role of Electronic Customer Relationship Management Pillars in Achieving Competitiveness*. *British Journal of Marketing Studies*, Vol.2, No.7, pp.29-44, November 2014.
- Fotouhi, A. (Fotouhi (2015). *Effect of Customer Relationship Management (CRM) on Performance of Small-Medium Sized Enterprises (SMEs) Using Structural Equations*. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, Vol. 5, No.2, April 2015.
- Furrer. (2008). *Theories for competitiveness*. University of Wollongong research online.
- Gary, H., & Prahalad, C. (1990). *The Core Competence of the Corporation*. *Harvard Business Review magazine*.
- Gathogo, G. (2014). *Effects of Capital and Technology on the Performance of SMEs in the Manufacturing Sector in Kenya*. *European Journal of Business and Management*, Vol.6, No.7, 2014.
- Gerwitz, C. (2010). *Role of values in the sociology of education*.
- GOK, 2. (2013 - 2018). *Kenya development blueprint by strengthening SMI as one of economic pillars, second Medium Term Plan II*. Kenya Vision 2030.
- GOK, 2. (2013 - 2018). *Kenya development blueprint by strengthening SMI as one of economic pillars, second Medium Term Plan II*. Kenya Vision 2030.
- Graman, M. (2013). *Journal of Mathematics (IOSR-JM)*. *Inventory Management System And Performance Of Food And Bravages Companies In Nigeria*.
- Grant. (1996). *What are dynamic capabilities and are they a useful construct in strategic management*. *International Journal of Management Reviews*, Volume 11, Issue 1, March 2009,.
- Griffiths. (2009). *Research Methods Practice*. *European Journal of Business and Management*.
- Gupta. (2013). *Harnessing Digital Marketing To Access Markets: ResearchGate*.
- Hajar, S. (2014, 2015). *Customer Relationship Management Practices: The Impact on Organizational Performance in SMEs of Food Manufacturing*. *European Journal of Business and Management*, Vol.6, No.13, 2014.
- Hanna. (2010). *Enhancing market access in Kenyan SMEs using ICT*. *Global Business and Economics Research Journal*, Vol 2 (9): 29-46.
- Harreld. (2007). *What are dynamic capabilities and are they a useful construct in strategic management*. *International Journal of Management Reviews*, Volume 11, Issue 1, March 2009.
- Hoffman, N. (2013). *Impact of ICT on SMES*. *Bachelor Thesis Turku University of Applied Sciences*.
- Hoskisson. (1999). *What are dynamic capabilities and are they a useful construct in strategic management*. *International Journal of Management Reviews*, Volume 11, Issue 1, March 2009,.
- Imeokparia, L. (2013). *Inventory Management System and Performance of Food and Beverages Companies in Nigeria*. *Journal of Mathematics (IOSR-JM)*, Volume 6, Issue 1 (Mar. - Apr. 2013),
- Jarad. (2011). *Customer Relationship Management Practices: The Impact on Organizational Performance in SMEs of Food Manufacturing*. *European Journal of Business and Management*, Vol.6, No.13, 2014.

- Khaligh. (2014). *The Role of Electronic Customer Relationship Management Pillars in Achieving Competitiveness*. *British Journal of Marketing Studies*, Vol.2, No.7, pp.29-44, November 2014.
- Kiveu, M. (2013). *Enhancing market access in Kenyan SMEs using ICT*. *Global Business and Economics Research Journal*, Vol. 2 (9): 29 - 46.
- Kiveu, O. (2015). *Harnessing Digital Marketing To Access Markets*. *ReserachGate*.
- Kollberg, L. (2011). *An Evaluation of the Impact of Information and Communication Technologies*. *International Business Research* 4(3), June 2011 with 258 Reads.
- Kotha, V. (2013). *Theories for competitive advantage*. *University of Wollongong Research online*.
- Kothari. (2004). *Research Methodology: Methods and Techniques*, (Second Edition. Second Edition), New Age International Publishers.
- Kroeze. (2008). *Enhancing market access in Kenyan SMEs using ICT*. *Global Business and Economics Research Journal*, Vol. 2 (9): 29 - 46.
- Laudon, J., & Laudon, K. (2016). *Challenges faced by SME's in developing countries adopting Information communication technology*. *ResearchGate*.
- Lawrence. (2013). *Impact of ICT on SMES*. *Bachelor Thesis Turku University of Applied Sciences*.
- Lloyd, K. (2008). *Enhancing market access in Kenyan SMEs using ICT*. *Global Business and Economics Research Journal*, Vol. 2 (9): 29 - 46.
- Machlup. (1996). *Toward a Knowledge -Based Theory of the Firm*. *Strategic Management Journal*, , Vol. 17(Winter Special Issue), 109-122 (1996).
- Mahmood, M., & Mann, G. J. (2000). *Impacts of information technology investment on organizational performance*. *Journal of Management Information Systems*.
- Maina, L. (2014). *Factors Affecting the Performance of Small and Medium Enterprises (SME's) traders at Njambi-ini Market in Nyandarua County, Kenya*. *Unpublished research project for the bachelor of commerce degree programme KCA University*.
- Mehrabi. (2010). *Effect of Customer Relationship Management (CRM) on Performance of Small-Medium Sized Enterprises*. *International Journal of Academic Research in Accounting, Finance and Management Sciences*.
- Mobaraki, M. H. (2012). *The Role of ICT in Performance of Small and Medium Enterprises*. *Interdisciplilnary journal of contemporary research in business*, VOL 3, NO 9.
- Mugenda. (2014). *Research And Methodology*. *Social Sciences Management and Entrepreneurship*, 1(2):203-220, August 2014.
- Nour. (2014). *competitiveness-innovation-productivity-clearing-up-confusion.pdf*. *International journals on business management*.
- Octane. (2011). *Harnessing Digital Marketing To Access Markets:.* *ResearchGate*.
- OECD. (2009). *Enhancing market access in Kenyan SMEs using ICT*. *Global Business and Economics Research Journal*, Vol 2 (9): 29-46.

- Oladejo, M., & Adereti. (2010). *An Appraisal of the Impact of Information Technology on Nigeria SMEs Performance. International Journal of Academic Research in management, Vol. 2, No. 4, 2013.*
- Oldach. (2013). *Strategic Planning and Competitive Advantage of ICT. Business and Management Horizons, 2013, Vol. 1, No. 1.*
- Peelen. (2014). *The Role of Electronic Customer Relationship Management Pillars in Achieving Competitiveness. British Journal of Marketing Studies, Vol.2, No.7, pp.29-44, November 2014.*
- Penrose. (1952, 1959). *What are dynamic capabilities and are they a useful construct in strategic management. International Journal of Management Reviews, Volume 11, Issue 1, March 2009.*
- Peter, C. (2014). *Theories for competitive advantage. University of Wollongong Research online.*
- Pisano. (1994). *What are dynamic capabilities and are they a useful construct in strategic management. International Journal of Management Reviews, Volume 11, Issue 1, March 2009.*
- Plakoyiannaki, & Tzokas. (2008). *Electronic customer relationship management opportunities and challenges in digital world. Irish Marketing Review Volume.*
- Porter. (1980). *What are dynamic capabilities and are they a useful construct in strategic management. International Journal of Management Reviews, Volume 11, Issue 1, March 2009.*
- Powell. (2015). *Factors Influencing the Growth of Hair Salon Enterprises in Kenya: A Survey of Hair Salon Enterprises in Kisii Town. IOSR Journal of Business and Management (IOSR-JBM), Volume 17, Issue 3.Ver. I (Mar. 2015).*
- Robinson, P. (2013). *Strategic Planning and Competitive Advantage of ICT. Business and Management Horizons, 2013, Vol. 1, No. 1.*
- Sahlfeld. (2015). *Factors influencing Adoption of E Marketing by Small and Medium Enterprises (SMEs). Journal of Business and Management (IOSR-JBM), Volume 17, Issue 5.Ver. III (May. 2015).*
- Samantha, R. (2016). *Challenges faced by SME's in developing countries adopting information communication technology. ResearchGate.*
- Schumpeter. (1934). *What are dynamic capabilities and are they a useful construct in strategic management. International Journal of Management Reviews, Volume 11, Issue 1, March 2009.*
- Seyyed, M. A. (2015). *Effect of Customer Relationship Management (CRM) on Performance of Small-Medium Sized Enterprises (SMEs). International Journal of Academic Research in Accounting, Finance and Management Sciences, Vol. 5, No.2, April 2015, .*
- Shanker. (2008). *An Evaluation of the Impact of Information and Communication Technology. International Business Research.*
- Sharma. (2014). *Harnessing Digital Marketing To Access Markets. ResearchGate.*
- Silverman. (2011). *Research Methods in Physical Activity (6th ed.). Londres: Sage Publications.*
- Survey, S. (2014). *Effects of Capital and Technology on the Performance of SMEs in the Manufacturing Sector in Kenya. European Journal of Business and Management, Vol.6, No.7, 2014.*
- Sweeney. (2014). *The Role of Electronic Customer Relationship Management Pillars in Achieving Competitiveness. British Journal of Marketing Studies, Vol.2, No.7, pp.29-44, November 2014.*

- Tarn, O. (2015). *Effects of Information and Communication Technology on Research and Development Activities*. ResearchGate.
- Teece. (1990). *What are dynamic capabilities and are they a useful construct in strategic management*. *International Journal of Management Reviews*, Volume 11, Issue 1, March 2009,.
- Thika Metropolitan Region, 46th ISOCARP Congress 2010. (2005 - 2008). *Thika Metropolitan development strategic plan 2005-2008*.
- Till, & Gartner Group. (2009). *Customer Relationship Management in Ping an Life*. Thesis.
- Turan, U. (2014). *An Appraisal of ICT Adoption in Small and Medium Scale Enterprises in Nigeria*. *International Journal of Research (IJR)* , Vol-1, Issue-8, September 2014 ISSN 2348-6848.
- UN. (2017). *United Nations Millennium Development Goals*. *United Nations-African Union Annual Conference*.
- UNDP. (2004). *Challenges faced by SME's in developing countries adopting information communication technology*. ResearchGate.
- Vaithianathan. (2010). *Impact of ICT on SMES – Case Rwanda*. Bachelor Thesis Turku University of Applied Sciences.
- Vanita. (2009). *Challenges faced by SME's in developing countries adopting information communication technology*. ResearchGate.
- Wang. (2014). *The role of electronic customer relationship management pillars in achieving competitiveness*. *British Journal of Marketing Studies*, Vol.2, No.7, pp.29-44, November 2014.
- Winter. (2003). *What are dynamic capabilities and are they a useful construct in strategic management*. *International Journal of Management Reviews*, Volume 11, Issue 1, March 2009,.
- Winter, & Nelson. (1982). *What are dynamic capabilities and are they a useful construct in strategic management*. *International Journal of Management Reviews*, Volume 11, Issue 1, March 2009.
- Zhang. (2009). *Customer Relationship Management in Ping an Life*. *International Marketing Management*.