

Factors Affecting Automation of Inventory Management in Micro, Small and Medium Enterprises: A Case Study of Kitui County

Lawrence Mbuvi

MSc Candidate Jomo Kenyatta University of Agriculture and Technology, Kenya
School of Entrepreneurship, Procurement and Management,
Nairobi, Kenya

Prof. Gregory Namusonge, PhD

Full Professor Jomo Kenyatta University of Agriculture and Technology, Kenya
School of Entrepreneurship, Procurement and Management,
Nairobi, Kenya

Wycliffe Arani

PhD. Candidate Jomo Kenyatta University of Agriculture and Technology, Kenya
School of Entrepreneurship, Procurement and Management,
Nairobi, Kenya

DOI Link: <http://dx.doi.org/10.6007/IJARBSS/v6-i1/1973>

Published Date: 02 January 2016

Abstract

Despite many challenges facing micro, small and medium enterprises in Kenya, they are yet to embrace full automation of inventories. Therefore the general purpose of this study was to assess factors affecting the automation of inventory management in micro, small and medium enterprises in Kenya. The study adopted descriptive research design. The target population for the study was 200 respondents. Therefore, census was conducted. The researchers used questionnaire to collect information from respondents. The collected data was analyzed using quantitative and qualitative techniques. The study found out that majority of employees in the micro, small and medium enterprises have inadequate information technology skills and hence has hindered the automation of inventories. Also, the study found out that financial accessibility is an obstacle in financing automation of inventories. The study recommended that micro, small and medium enterprises should train its workforce to equip them with information technology skills, and allocate more funds towards automation of inventory.

Keywords: Automation, IT, Finance, Micro, Small & Medium Enterprises

Introduction

Automation involves the functioning of systems and equipments in desired manner at the proper time under control of mechanical or electrical devices that operate without or with minimal human intervention. Automation refers to a variety of applications using computer technology, which includes the generic software, such as word processing, spread sheet and database applications, or specially written records management applications. Computers can be stand alone, or linked using networks (LANs, WANs, intranets, or the Internet), and can use a wide range of peripheral devices such as scanners, bar code readers, printers and among others.

Micro, small and medium enterprises play a pivotal role in the overall industrial economy of Kenya employing greater percentage of people in Kenya, however; the increased operational costs and competition in the market are posing great challenge to the survival of micro, small and medium enterprises. One method of reducing the operational costs and overcoming the market competition is to use technology in business inventory management (Lysons & Farrington, 2006). Automation of inventory control could be a better solution, which is a set of hardware and software based tools that automates the process of inventory management. Inventory cost represents a greater percentage of capital in any business and therefore proper and efficient controls are needed to ensure that businesses have the right goods on hand to avoid stock-outs, overstocking, prevent shrinkage (spoilage/theft), and provide proper stock accounting (Burt & Dobler, 1996).

Despite the accrued benefits from automation of inventory, many micro, small and medium enterprises in Kenya have not been able to incorporate technology in their inventory management. This because of the cost involved ranging from installation cost, management and maintenance costs. The absence of automation has resulted to unmatched order cycle, inappropriate planning and monitoring the level of inventory. In addition, micro, small and medium enterprises are unable to establish control techniques that assist in making decisions with regard to inventory (Depoli, 2009).

General Objective of the Study

The general objective of this study was to assess the factors affecting the automation of inventory management in micro, small and medium enterprises in Kenya.

Specific Objectives of the Study

1. To determine the accessibility of information technology in the automation of inventory management.
2. To investigate the accessibility of financial facilities in the automation of inventory management.

Research Questions

1. What is the accessibility of information technology in the automation of inventory management?
2. What is the accessibility of financial facilities in the automation of inventory management?

Literature Review

The study was anchored and supported by the following theories.

Theory of internal control

A system of effective internal control is critical component of an organization’s management and a foundation for its safe and sound operation. A system of strong internal control can help to ensure that goals and objectives of an organization will be met, that it will achieve long-term targets and maintain reliable accountability as concerns to store operations. Such system can help to ensure that organization will comply with laws and regulations as well as policies, plans, internal rules and procedures and reduce the risk of unexpected losses and damages to the organization’s reputation.

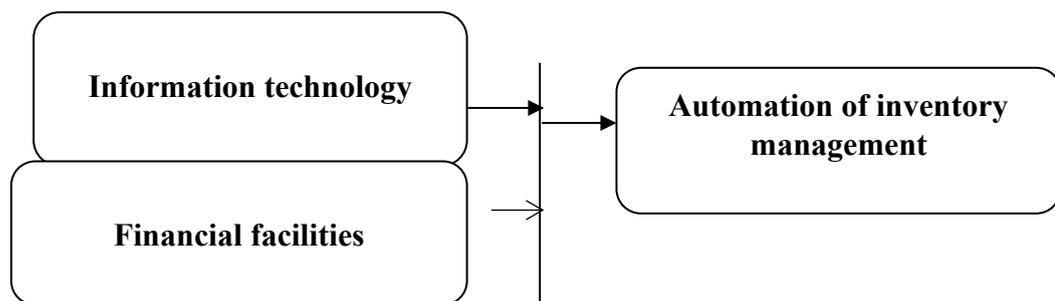
The theory is relevant to the study because it outlines the internal control policies, procedures and rules to be followed in the stores department and their relation to stores automation and the overall departments and organization’s reputation. Automating stores operations will have to impact on policies, procedures and rules of the stores department, supply chain and generally the organization as a whole in a way that may create the need to either change them, add, remove or emphasize, all for ensuring warehouse/storehouse and organizational efficiency.

Systems theory

Bertalanffy (1972) defines system theory as the trans-disciplinary study of systems in general, with the goal of elucidating principles that can be applied to all types of systems at all nesting levels in all fields of research. This theory has done a lot as far as systems development is concerned. The world today is setting trends in trying to outdo traditional approaches in organizations and inputting computerization and automation.

The theory is relevant to the study in because all organizations in a way interact with the outside world as they are often systems or as they seek to develop systems. Sections of organizations interact amongst themselves in exchange of key information and materials. Procurement, transport and the stores departments are part of the entire supply chain (Lysons & Farrington, 2006). They hence depend on each other, share and exchange many things such that if the operations of the stores department are automated, the transport and procurement departments cannot left out.

Conceptual Framework



In traditional approaches to inventory management, managers designed rigid operational schedules for each distinct activity in inventory management (Waters 2006). Many Kenyan organizations are still using the traditional approaches to material management based on paper systems and when they automate, they automate the same procedures with the weaknesses of taking too long time, many people doing the administration, unreliable, with many errors and having many people to supervise. The problem is that entrepreneurs are not getting adequate information and the relevant educations to enable them do business in line

with the modern technology. Education is one of the factors that impact positively on growth of firms (King and McGrath, 2002). Those entrepreneurs with larger stocks of human capital, in terms of education and vocational training, are better placed to adapt their enterprises to constantly changing business environments (King and McGrath, 1998). Cameron Balloons Virtual Factory (2005) came up with the following manual inventory systems:

Fixed re-order stock level – where the business decides the minimum level of stocks it can tolerate and then re-orders before the stocks reach this level. The exact timing will depend how long the stocks take to arrive. The minimum level is set so as to give time to the suppliers to supply. Fixed time re-ordering, where firms re-order stock at fixed periods, each month or week. An organization sets up different times depending on their convenience to re-order stocks. Economic order quantity (EOQ), where a firm usually estimates what is needed and order at once.

Just-in-time (JIT) production which involves keeping stocks to an absolute minimum and the raw materials are ordered only when they are needed. It was developed in Japan and deals with the production of goods. This can be wonderful for helping to reduce the need for working capital, but requires a very high level of organizational skill and a very close Relationship with suppliers. These four methods would suite the company that employs them but still, the manual work is too much plus the related problems that come with it. Combining the four methods and automating the whole inventory control process will give that particular organization a very big boast in managing its inventory.

Lack of short, medium and long term capital, inadequate access to financial resources and credit facilities affect the growth of small scale enterprises in Kenya. Small scale enterprises have serious financial problems in respect of a) Securing funds in small amounts at rates comparable with those paid by large industries and b) Securing long term equity capital.

Despite existing policies on financial support for small businesses, very few entrepreneurs receive financial help when they need it. For example, (Mambula 2002) found that 72 percent of entrepreneurs he studied in Nigeria considered lack of financial support as the number one constraint in developing their business. According to Mambula, small businesses consider procedures for securing business loans from banks cumbersome, and the collateral demanded for such loans excessive. According to the 1999 National MSEs Baseline survey, there were 612,848 women in Micro and Small Enterprises (MSEs) in Kenya, accounting for 47.4 per cent of all those in MSEs. The greatest barrier facing women entrepreneurs in Kenya is access to finance because of requirements of collateral to get loans. According to the survey only 1% of women own property and that makes it very difficult for women to provide collateral to banks. The financial aspects of setting up a business are without doubt the biggest obstacles to women (Zororo 2011, Brush 1992). Women entrepreneurs often lack information about how to get a loan, lack the necessary collateral to obtain loans and /or face discriminatory laws or practices related to finance and credit (Common wealth secretariat 2002)

Research Methodology

The study adopted descriptive research design. This design utilized both quantitative and qualitative data, which enabled the researcher to have an in-depth examination of the key indicators under investigation. It was also intended to provide answers to the research question. The design was chosen since it was deemed to be the most effective to significantly contribute of to the depth and specificity of the study. The target population for the study

was 200 respondents. Therefore, census was conducted. The researchers used questionnaire to collect information from respondents. The collected data was analyzed using quantitative and qualitative techniques with the help of SPSS.

Research Findings And Discussion

From the targeted population of 200 respondents who were all drawn from the six (6) different types of businesses in Kitui County Kenya, a total of 187 respondents responded. This translated to a response rate of 93.5% which was considerably sufficient to guarantee representative findings. This is in line with Berg (2004) who indicated that, a response rate of 60% and above is adequate to permit data analysis. Table 4.1 shows the contributive proportions of responses obtained.

Table 4.1:
Response Rate

Category	Administered	Responded	Percentage
Retail	105	98	93.3
Wholesale	5	5	100
Wholesale/Retail	83	77	92.8
Distribution/warehousing	2	2	100
Processing	3	3	100
Manufacturing	2	2	100
Total	200	187	93.5

Furthermore table 4.1 indicates that responses that were attained from all the targeted entities reflected a highly anticipated representativeness.

Access to Information skills

The first research objective sought to examine how inadequate education and information on modern technology affects the automation of inventory management in small businesses. To establish this, the research was interested in knowing the kind(s) of labour used in the business, sources of market information and how the respondents communicated to their customers. The respondents gave the following responses;

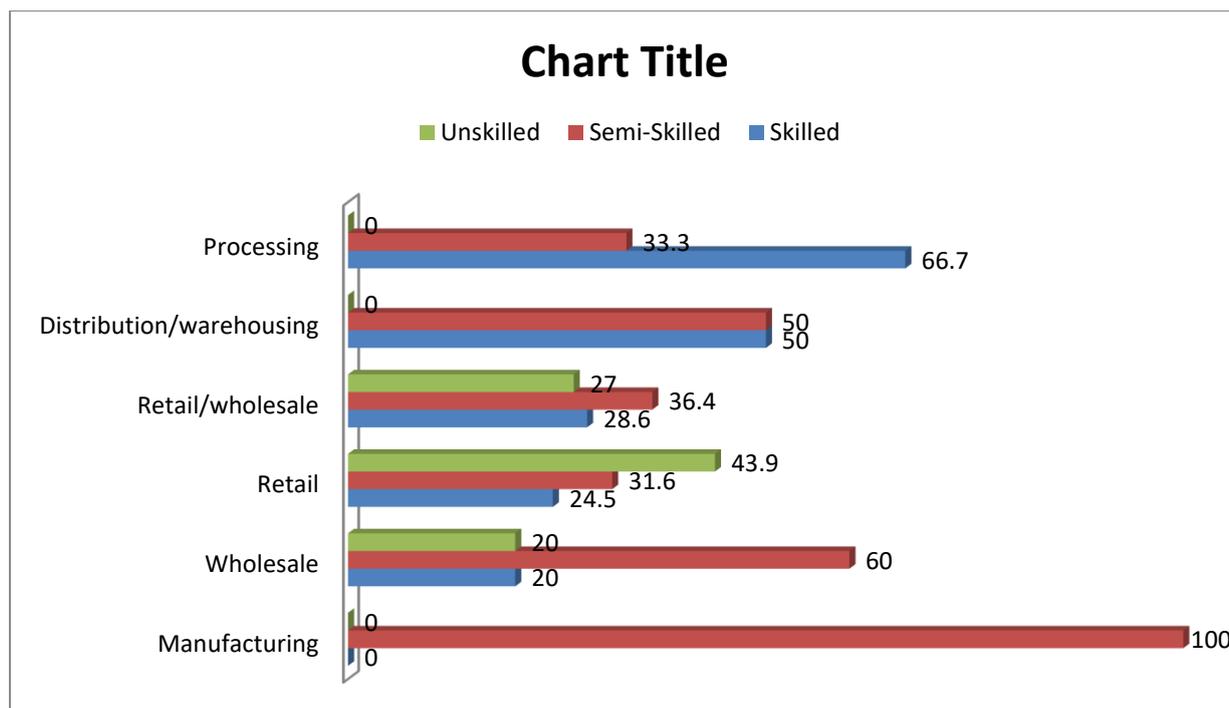


Figure 4.2: Kind(s) of Labour Used

Figure 4.2 show that processing type of business had majority 66.7% skilled labour, distribution/warehousing 50.0%, retail/wholesale 38.6%, retail 24.5%, wholesale 20.0% and manufacturing had no skilled labour. All semiskilled labour was found in manufacturing, 60% in wholesale, 50% in distribution/warehousing, 36.4% in retail/wholesale, 33.3% in processing and 31.6% in retail. On the other hand, majority 43.9% in retail business had unskilled labour, 27% in retail/wholesale, 20.0% in wholesale and none of the unskilled labour was in manufacturing, distribution/warehousing and processing businesses.

The respondents were asked to indicate their sources of market information, to which their responses were as shown in table 4.3

Table 4.3:
Sources of Information

Source	Frequency	Percentage
Print Media	12	6.4
Mass Media	31	16.6
Internet	9	4.8
Customers/suppliers	128	68.4
Others	7	3.7
Total	187	100

Table 4.3 further shows that majority 128(68.4%) used customers/suppliers as their source of information, 31(16.6%) mass media, 12(6.4%) print media, 9(4.8%) internet and 7(3.7%) used other sources.

Access to Finances

The fourth research objective sought to establish how access to finance facilities and services affects the automation of inventory management in small businesses. To establish this, the researcher was interested in identifying sources of capital and challenges faced when sourcing

capital through borrowing. The respondents gave the following responses on sources of capital as shown in table 4.4

Table 4.4:
Sources of Capital

Source	Frequency	Percentage
Personal savings	91	48.7
Borrowing	56	29.9
Others	40	21.4
Total	187	100

Majority 91(48.7%) indicated personal savings as their source of capital, 56(29.9%) borrowing and 40(21.4%) other sources. Challenges faced when sourcing capital through borrowing were rated most 66(35.3%) Lack/inadequate securities, 35(18.7%) High interest rates, 33(17.6%) few lending institutions, 30(16.0%) Small size of loans given and least as 23(12.3%) Long procedures followed. This is shown in figure 4.5

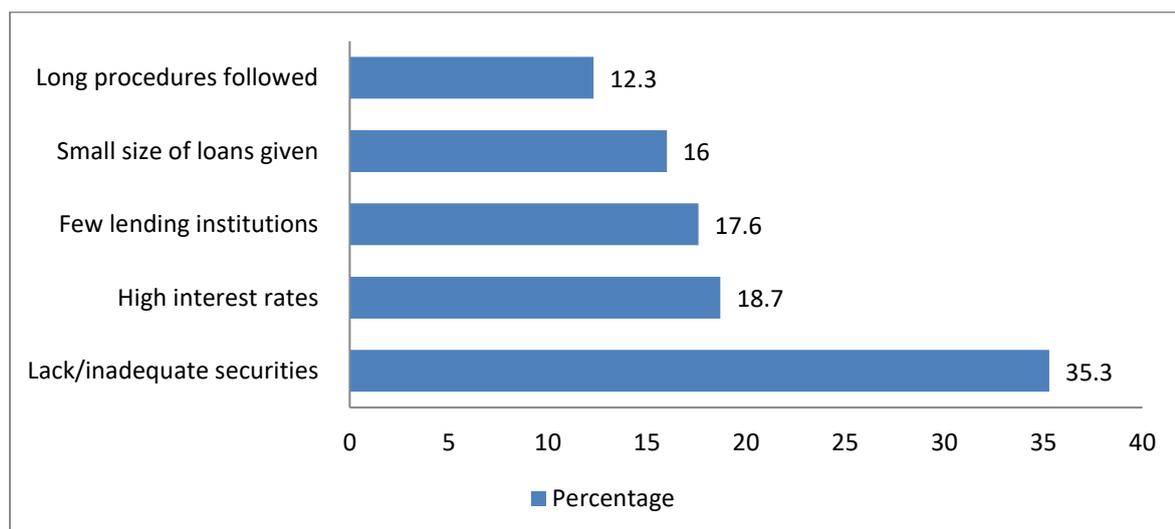


Figure 4.5: Challenges Faced when Sourcing Capital

The study also sought to establish whether the source of finances realize enough capital to enable one improve on inventory management had the following results, to which majority 176(94.1%) disagreed, 7(3.7%) did not know while 4(2.1%) agreed.

Conclusions And Recommendations

From the study findings, the researchers concludes that in regard to effective automation of inventory management in managing in SMEs, it was concluded that SMEs should take effective inventory management as one of the main procedures of managing inventory records system so as to cut on operating cost and keep optimum inventory level. Technology holds a lot of potential for enhancing market access and yet use by SMEs is limited as compared to larger enterprises. The use of technology for marketing by SMEs still remains low despite SMEs having access to these tools. Majority of SMEs use technology for communication, social networking and general information acquisition. There seems to be

lack of awareness of the range of opportunities that technology offers for increased market access. Limited use of technology for marketing can also be attributed to perceived high costs of appropriate applications, security issues and limited knowledge and skills.

Based on the research findings, it is recommended that there should be increased awareness creation by the government and other stakeholders to promote the use of various available technological applications already in use to improve market access. This includes the use of popular social sites for marketing by SMEs, e.g. Face book, Olx, whats up etc. Government should ensure that there are public technical institutions in rural areas at the same time improving business environment to encourage the private entrepreneurs to set up technical institutions in the rural areas. The ICT policies should be made in consultation with the local people to ensure their full participation in implementation. Finances should be made available and at an affordable cost to small scale sector in addition to proper information dissemination and financial advice. The government should ensure that infrastructures which aid business growth like roads, electricity security, and communication are in place for efficient use of technology in the rural areas. To increase access to useful information, ICT intermediaries need to make information available. Government ministries need to compile market information in databases for SMEs to access.

References

- Abereijo, I. O. & Fayomi, A. O. (2005). Innovative approach to SME financing in Nigeria: A review of small and medium industries equity investment scheme (SMIEIS). *Journal of Social Sciences*, 11(3), 219-227.
- AcaDemon, (2005). *Inventory Control Systems-Inventory control systems as related to overall production for a company*.
- Adeya, C. N. 2003. *Sources of Training in African Clusters and Awareness of ICTs: A Study of Kenya and Ghana*. INTECH Discussion Paper No.6, United Nations University: Maastricht.
- African Information Society Initiative (2005). AISI Connect Online Database. www.paradigm.snapc.org.africa/index.htm.
- Amoro, P. (2004). *Project report entitled Automation of Business Transactions of FRIECA Pharmaceuticals Limited*.
- Aryeetey, E. (2001). Priority research issues relating to regulation and competition in Ghana. *Centre on regulation and competition working paper series*. Manchester: University of Manchester
- Atrill, P. (2006). *Financial management for decision makers*, (4th Ed), Prentice Hall
- Barnes, D. (2008). *Operations Management: An International perspective*, Thomson Learning, London.
- Baron, O., Berman, O., & Perry, D. (2010). Shelf Space Management When Demand Depends on the Inventory Level Production and Operations Management. pp. 1–13, 2010 Production and Operations Management Society
- Benbasat, I., Goldstein, D. K., & Mead, M. 1987. *The case research strategy in Studies of Information Systems*. *MIS Quarterly*, 11, 369{386.
- Bhagat, S. & Bolton, B. (2008). Corporate governance and firm performance. *J. Corporate Finance*. 4:257-273
- Bowen, M., Morara, M., & Mureithi, S. (2009). Management of business challenges among small and micro enterprises in Nairobi-Kenya. *KCA Journal of Business Management* 2(1),

- Bwire, S. (2004), *Project report entitled Stores Management Information System Cameron Balloons Virtual Factory on Biz/ed. Stock Control Systems* [Online]<http://www.bized.ac.uk/virtual/cb/factory/purchasing/theories2.htm>.
- Chase R.B, Jacobs R.F Aquilano N.J and Agarwal N.K (2009) *Operations Management for Competitive Advantage 11th edition*, Tata McGraw -Hill, New Delhi.
- Cogburn, Derrick L. and Catherine Nyaki Adeya (2000). *Exploring the Challenges and Opportunities for Africa in the Information Economy*, "The United Nations University, INTECH, Discussion Paper Series, 2000.
- Cowen, M. and McWilliams, S (1996) *Indigenous Capital in Kenya: the 'Indian' dimensions of debate*, Helsinki: Institute of Development Studies, University of Helsinki.
- Daskalakis, N., & Psillaki, M. (2005). The Determinants of Capital Structure of the SMEs: Evidence from the Greek and the French firms.
- De Mel, Suresh, David McKenzie and Christopher Woodruff (2008) "*Who are the Microenterprise Owners? Evidence from Sri Lanka on Tokman v. de Soto*", World Bank Policy Research Working Paper No. 4635.
- Deloof, M. (2003). Does Working Capital Management Affect Profitability of Belgian Firms?. *Journal of Business Finance and Accounting*, 30 (314), 573 –587
- Draft report of *Agriterra Coop Works evaluation mission to Kenya*, January 2011. Evans J.R. et al (1987) *Applied Production and Operation Management (2nd Ed)*, West Publishing Company, St. Paul. Ferrand, D (1999) *Discontinuity in Development, "Kenya's Middle –Scale Manufacturing Industry. PhD Thesis*, University of Durham. *Enterprises: An Empirical Assessment'*. The World Bank Economic Review 7 (1), 65-83.
- Flametree Systems Engineering Ltd, (2010). *Baseline Survey Report*. Goodland A., G. Onumah and O. Amadi (1999). *Rural finance. DFID/NRI*
- GoK (Government of Kenya). (2007). *Kenya Vision 2030: A Globally Competitive and Prosperous Kenya*. October 2007. Nairobi: Government Printer
- Government of Kenya (2005). *Sessional Paper No. 2 of 2005 on Development of Micro and Small Enterprises for Wealth and Employment Creation for poverty reduction*. Nairobi: Government printer.
- Government of Kenya (2007). *Kenya Vision 2030: A Globally Competitive and Prosperous Kenya..* Nairobi: Government Printers.
- GTZ (2003) *Financial System Development Forum Asia*. Your partner for sustainable financial services. <http://www.gtz.de/fsd/Business-Fields/RaAF.htm>
- Gupta, A., Koshal, M. & Koshal R. (2006). *Women managers in India: Challenges and opportunities*. In H. J. Davis, S. R. Chatterjee & M. Heuer (Eds.), *Management in India* New Delhi: Response Books.
- Hawkrige, D. (1983). *New information technologies in education*. London: Broom Relm, P. 161.
- Himbara, D (1994). *Kenyan Capitalists, the State and Development*, Nairobi, East African Educational Publishers.
- Hoff, K. and J. Stiglitz (1990). Imperfect information and rural credit markets: puzzles and policy perspectives. *World Bank Economic Review* 4(3): 235–250. <http://knowledgebase.computerarticles/inventory-control.htm>.
- ILO (2010). *Voucher Program for training and business development services in Kenya Micro and Small Enterprise training and technology project*. Accessed at <http://www.ilo.org/public/english/employment/ent/papers/voucher1.htm>

- International Labour Organization, (2008). *Factors affecting Women Entrepreneurs in Micro and Small Enterprises in Kenya*; a Primary Research Report.
- Jaiyeba, O. (2010). *The Impact of market orientation on SMMEs in the developing economies: a case of Botswana*.
- Kanyanyuz, R. (2005), *Project report entitled Fixed Asset Inventory System for Makerere University*.
- Kasekende, L. and Opondo, H. (2003). *Financing Small and Medium-Scale Enterprises (SMEs): Uganda's experience*. Bank of Uganda working paper.
- Kayanula, D. & Quartey, P. (2000). The policy environment for promoting small and medium-sized enterprises in Ghana and Malawi. Finance and Development Research Programme. *Working Paper Series*, Paper No 15, IDPM, University of Manchester
- Kenya ICT4D National Policy (2006). [Online]. <http://cominit.com/trends/ictpolicies/ictpolicies-10.html>
- Kenya Institute for Public Policy Research and Analysis (2006). *Developing a marketing framework for Micro and Small Enterprises in Kenya*. Nairobi: KIPPRA.
- Kenya National Federation of Agricultural Producers (KNFAP), (2008). "Coop Works Computerizing Agricultural Co-operatives and Producer Organizations." *Farmer's Voice* 1(11).
- Kibera, N. (1996), *Introduction to Business, a Kenya Perspective*. Kenya Literature Bureau.
- Kilby, P (1988) "Breaking the Entrepreneurial Bottleneck in Late –Developing Countries": Is there a useful role for Government?" *Journal of Development Planning*
- King, K. & McGrath S. (2002) *Globalization, Enterprise and Knowledge: Educational Training and Development*, *International Review of Education*, Vol. 50(1), 74-76(3)
- Kombo, A. et al (2011). *An Evaluation of the Impact of Risk management Strategies on Micro Finance Institutions' Financial Sustainability: A case of Selected Micro finance Institutions in Kisi Municipality, Kenya*. *Educational Research*, Vol. 2 (5) pp.1149- 1153.
- Lazaridis, I., and Dimitrios, T. (2005). The relationship between working capital management and profitability of listed companies in the Athens Stock Exchange. Retrieved from <http://ssrn.com/> on January 2010
- Levy B (1993) 'Obstacles to Developing Indigenous Small and Medium
- Liedholm C, Macpherson M and Chuta E (1994) 'Small Enterprise Employment Growth in Rural Africa', *American Journal of Agricultural Economics*, Vol. 76, 1177-1182.
- Marris, P. and Somerset, A. (1971). *African Businessmen: A study of Entrepreneurship and Development in Kenya*. London: Routledge & Kegan Paul.
- Marsden, K (1990) *African entrepreneurs, pioneers of development, International Finance Corporation*, Discussion Paper. No.9.
- McCormick, D. (1988) "Small Enterprises in Nairobi: Golden Opportunity or Dead-end?" PhD. Dissertation, Baltimore: Johns Hopkins University. "MSME Competitiveness Project Secretariat" Ministry of Trade and Industry, Web Links www.msmekenya.org, www.matching-grant.or.ke, www.tradeandindustry.go.ke.
- McCormick, D. (1998) "Enterprise Clusters in Africa: On the Way to Industrialisation?" IDS Discussion Paper No. 366, University of Nairobi (Kenya).
- Mead, D. C. (2008). Micro and Small Businesses tackle poverty and growth (but in different proportions). *Paper presented at the conference on Enterprises in Africa: between poverty and growth*. Centre for African Studies, University of Edinburgh, 26-27 May, 1998
- Micro and Small Enterprises Bill 2011*.GoK.

- Moskowitz, R. (1995). *The Small Business Computer using your computer for inventory control*. National Baseline Survey. (1999). *National Micro and Small Enterprise Baseline Survey*. Nairobi: ICEG and K-REP.
- Peel M and Wilson N (1996). 'Working Capital and Financial Management Practice in the Small Form Sector'. *International Small Business Journal*, Vol.14, 52-68.
- Policy Series No.1*. Department for International Development and Natural Resources Institute: London, UK
- Proceedings of the Small Business Institute Directors' Association, Annual Conference, San Francisco, Feb, 1999, 10-13.
- Ramakrishna R.V (May 2005): Materials Management-profit centre; *Indian Institute of Materials Management Journal*. *Review of Economic Policy* 4: 55–66.
- Rehman, A. (2006). Working Capital Management and Profitability: Case of Pakistani Firms (Unpublished Dissertation). COMSATS Institute of Information Technology (CIIT): Islamabad, Pakistan.
- Rogers E.M. (1983). *Diffusion of Innovations (3rd edition)*. London: The Free Press.
- Saito K and Villanueva D (1981). 'Transactions costs of credit to the small-scale sector in the Philippines', *Economic Development and Cultural Change*, (29), 3.
- Sere, C. (2010). "Backing Smallholder Farmer Today Could Avert Food Crises Tomorrow". *The Guardian*, Poverty Matters Blog, October 14, 2010.
- Sessional Paper No. 2 of 2005 on *Development of Micro and Small Enterprises for Wealth and Employment Creation for Poverty Reduction*, Government of Kenya Policy document.
- Stiglitz, J.E and A. Weiss (1981). *Financial markets and development*. Oxford
- Tornatzky, L. G., & Fleischer, M. 1990. *The Processes of Technological Innovation*. Lexington, MA: Lexington Books.
- Tucker, J. and Lean, J. (2000). *Information asymmetry and small firm finance*. Robert Gordon University, Aberdeen. *Journal of Small Business and Enterprise Development*.
- Vogel, D.R., & Wetherbe, J.C. 1984. *Profile of MIS research: methodology and journal preference*. *Database*, 1(Fall), 3 - 14.
- Wallace, J. "Small Enterprise Development in Africa: Lessons from Success",
- Wanjohi, A.M. and Mugure, A. (2008). *Factors affecting the growth of Micro Small Enterprises MSEs in Rural Areas of Kenya: a case of ICT firms in Kiserian Township, Kajiado District of Kenya*.
- Waters. D. (2009): *Operations Strategy*, Thomson Learning, London. Yin, R. 1984. *Case study research: Design and methods*. (1st ed). Beverly Hills, CA: Sage Publishing.
- Yin, R. 1994. *Case study research: Design and methods*. 2nd ed. Thousand Oaks, CA: Sage Publishing <http://www.guardian.co.uk/global-development/poverty-matters/2010/oct/14/smallholder-farmers-agribusinessinvestment>, accessed May 2011.