

CONSTRAINTS TO ELECTRONIC- COMMERCE ADOPTION IN KENYAN SMALL AND MEDIUM ENTERPRISES (SMES)

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Abstract: E-commerce has been predicted to be a new driver of economic growth for developing countries. The SME sector plays a significant role in its contribution to the national economy in terms of the wealth created and the number of people employed. Small and Medium Enterprises (SMEs) in Kenya represent the greatest share of the productive units of the Kenyan economy and the current national policy directions address ways and means of developing the capacities of SMEs. Many factors could be responsible for the low usage of e-commerce among the SMEs in Kenya. In order to determine the factors that promotes the adoption of e-commerce, SMEs adopters and non-adopters of e-commerce were asked to indicate the factors inhibiting the adoption of e-commerce. The results show that technical Constraints are the most important Constraints followed by legal and regulatory Constraints, whereas lack of Internet security is the highest barrier that inhibit the implementation of e-commerce in SMEs in Kenya followed by limited use of Internet banking and web portals by SMEs. Also, findings implied that more efforts are needed to help and encourage SMEs in Kenya to speed up e-commerce adoption, particularly the more advanced applications.

Keywords: E-commerce adoption, e-commerce adoption Constraints, Small and Medium Enterprises, e-commerce adoption in SMEs in Kenya.

1. INTRODUCTION

The slow pace of e-commerce diffusion in SMEs sector has led to a variety of studies. These studies have reported that SMEs are generally lagging behind to large organizations as far as the adoption and usage of e-commerce is concerned [1] [2] examined the adoption of e-commerce by SMEs and found that SMEs could gain competitive advantage through adopting e-commerce as it could improve their market performance by having better access to the market. (Merry, 2010) [3] found among other issues that SMEs markets needed a high degree of human interaction. Taylor & Murphy [4] argued that SMEs occupy small /clearly defined niche markets that do not need global connectivity through experimentation as inhibitors to e-commerce adoption. Organizations adopting e-commerce in developing countries face problems such as lack of telecommunications infrastructure lack of qualified staff to develop and support e-commerce sites, lack of skills among consumers needed in order to use the Internet, lack of timely and reliable systems for the delivery of physical goods, low bank account and credit card penetration, low income, and low computer and Internet penetration [5] .

The main objectives of this study are to investigate the constraints to e-commerce adoption in Kenyan SMEs and to suggest some recommendations for applying e-commerce successfully. The work begins by examining the nature of SMEs and e-commerce followed by discussing the constraints to e-commerce adoption based on previous research. The remainder of this paper is structured as follows: In the next section, a presentation of research methodology employed in the work was described. The results were later presented and discussion of the findings followed. The conclusions and recommendations finalized the paper.

2. SMALL AND MEDIUM ENTERPRISES (SMES)

Most of the international economies depend basically on the role of SMEs in supporting the national economy in different countries. SMEs contribute significantly to the economies of the African continent, representing around 90% of all businesses, and providing the main source of jobs and income for African people. In the non-oil-exporting states of the region, such as Kenya, SMEs account for a greater proportion of economic activity and international development organizations are active [6].

In Kenya, SMEs historically played a relatively significant role in the process of economic development. The definition of SMEs is not unique; it varies across countries and in some countries, the definition differs further between sectors. Number of people employed and size of capital, sales, assets, etc. are used to classify enterprises into micro, small, and medium.

The sessional paper No 2 of Kenya 2006, classified SMEs based on _labour_ and investment costs_ criteria. Small and medium enterprises are defined as those having 1-10, 10-49 and 50-100 constraints to E-Commerce Adoption in Kenyan SMEs 100 workers respectively. As to the ceilings for investment costs, they are set at Kshs 1 million and Kshs 10 million for the two groups of enterprises respectively [7].

3. E-COMMERCE

Electronic commerce refers to conducting business transactions over the Internet, which includes exchange of information of value in the form of products and services as well as payments, using web-based technologies [8]. Opiyo [9] defined e-commerce as transactions conducted over Internet Protocol-based (IP) networks or over other computer-mediated networks (e.g. EDI if not carried out via IP).

The Internet and e-commerce are transforming the way firms operate by redefining how back-end operations are conducted [10]. Studies of e-commerce issues in developed countries indicate that issues faced by SMEs in developing countries can be totally different [11]. Many SMEs in developing countries are not achieving even minimal levels of e-commerce adoption, also the adoption of web-enabled transaction processing by small business has not been as widespread as would be expected [12]. It has been demonstrated previously that the rate of e-commerce adoption in SMEs has been low.

4. CONSTRAINTS TO E-COMMERCE ADOPTION IN SMES IN KENYA

Although research indicates e-commerce offers viable and practical solutions for organizations to meet challenges of a predominantly changing environment, the available studies related to SMEs in developing countries reveal a delay or failure of SMEs in adopting e-commerce.

4.1 Early e-commerce adoption Constraints in SMEs:

various sources of literature show that Constraints to e-commerce adoption and diffusion in SMEs were initially reported in the period 1990 to 1999. In 1999, El-Nawawy and Ismail [13] in their study of e-commerce adoption by SMEs in Kenya reported that the main factors revolve around awareness and education, market size, e-commerce infrastructure, telecommunications infrastructure, legal system, government issues, affordability/cost structure and social and psychological factors. Also in a study of SME adoption of e-commerce in South Africa by Cloete et al. [14], authors

reported several factors which affect the adoption of e-commerce in MSEs which include lack of information options, lack of time to investigate options, lack of access to computers, lack of access to hardware and software, limited knowledge of e-commerce models and methodologies. In 2004, Chen [15] studied the reasons behind the slow adoption of electronic commerce by the Small and Medium Enterprises (SMEs) in Taiwan. The results showed that financial shortage and concern over lack of IT employees rank as the top two Constraints to adoption of e-commerce by SMEs in Taiwan.

4.2 Recent e-commerce constraints in SMEs:

In the period 2005 and beyond, several studies were also abounding with new Constraints on e-commerce adoption in SMEs. Kaynak et al. [16] reported on the difficulty of finding and retaining qualified personnel with required skills and knowledge and the risk of dissipation of company specific knowledge. Whereas, Merry [3] found among other issues that SMEs markets needed a high degree of human interaction. In 2007, Kshetri [17] analyzed e-commerce Constraints in terms of three categories: economic Constraints, sociopolitical Constraints and cognitive Constraints. Whereas, Rakhmanov [18] presented the main Constraints affecting e-government development in Uzbekistan which negatively affected people's decisions to use the technology and inhibited decision makers from implementing or adopting e-government initiatives. Recently, Olatokun and Kebonye [19], assessed the adoption of e-commerce by SMEs in Botswana and found out the factors that led to e-commerce adoption, the kinds of e-commerce technologies that were adopted and used, as well as the services provided with these technologies. Also, Alshehri and Drew [20] studied the e-ready (readiness) of Saudi citizens to identify the challenges and Constraints that affect the adoption of e-government services in Saudi society. They classified the Constraints into five Constraints: technical, organizational, social, management support and financial Constraints. More recently, Alamro and Tarawneh [21] summarized the factors influencing e-commerce adoption in SMEs in Jordan into three contexts; these contexts were external environmental context (strong competition, global economy, regional trade agreements, extremely low labor cost in some countries, frequent and significant changes in markets and increased power of consumer). organizational context (changing nature of workforce, management support, financial resources, increased importance of ethical and legal issues, increased social responsibility of organizations and rapid political changes) and technological context (increase innovations and new technologies, e-commerce benefits, e-commerce constraints and rapid decline in technology cost vs. Performance ratio). Some of e-commerce adoption Constraints in SMEs is summarized in Table (1).

Table (1): Recent e-commerce adoption Constraints in SMEs Constraints to e-commerce Sources

Constraints to e-commerce Sources

Absence of legal and regulatory systems	[22] & [23]
Change in regulations with each Government	[5] & [22]
Changes in government policy	[5] & [23]
Competitive pressure	[10] & [22]
Computer illiteracy	[24] & [25]
Cost too high	[20]; [23]; [26];
Culture differences	[20]
Difficulty in changing the existing working procedures	[20]; [28] & [29]
E-commerce infrastructure	[5]; [17] & [30]
Inadequate quality and speed of lines	[22]; [23]; [24] & [28]

Increase innovations and new technologies	[20] & [21]
Lack of an appropriate legal environment to apply e-commerce	[23]; [24]; [25] & [30]
Lack of e-trading legislations	[22]; [24] & [25]
Lack of awareness of e-commerce benefits	[12]; [24] & [31]
Lack of qualified staff	[5]; [17]; [28]; [32] & [33]
Lack of Internet security	[32]; [33] & [34]
Lack of external pressure from suppliers and customers	[29] & [35]
Lack of management support	[20]; [36] & [37]
Lack of technical know how	[23]; [27] & [36]
Lack of financial resources	[12]; [17] & [20]
Lack of popularity for online marketing and sales	[10] & [22]
Lack of information on e-commerce	[20]; [22] & [32]
Lack of e-commerce standards	[23] & [32]
Lack of secure payment infrastructures	[23] & [28]
Low internet penetration	[17] & [23]
Low level of readiness among government institutions	[24] & [25]
Limited use of Internet banking and web portals by SMEs	[5] & [38]
Linguistic Constraints	[20]; [23] & [25]
No simple procedures and guidelines	[22] & [39]
Trade agreements	[22] & [25]

5. RESEARCH METHODOLOGY

The main objective of this work is to investigate the Constraints to e-commerce adoption in SMEs in Kenya. To fulfill the objective and achieve the goal, a framework for e-commerce adoption Constraints in SMEs was used and a questionnaire was designed to collect the required information.

5.1 Framework for E-commerce Adoption constraints in SMEs:

E-commerce adoption is related to the level of ICT acquisition or adoption; therefore, investigation should be done with regarding to factors affecting ICT adoption in SMEs. The available researches reveal significant factors dealing with ICT and e-commerce adoption in SMEs, thirty Constraints to e-commerce adoption were gathered from the literature. Several experts and professionals were interviewed to help in grouping the Constraints. All interviewees agreed to group the thirty Constraints into six groups as shown in the conceptual framework in figure (1).

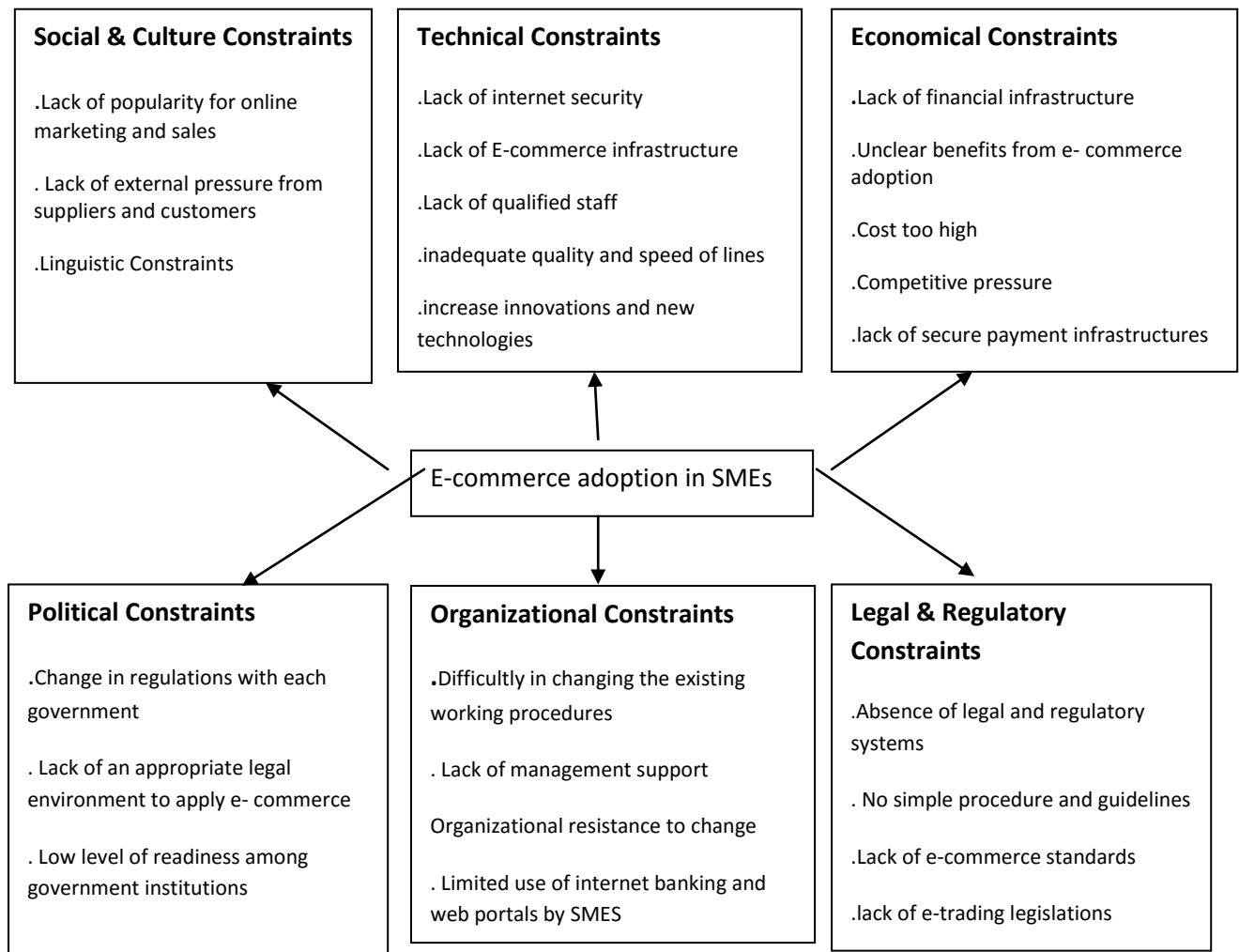


Figure 1: Conceptual framework for e-commerce adoption Constraints in SME

5.2 Questionnaire Design:

Structured questionnaire was used for data collection. The questionnaire was designed based on the conceptual framework for e-commerce adoption Constraints in SMEs. The questionnaire consists of six groups with twenty six suggested Constraints as shown in Appendix (I). in part —A1, the participants were asked to rate their perception towards the most important constraints that affects e-commerce adoption within their enterprises on a five-point Likert-type scale with anchors from —5- Strongly agreeel to —1- Strongly disagreeel; whereas in part —B1, they were asked to mention the highest e-commerce applications. The rating used to assess the degree of importance for each group of Constraints or single barrier is ranked according table (2). The group of Constraints or single constraint receives strong or medium rating is accepted as an effective constraint on e-commerce adoption in SMEs.

Table (2): Rating used to assess group of Constraints or single Constraint

S.No	Criteria
1	If the amount of population mean is greater than or equal 4.00, group of Constraints or single constraint has strong effect
2	If the amount of population mean is greater than or equal 3.00 and less than 4.00, group of Constraints or single barrier has medium effect
3	If the amount of population mean is less than 3.00, group of Constraints or single barrier has low effect

5.3 Research Sample and Questionnaire Distribution:

The target population comprised small and medium enterprises (SMEs) in small and medium enterprises in Kisii town , Kisii county , Kenya . Stratified random sampling was used in selecting 60 Small and Medium Enterprises in Kisii working in the following fields:

Wood and its Products

Paper Products, Printing & Publishing

Engineering - Electronic & Electrical Industries

Lighting - Electricity & Power Production

Service & Maintenance Centers

Two conditions were applied when selecting the sample: acceptance to participate and experience with e-service applications or at least has initiatives to apply e-commerce. After personal contact, thirty seven enterprises were agreed to participate in the study conditioning to hide their names. Questionnaires were distributed via mail; Email and personally (two copies for each enterprise). To assure the participants quick If the amount of population mean is less than 3.00, group of Constraints or single barrier has low effect and correct response; the questionnaire copies were sent directly to the owners and/or managers. The total numbers of received questionnaires were 37 copies out of 60 with total response rate 74 as shown in table (3).

Table (3): Response rate

Sector	No. of enterprises	No. of questionnaires		response rate
		distributed	received	
Wood and its Products	5	10	7	70 %
Paper Products, Printing & Publishing	5	10	8	80%
Electronic & Electrical Industries	11	22	20	90.91%
Electricity & Power Production	8	16	13	81.25 %
Service & Maintenance Centers	8	16	12	75 %
Total	37	74	60	81.08 %

6. RESULTS AND DISCUSSIONS

Some enterprises have websites (group of adopters 45 %) as shown in table (4), but most of them did not provide online sales processing; order tracking; online procurement and online payment. The top application being implemented by most of enterprises is electronic advertising (displaying enterprise information and products/services offered) as shown in table (5). The results show that there is no significant differences exist between enterprises that adapting and non-adapting ecommerce, so all respondents were combined to make a single sample. From the descriptive analysis’s perspective, the average importance for the six groups of Constraints ranged from 3.82 to 4.02 as indicated in table (6). Also, the results show that the twenty six Constraints receive medium and strong rating (average importance between 3.1 and 4.63).

Table (4): Website usage

Sector	Adopting e-commerce (%)	
	Yes	No
Wood and its Products	30.0	70.0
Paper Products, Printing & Publishing	38.46	61.54

Electronic & Electrical Industries	43.33	56.67
Electricity & Power Production	63.67	36.33
Service & Maintenance Centers	33.33	66.67
Total	41.76	58.24

Table (5): Usage of e-commerce applications

E-commerce Applications	Percentage (%)	
	In use	Not in use
Electronic Marketing	60.53	39.47
Customer Support Service	76.32	23.68
Order and Delivery	42.11	57.89
Payment System	26.32	73.68

Table (6): Average importance for the six groups of Constraints

Groups of Constraints	Mean
Social & Culture Constraints	3.79
Technical Constraints	4.02
Economical Constraints	3.82
Political Constraints	3.98
Organizational Constraints	3.83
Legal & Regulatory Constraints	4.00

All respondents agreed that lack of Internet security (4.63) is the highest barrier that inhibit the implementation of e-commerce in SMEs in Kenya, whereas the majority (over 80%) of respondents ranked the following Constraints: limited use of Internet banking and web portals by SMEs (4.33); cost too high (4.22); changes in government policy and lack of e-commerce standards (4.20) as the most important Constraints as shown in table (7). Constraints like difficulty in changing the existing working procedures (3.1); and lack of external pressure from suppliers and customers (3.29) received low importance compared with other Constraints as shown in table (8).

Table (7): Average importance for the highest Constraints in the six groups

Constraints	No. of participants					Mean
	1	2	3	4	5	
Lack of Internet security	0	0	0	14	23	4.6216
Limited use of Internet banking and web portals by SMEs	1	2	3	9	22	4.3243
Limited use of Internet banking and web portals by SMEs	1	1	4	11	19	4.4054
Limited use of Internet banking and web portals by SMEs	1	2	1	12	19	4.3514
Limited use of Internet banking and web portals by SMEs	1	2	3	14	17	4.1081
Limited use of Internet banking and web portals by SMEs	1	2	4	12	21	4.5946
Lack of awareness of e-commerce benefits	0	1	3	11	18	3.9189
Absence of legal and regulatory systems	2	3	13	2	17	3.7838
lack of qualified staff	1	3	4	13	16	4.0811
Change in regulations with each Government	2	2	1	12	18	3.0729

Table (8): Average importance for the lowest Constraints in the six groups

Constraints	No. of participants					Mean
	1	2	3	4	5	
Difficulty in changing the existing working procedures	11	4	3	9	10	2.9730
Lack of external pressure from suppliers and customers	4	6	8	13	6	3.29730
Unclear benefits from e-commerce adoption	8	4	4	8	14	3.51351
Lack of management support	6	4	2	11	15	3.7568
Low level of readiness among government institutions	3	4	8	8	17	4.1081
Lack of e-trading legislations	2	3	6	11	15	3.9459
Lack of an appropriate legal environment to apply e-commerce	5	3	2	10	17	3.8378

These findings were in accordance with the results in similar studies conducted by Kartiwi & MacGregor [32] in Indonesia; Kshetri [17] in Nepal; Kapurubandara & Lawson [22] in Sri Lanka; Fathian et al. [30] in Iran; Alshehri & Drew [20] in Saudi Arabia; Alamro & Tarawneh, [21] in Jordan and Olatokun & Bankole [28] In Nigeria. In reference to the study by El-Nawawy and Ismail [13], after more than fifteen years, most of e-commerce Constraints mentioned in this study were solved except cost and legal issues still need some improvements.

7. CONCLUSIONS

E-commerce has the potential to greatly improve how enterprise operates internally and how it serves its customers. E-commerce is much more than a tool for improving cost-quality ratios in SMEs services. This preliminary research investigated the factors that influence and inhibit the implementation of e-commerce in SMEs in Kenya. Based on the literature and the results of this research, the following conclusions are drawn.

First of all, the results showed that most of SMEs in Kenya have only adopted basic applications. They widely adopted the most common e-commerce technologies (e-mail and Internet) as additional marketing tools to display enterprise 's products and services information, rather than as an e-commerce platform to enable online transactions. Indeed, the adoption of e-commerce applications like online payment system, order processing is at a relatively low level. The findings implied that more efforts are needed to help and encourage SMEs in Kenya to speed up e-commerce adoption, particularly the more advanced applications.

Secondly, factors that may hinder the implementation of e-commerce are: lack of Internet security and limited use of Internet banking and web portals by SMEs. So, security and privacy are critical issues that need to take the highest level of priority in e-commerce implementation process. Thirdly, with regard to the planning and implementation of e-commerce, creating a uniform strategic plan for e-commerce projects is the first step for successful adoption of e-commerce. Also, issues relating to Kenyan culture and societal structure should be addressed very carefully to influence and convince the Kenyan citizens to participate and become involved in e-commerce systems. Fourthly, citizen's awareness of e-commerce and other new e-services need be addressed to raise and promote the e-commerce benefits and advantages.

8. RESEARCH RECOMMENDATIONS

Based on the research result, the following suggested recommendations could help successful adoption of e-commerce in Kenyan SMEs:

1. Develop a political vision; strategic objectives; policies and design mechanisms for the cooperation between parties to control e-services, regardless type of service.
2. Adopt programs to protect the information to prevent misuse and to increase Internet security.
3. Attention and media publicity to increase public awareness to push customers and employees to make use of e-commerce.

4. Determine the strategic priorities of e-commerce adoption and redesign some of the actions in order to cope with the provision of e-commerce.
5. Study and simulation of the best experiences of e-government worldwide.
6. Continued focus on improving technical infrastructure necessary for the operation of e-commerce and the procedures and internal systems support e-commerce.

9. LIMITATION OF THE STUDY

It should be noted that this study has several limitations. The data for the study were collected from various industry sectors, and it is not possible to make sector specific conclusions. Also, this is a quantitative study and further qualitative research is required to gain a better understanding of the key issues of e-commerce adoption in SMEs.

REFERENCES

- [1] Munyange, M., M., (2012). *The Influence of the Provision of Mobile Money Transfer service on the socio-Economic Status of the service providers*; Case of Nairobi central Business District, Kenya, Nairobi Unpublished Masters theses.
- [2] Fillis I., Johansson U. & Wagner B., (2003)—*A conceptualization of the opportunities and Constraints to e-business development in the smaller firm*, Journal of Small Businesses and Enterprise Development, 10(3): 336-344.
- [3] Mbogo M., (2010). *The Impact of Mobile Payment on success and growth of Micro- of M-PESA in Kenya* .The journal of Language, Technology and Entrepreneurship in Africa, pp , 182-202.
- [4] Taylor M. & Murphy A. (2004). *SMEs and e-business*, Journal of small business and enterprise development, 11(3): 280 – 289.
- [5] Kapurubandara M. (2009). *A framework to e-transform SMEs in Developing Countries*’, Electronic Journal of Information Systems in Developing Countries, 39(3): 1-24.
- [6] EIU, Economist Intelligence Unit, 2009, Available at: http://www2.accaglobal.com/documents/surviving_drought.pdf.
- [7] R.OK, (2013). *Ministry of finance and planning Annual Report*. Government press Nairobi, Kenya.
- [8] Fraser J., Fraser N. & McDonald F.(2000). *The strategic challenge of electronic commerce*, Supply Chain Management: An International Journal, 5(1): 7-14.
- [9] Opiyo, R., A. (2009) *ICT Application to informal*. Sector the Case of Kariokor Market MSE cluster in Nairobi, Urban Forum.
- [10] Terzi N. (2011). *The impact of e-commerce on international trade and Employment*, Procedia Social and Behavioral Sciences, 24: 745–753.
- [11] Huff S. & Young P. (2006). *SMEs and E-commerce: Current Issues and Concerns: A Preliminary Report*, International Conference on E-commerce, Kuala Lumpur, Malaysia, 2000.
- [12] Stockdale R. & Standing C. (2006) —*A classification model to support SME e-commerce adoption initiatives*, Journal of Small Business and Enterprise Development, 13(3): 381-394.
- [13] El-Nawawy M. & Ismail M. (1999). *Overcoming deterrents and impediments to electronic commerce in light of Globalization*, Proceedings of the 9th annual conference of the internet society, INET 99, San Jose, USA, 22 - 25 June.
- [14] Cloete E., Courtney S. & Fintz J.(2002) —*Small businesses” acceptance and adoption of e-commerce in the western-cape province of South-Africa*, Electronic Journal on Information Systems in Developing Countries, 0(4): 1–13. Available at: <http://www.ejisdc.org>.
- [15] Chen S. (2004). *Adoption of Electronic Commerce by SMEs of Taiwan*, Electronic Commerce Studies, 2(1); 19-34.

- [16] Kaynak E., Tatoglu E. & Kula V. (2005). *An analysis of the factors affecting the adoption of electronic commerce by SMEs: evidence from an emerging market*, International marketing Review, 22(6): 632 – 640.
- [17] Kshetri N. (2007). *Constraints to e-commerce and competitive business models in developing countries: A case study*, Electronic Commerce Research and Applications, , 6: 443–452.
- [18] Rakhmanov E. (2009). *The Constraints Affecting E-government Development in Uzbekistan*, 4th International Conference on Computer Sciences and Convergence Information Technology. ICCIT '09, 24-26 Nov. Seoul, South Korea: 1474 – 1480.
- [19] Olatokun W. & Kebonye M. (2010). *e-Commerce Technology Adoption by SMEs in Botswana*, International Journal of Emerging Technologies and Society, 2010, 8(1): 42 – 56.
- [20] Alshehri M. & Drew S. (2009). *Challenges of e-Government Services Adoption in Saudi Arabia from an e-Ready Citizen Perspective*, World Academy of Science, Engineering and Technology, 66: 1053-1059.
- [21] Alamro S. & Tarawneh S. (2011). *Factors Affecting E-Commerce Adoption in Jordanian SMEs*, 16 Constraints to E-Commerce Adoption in Egyptian SMEs European Journal of Scientific Research, 64(4): 497-506.
- [22] Kapurubandara M. & Lawson R. Mergence; (2007) *Merging and Emerging Technologies, Processes, and Institutions*, 20th Bled e-Conference e-commerce, June 4 - 6, 2007; Bled, Slovenia.
- [23] Lawrence J. & Tar U. (2008). *Constraints to ecommerce in developing countries*, Information, Society and Justice, 3(1): 23-35.
- [24] Zaied A., Al-Khairalla F. & Al-Rashed W., (2007), 5(1): 77 - 86 —*Assessing e-Readiness in the Arab Countries: Perceptions towards ICT Environment in Public Organizations in the State of Kuwait*, Electronic Journal of e-Government,.
- [25] Al jehail A., (2008). *Success factors towards applying e-services in ministry of defense in the State of Kuwait*, M.Sc. Thesis in technology Management, and Arabian Gulf University, Bahrain.
- [26] MacGregor, R. and Vrazalic, L. (2005). *A basic model of electronic commerce adoption Constraints: a study of regional businesses in Sweden and Australia* Journal of small business and enterprise development, 12(4): 510 - 527.
- [27] Hourali M., Fathian M., Montazeri A. & Hourali A (2008) . *A Model for E-Readiness Assessment of Iranian Small and Medium Enterprises*, Journal of Faculty of Engineering, 41(7): 969-985.
- [28] Olatokun W. & Bankole B. (2011). *Factors Influencing Electronic Business Technologies Adoption and Use by Small and Medium Scale Enterprises (SMES) in a Nigerian Municipality*, Journal of Internet Banking and Commerce, 16(3): 1-26
- [29] Chitura T., Mupemhi S., Dube T. & Bolongkikit J. (2008). *Constraints to Electronic Commerce Adoption in Small and Medium Enterprises: A Critical Literature Review*, Journal of Internet Banking and Commerce, 13(2): 1-13. Available at: <http://www.arraydev.com/commerce/jibc>.
- [30] Fathian M., Akhavan P. & Hoorali M.(2008). *E-readiness assessment of non-profit ICT SMEs in a developing country: The case of Iran*, Technovation, 28: 578 – 590.
- [31] Thulani D., Tofara C. & Langton R.(2010). *Electronic Commerce Benefits and Adoption Constraints in Small and Medium Enterprises in Gweru, Zimbabwe*, Journal of Internet Banking and Commerce, 15(1): 1-17.
- [32] Kartiwi M. & Mac Gregor R.(2007). *Electronic commerce adoption Constraints in small to medium-sized Enterprises (SMEs) in Developed and Developing countries: A cross- country comparison*, Journal of Electronic Commerce in Organizations, 5(3): 35-51.
- [33] Quader S. & Abdullah M. (2009). *Constraints to SMEs: A Rotated Factor Analysis Approach*, A Research Journal of South Asian Studies, 24(2): 334 -350.

- [34] Lawson R., Adcock C., Cooper J. & Burges L.(2008). *Factors affecting adoption of electronic technologies by SMEs: an Australian study*, Journal of small Business and enterprise development, 10(3): 265 – 276.
- [35] Looi H. (2003). *A model of factors influencing electronic commerce adoption among small and medium enterprises in Brunei Darussalam*, International Journal of information technology, 10(1): 72- 87.
- [36] Ramsey E., Ibbotson P., Bell J. & Gray D. (2003). *E - Opportunities of service Sector SMEs: an Irish cross- border study*, Journal of small business and enterprise development, 10(3): 250 – 264.
- [37] Sarkar A. (2008). *E-Commerce Adoption and Implementation in SMEs: An Analysis of Factors*, 21st Annual Conference of the National Advisory Committee on Computing Qualifications (NACCQ), Auckland, New Zealand: 309-319.
- [38] Lane M., Vyver G., Delpachitra S. & Howard S. (2004). *An electronic commerce initiative in regional Sri Lanka: the vision for the central province*, *Electronic commerce Portall*, Electronic Journal on information systems in Developing countries, 16(1): 1 – 18.
- [39] MacGregor R. (2010). *Perception of Constraints to e-Commerce adoption in SMEs in a Developed and Developing Country: a Comparison between Australia and Indonesia*, Journal of Electronic Commerce in Organizations, 8(1): 61-82.

APPENDIX: QUESTIONNAIRE

Part A: E-commerce Adoption Constraints

Adopting e-commerce? Yes No

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree

Our enterprise does not use e-commerce because of:

Social & Culture Constraints	1	2	3	4	5
Lack of popularity for online marketing and sales					
Lack of awareness of e-commerce benefits					
Lack of external pressure from suppliers and customers					
Linguistic Constraints					
2 .Technical Constraints	1	2	3	4	5
Lack of Internet security					
E-commerce infrastructure					
Lack of qualified staff					
Lack of qualified staff					
Inadequate quality and speed of lines					
Increase innovations and new technologies					
3.Economical Constraints	1	2	3	4	5
Lack of financial infrastructure					
Lack of financial infrastructure					
Unclear benefits from e-commerce adoption					
Cost too high					
Competitive pressure					

Lack of secure payment infrastructures					
4.Political Constraints	1	2	3	4	5
Change in regulations with each Government					
Changes in government policy					
Lack of an appropriate legal environment to apply e-commerce					
Low level of readiness among government institutions					
5. Organizational Constraints	1	2	3	4	5
Difficulty in changing the existing working procedures					
Lack of management support					
Organizational resistance to change					
Limited use of Internet banking and web portals by SMEs					
6.Legal & Regulatory Constraints	1	2	3	4	5
Absence of legal and regulatory systems					
Lack of e-commerce standards					
Lack of e-trading legislations					

Part B: E-commerce Applications:

E-commerce Applications	In use	Not in use
Electronic Marketing		
Electronic Advertising		
Customer Support Service		
Order and Delivery		
Payment System		