
Adoption of ICTs and Enterprise Development in the SMEs Sector: An Overview

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Abstract: The objective of this study is to investigate the relevance of ICTs adoption and its significance to enterprise development. The paper, which is a literature based paper, employed library research method in coming up with the major findings of the study. Key factors that are identified as the major determinants of ICTs adoption in SMEs include level of awareness and technological cognizance, knowledge and ICTs skills, external pressure from business partners, and government policy. The benefits of adopting ICTs include overall contribution to economic growth and development, advances in new products and process, creating new markets, and providing a platform for the exchange of experiences, options, and opportunities for mutual cooperation and technology transfer. Some of the key challenges of adopting ICTs in the SMEs sector include inadequate physical infrastructure, low level of knowledge and ICTs skills, weak ICTs policy framework. The paper recommends the need to address inadequacy of power, internet service and mobile telecom accessibility in the SMEs sector. Also, there is need for support and funding from government and donor agencies to aid ICTs adoption and development in enterprises.

Keywords: Adoption, Enterprise Development, Information and Communication Technologies (ICTs), Infrastructure, Developing Countries

1. Introduction

The adoption of Information and communication technologies (ICTs) can be a strong factor in nurturing enterprise development of a country and Nigeria is not an exception. ICTs have been acknowledged, both in academia and policy making arena, for their potential in opening up new enterprise development opportunities at various levels ranging from firm, industry, and national level (Fong, 2009). At the level of firm, ICTs can facilitate communications and coordination of processes within a firm or between firms in a supply chain (Fong, 2005; Hammant, 1995; Jin, 2006; Porter, 2001; Porter & Miller, 1985). Similarly, the technologies can be used in improving management decision-making process through enhanced marshalling of information. The resultant gains may be in form of scale economies, cost-savings, increased productivity, and improved competitiveness (Bourlakis & Bourlakis, 2006; Farrell, 2003; Hammant, 1995; Howgego, 2002; Pilat, 2004; Porter & Millar, 1985). ICTs can promote effective functioning or governance of market at industry level (James, 2000; Malone, Yates, & Benjamin, 1989; Matsuda, 1994; OECD, 2005). Consequently, all these improvements in efficiency and access are going to be aggregated at the national level in the form of economic growth or sustainability, and welfare gains (Madden & Savage, 2000; OECD, 2005).

It has been widely acknowledged that small and medium enterprise (SMEs) not only play vital role in the economy of a country, but are critical to the country's economic stability (Ashrafi & Murtaza, 2008). In New Zealand SMEs make up more than 99 per cent of all businesses and account for about 60 per cent of employment. In the US, more than half of all the employment comes from firms with fewer than 500 employees (Baldwin, Jarmin, Tang, 2001). In the UK, SMEs employ 67 per cent of jobs and 59 per cent of GDP. As of December 2005, a total of 600,000 SMEs were registered in Malaysia (SME bank). They contribute 27.3 per cent of total manufacturing, 25.8 per cent of value-added production, owned 27.6 per cent of fixed assets, and employed 38.9 per cent of the country's workforce (SMIDEC, 2002). Together with new growth areas in information and communications technologies (ICTs), the services sector was able to maintain its premier position in terms of its share of GDP at 57.4 per cent (Shah Alam & Mohammad Noor, 2009). In most countries SMEs generate a substantial share of GDP and a key source of new jobs as well as breeding ground for entrepreneurship and new business ideas. This prompted some nations like the United States of America, UK, Japan, Australia, New Zealand, Canada, and other developed, as well as developing countries like Nigeria to make policies to facilitate the growth of SMEs. Realizing the significance of ICTs to SMEs New Zealand spent about 10 per cent of her GDP on ICT, making it one of the top ranking countries in the world (Clarke, 2004). Estimates from the World Bank indicate that SMEs have contributed over 55 per cent of GDP in OECD countries and between 60 to 70 per

cent of GDP in middle income and low income countries generating an estimate of 60 to 70 per cent employment (Oman Economic Review, 2007).

However, Fong (2009) observed that developing countries like Nigeria are latecomers to the ICTs revolution, but if they can emulate industrialized countries in their adoption of ICTs, they will be afforded the same technological opportunities. Fong further argued that successful exploitation of such opportunities by developing countries can significantly narrow the economic gap between them and developed countries as they catch up in economic development.

1.2 Statement of the Problem

It is an established fact globally that the Small and Medium Enterprises (SMEs) sector is a key engine to economic growth and development. This sector is responsible for most of the advances in new products and process, provides most of the employment opportunities and is also a key indicator of the overall performance of an economy. Yet the dynamic nature of this sector also makes it vulnerable to a high mortality rate occasioned by sudden shifts in economic policy, global trends, and global shocks in international markets. Previous research showed that potential growth and survival of SMEs is largely dependent on the environment surrounding the companies (Achmad-Maulana, 2006; Aremu & Adeyemi, 2011; Nawai & Sharif, 2011; Oni, Paiko & Ormin, 2012). Most SMEs continue to use informal methods in their search for information and are unable to access the necessary information, on such things as sources of finance and credit for businesses, and the right prices and markets for their goods (Sánchez, 2011). They heavily rely on informal networks of information, especially friends and relatives, as well as customers' reactions and their own experiences to start and run their businesses (Kiveu & Ofafa, 2013).

Available evidence shows that ICTs have the potential of transforming traditional firm transactions and creates new market places by altering the process by which transactions take place, creating new products and services and by creating new markets in time, space and information that did not previously exist. The power of ICTs enables business networking within and between enterprises and geographical regions to grow. This, in turn, provides a platform for the exchange of experiences, options and opportunities for mutual cooperation and technology transfer. The potential benefits of ICTs to SMEs include enhancing efficiency, reducing costs and broadening the marketplace both locally and globally. Therefore, investment in ICTs in the SMEs sector makes a firm to be more productive, more competitive, network ready and able to exploit new trading opportunities (Kiveu et al., 2014).

Currently, the performance of SMEs in Nigeria is below expectations. Aminu and Shariff (2015) opined that the contribution of SMEs in Nigeria to the national GDP is poor for numerous reasons. These include inadequate infrastructure/financial support to businesses operating within the various sectors; limited application of innovation to operations within the segment; that is lack of Information and communication Technologies. Information plays a key role in market access and is the main core of any marketing system. Market access in developing countries is a major challenge for small businesses due to market imperfections that can be attributed to lack of market information, lack of linkages between the actors in the supply chain, distortions or absence of inputs and output markets, high transaction cost and the high presence of trade intermediaries.

1.3 Objectives of the Study

Based on the foregoing, the aim of this paper is to investigate the linkage between adoption of ICTs and enterprise development in the SMEs sector. Specifically, the objectives of the paper are to:

- i. Identify the determinants of ICTs adoption in SMEs sector.
- ii. Determine the role of ICTs adoption in enterprise development.
- iii. Examine the challenges of adopting ICTs in the SMEs sector.

2. Literature Review

2.1 Small and Medium Enterprises (SMEs)

There is no generally accepted definition of Small and Medium Enterprises (SMEs) and this is due to the fact that most of the classification of businesses into either large or small scale is seen as always subjective

and qualitative judgment always reflecting a specific point of emphasis of particular writers or policy makers (Nuwagaba & Nzewi, 2013; Olise, Anigbogu, Edoko, & Okoli, 2014). However, most of the definitions are based on a mix of parameters. The Small and Medium Sized Development Agency of Nigeria (SMEDAN) defines SMEs based on the following criteria: a micro enterprise as a business with less than 10 people with an annual turnover of less than ₦5,000,000.00, a small enterprise as a business with 10-49 people with an annual turnover of ₦5 to 49,000,000.00; and a medium enterprise as a business with 50-199 people with an annual turnover of ₦50 to 499,000,000.00. Similarly, the National Economic Reconstruction Fund (NERFUND) put the ceiling for small-scale enterprises at 10 million Naira. According to Akomea-Bonsu and Sampong (2012), Bolton committee in 1971 formulated an economic definition. Under the economic definition, a firm is regarded as small if it has relatively small share of their market place, managed by owners or part owners in a personalized or informal way and not through medium of a formalized management structure and it is independent in the sense of not forming part of a large enterprise. With the emergence of the Small and Medium Enterprises Equity Investment Scheme (SMEEIS) in 1999 the bankers committee in 2006 defined Small and Medium Enterprise as any enterprise with a maximum asset base of ₦1.5billion (excluding land and working capital), and with no lower or upper limit of staff. However, Kalanje (2002) argued that definition of SMEs is in terms of size or market share, capital base, numbers of employees, turnover, and asset value among others. Others categorized businesses with less than ten employees as a Micro Enterprise; between ten to fifty as Small Enterprise, and between fifty to two hundred and fifty employees as Medium-sized Enterprises (Ashrafi & Murtaza, 2008; Kapurubandara & Lawson, 2006). Impliedly, these characteristics of the small and medium scale enterprise affect the level of adoption of ICT in the sector.

2.2 Information and Communication Technologies (ICTs)

According to Olise, Anigbogu, Edoko, and Okoli (2014), Information and Communication Technologies (ICTs) is seen as a term that consists of all technical means for processing and communicating information. The convergence and integration of Information Technologies and Telecommunication Technology metamorphosed into ICTs (Akunyili, 2010). Specifically, ICTs include all digital technology and all its uses and variants, including the computer, the internet, mobile telephony, the different electronic applications such as e-banking, e-commerce, e-business, digital media, broadband technology, to mention a few. Thus, ICTs are seen as a combination of technologies that facilitate communication and aid in capturing, processing and transmitting information electronically. Some of the commonly used ICTs in many developing economies include radio, television, and print media. In addition, modern ICTs such as desktop computers, laptops, handheld devices, wired and wireless intranet, data storage, softwares, internet, fax, electronic mails, mobile phones, to mention a few, are now available in many countries and they are effective means of communicating knowledge and information (Parliamentary Office of Science and Technology, 2006; Apulu & Lathman, 2006; Kweku, 2006).

Theoretical literature (Mutua and Wasike, 2009) explaining ICTs adoption suggested several existing theories and different approaches that help to explain and advance the understanding of ICTs adoption in small and medium enterprises. Notable among the theories include: the Innovation Diffusion Theory (IDT) (Rogers, 1962), Technology Acceptance Model (TAM) (Davis, 1985), The Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Morris, Davis, & Davis, 2003) which deals with the factors affecting the diffusion of innovation and predicting the attitude of potential users towards a new technology by focusing on individual perceptions respectively. According to Forman and Goldfarb (2006) TAM has proven to be a robust model that is frequently used to study user acceptance of ICT. It is widely viewed as an information system theory which helps to understand the adoption and use of internet (Gibbs, Sequeria & White, 2007; Davis, 1989). The theory helps to understand how adopters come to accept or reject the use of ICT in their small business operations.

3. Research Methodology

Based on the foregoing, this paper is aimed at exploring the role of ICTs adoption in promoting enterprise development particularly in developing countries. Using a library research approach, the paper reviewed both empirical and conceptual papers as well as developmental agencies reports on ICTs and the SMEs sector in order to examine the link between the two concepts as reported in previous studies.

4. Determinants of ICTs Adoption in SMEs Sector

The relevance and significance of ICTs in the SMEs sector cannot be overestimated. Available evidence from the literature shows that there are several factors that determine the adoption of ICTs by SMEs (Olise, Anigbogu, Edoko & Okoli, 2014; Shah Alam & Muhammad Noor, 2009). Level of awareness about ICTs plays major role in its adoption by SMEs. Mofleh, Wanous, & Strachan, (2008) defined awareness as user's knowledge about the existence and advantages of using the ICTs. Similarly, a variable related to awareness is 'technology cognizance', which was studied in Nambisan, Agarwal, & Tanniru, (1999). Rogers, (1995) cited in Nambisan, Agarwal, & Tanmiru (1999: 372) defined it as "user's knowledge about the capabilities of a technology, its features, potential use, and cost and benefits, i.e., it relates to awareness-knowledge". Based on the definition of awareness and technology cognizance, the current study coined and operationalized the construct as 'ICTs awareness' and defined it as the user's knowledge of the existence, features, costs, benefits and simplicity or otherwise of using ICTs in the SMEs business operations.

On one hand, the greater the benefits perceived by the SMEs the higher the tendency of ICTs adoption. The studies of Giovanni and Mario (2003) established that ICTs adoption in SMEs can offer wide range of opportunities for improving their competitiveness by providing access to new market opportunities, expansion and specialized information services. Similarly, OECD (2004) confirmed that adoption of ICTs in SMEs can improve information and knowledge management within the firm and increase the speed and reliability of transactions for both business-to-business (B2B) and business-to-consumer (B2C). In addition, SMEs can exchange real-time information and sustain closer contact with suppliers and customers. Also, there is tendency of immediate feedback according to the customer demand in the new markets. On the other hand, according to Dixon, Thompson, and McAllister (2002) the SMEs will less likely adopt ICTs when its initial set-up cost is high. As stated earlier, small enterprises usually experience difficulty in obtaining financial resources. Consequently, any new technology such as ICTs may be considered too exorbitant to many SMEs because of their lack of financial resources (Poon & Swatman, 1999). In addition, there is low level of confidence in the ICTs due to error and failed transaction rates as the result of dysfunctional systems, networks or interfaces in countries like Nigeria. In sum, level of awareness and technology cognizance play vital role in ICTs adoption in the SMEs sector most especially in developing countries.

SMEs tend to avoid ICTs into their business if it is seen as complex to use (McGregor, 1996). ICTs knowledge and skill as well as external pressure is another important determinant of its adoption in the SMEs sector. Shah Alam and Mohammad Noor (2009) emphasized that it is very important for enterprise to determine its employee's knowledge or skills of ICTs because those knowledge or previous experiences may influence enterprise decision in adopting ICTs. There is always limited number of employees with lack of technical knowledge in most SMEs in developing countries. Reynolds (1994) argued that this lack of knowledge based employees might inhibit ICTs adoption if the owner believes that it can only be utilized using specialist staff. External pressure plays a significant role in determining ICTs adoption by SMEs. Adopting ICTs by a major customer or supplier may push an enterprise owner to adopt same (Kirby & Turner, 1993). Some observers (Julien & Raymond, 1994; Thong & Yap, 1995) opined that industry sector may be interested to adopt technology such as ICTs if competitors and trading partners or a totality of an industry adopt it. Studies by Poon and Swatman (1996) confirmed that small businesses are often forced to use ICTs by large companies.

The role of government support in the adoption of ICTs by SMEs cannot be overemphasized. Both industry and government bodies have a role to play in promoting and supporting adoption of ICTs in the SMEs sector by providing physical infrastructures. Examples abound in developed countries how the government deliberately intervenes to promote the use of ICTs in many sectors of its economy. In 1998, for instance in Australia and New Zealand, a national framework was established to ensure all internet based e-commerce systems became fully interoperable and this benefitted SMEs and their access to the market place (Doig, 2000). In Nigeria, improvements in infrastructure (including reliable and available mobile connectivity and electricity to power devices) are vital but yet to be adequately supplied. However, there are good reasons to believe that, over time, renewed investment in network infrastructure, such as is planned by major mobile phone companies, means that this will slowly improve, at least for urban hubs in Nigeria (EFInA, 2012).

5. Challenges of Adopting ICTs in the SMEs Sector

A number of studies investigate adoption of internet and e-business in SMEs sector in developed economies (Caldeira & Ward, 2002; Doczi, 2002; Koellinger, 2006; Morikawa, 2004). However, despite the significance of ICTs to enterprise development and emphasis by various policy makers to promote adoption of ICTs in the SMEs sector, available studies have shown that SMEs have been slow in adopting ICTs for various reasons (Dawn, Podnik & Dhaliwal, 2002; Lawson, Alcock, Cooper, & Burgess, 2003; Smallbone, North, Vickers & Roper, 2001). Ashrafi and Murtaza (2008) argued that large organizations have enough resources to adopt ICTs while SMEs have limited financial and human resources to adopt ICTs. Lal (2007) conducted a study on ICTs adoption in Nigerian SMEs and found that one of the major factors that militate against ICTs diffusion and intensive utilization is poor physical infrastructure. To support this argument, Fong (2009) further emphasize that developing countries would not be able to fully utilize or exploit the potential of advanced technologies like ICTs due to their limited infrastructure. Empirical evidence from UK, Poland and Portugal identified lack of ICTs skills and knowledge in SMEs sector as one of the major challenges faced by all European countries (Duan *et. al.* 2002). It is established that characteristics of the firm and industry sectors are strong contributory factors to the adoption and exploitation of ICTs by SMEs (Shiels, McIvor, & O'Reilly, 2003). In their study, Kapurubandara and Lawson (2006) categorize internal and external barriers that impede adoption of ICTs by SMEs in a developing country and Nigeria is not an exception. The internal barriers include owner manager characteristics, firm characteristics, cost and return on investment while the external barriers include infrastructure, social, cultural, political, legal and regulatory factors. According to Dutta and Coury (2003), some of the ICTs adoption challenges include legal and regulatory issues, weak ICT strategies, lack of Research and Development, and excessive reliance on foreign technology and weaknesses in ICTs implementation.

6. Conclusion

The importance of adopting ICTs in the SMEs sector continue to attract interest from academia, industry and policy making arena. This may not be unconnected with so many empirical findings that emphasize the potential of ICTs in promoting enterprise development especially in developing countries. Some of these attendant benefits include overall contribution to economic growth and development, advances in new products and process, creating new market, and proving a platform for the exchange of experiences, options, and opportunities, for mutual cooperation and technology transfer. This study provides an overview of the status of ICTs adoption in the SMEs sector. Specifically, the paper investigates the determinants of ICTs adoption, role of ICTs in enterprise development and challenges of adopting ICTs most especially in developing countries. Based on the findings of this study, it has been established that the level of awareness and technology cognizance which result in perceived benefits of perceived costs play major role in ICTs adoption by SMEs. Other major determinants of ICTs adoption are level of knowledge and skill, external pressure from other business partners, and government support. Some of the key challenges that require holistic approach from all stakeholders include inadequate physical infrastructure, lack of research and development, and excessive reliance on foreign technology. Most importantly, ICTs policy frameworks are seen as presently insufficient to ensure sustained efforts at implementation stage.

6.1 Implications and Recommendations

There is no quick-fix to promoting strong ICTs base in the SMEs sector without strengthening already weak infrastructural base in developing countries and Nigeria is not an exception. This calls for effort redirection by the government towards addressing inadequacy of power, internet service and mobile telecom accessibility. These are essential requirements and must be readily available for successful adoption of ICTs. Due to shortage of financial resources, SMEs need to be supported and funded by the government and other donor agencies in order to build the industry's capacity in the ICTs. This could be achieved through the provision of ICTs skills and knowledge sharing centres that will make training and other supporting services more available and accessible to the SMEs. Further, since external pressure is one of the determinants of ICTs adoption in small enterprises, large firms should also work together with SMEs that are in the same sector to improve their ICTs adoption capacity. This can be done by engaging them as suppliers of production inputs or distributors of finished goods.

6.2 Suggestions for Further Studies

Future research could further explore the role of international donors and development agencies in the development of ICTs and SMEs sector specifically in developing countries like Nigeria. Other areas that beg for empirical investigation are factors such as customer satisfaction, confidence level, customer skills and familiarity, and product customization and their influence on ICTs adoption in the SMEs sector.

References

- Achmad-Maulana, R. M. 2006. The Impact of Microfinance to Micro and Small Enterprise's Performance and the Improvement of Their Business Opportunity. *Working Paper in Economics and Development Studies*, [web document]. 20 pages. Available: <http://www.ip3e-unpad.org>.
- Akunyili, D. 2010. ICT and E-Government in Nigeria: Opportunities and Challenges. An Address Delivered at the World Congress on IT, Amsterdam, The Netherlands, 25-27 May, 2010.
- Aminu, I. M., & Shariff, M. N. M. 2015. Determinants of SMEs Performance in Nigeria: A Pilot Study. *Mediterranean Journal of Social Sciences*, 6(1), 156–164. <http://doi.org/10.5901/mjss.2015.v6n1p156>
- Apulu, I & Latham, A. 2009. Information and Communication Technology Adoption: Challenges for Nigerian SMEs. *TMC Academic Journal*.
- Aremu, M. A. & Adeyemi, S. L. 2011. Small and Medium Scale Enterprises as Survival Strategy for Employment Generation in Nigeria. *Journal of Sustainable Development*, 4(1), 200-206.
- Ashrafi, R., & Murtaza, M. 2008. Use and Impact of ICT on SMEs in Oman. *The Electronic Journal Information Systems Evaluation*, 3(11), 125-138.
- Baldwin, J.R., Jarmin, R.S., & Tang, J. 2001. The Trend to Smaller Producers in Manufacturing in Canada and the US. Statistics Canada Working Paper.
- Bourlakis, M., & Bourlakis, C. 2006. Integrating Logistics and Information Technology Strategies for Sustainable Competitive Advantage. *Journal of Enterprise Information Management*, 19(4), 389-402.
- Caldeira, M.M., & Ward, J.M. 2002. Understanding the Successful Adoption and Use of IS/IT in SMEs: an Explanation from Portuguese Manufacturing Industries. *Information Systems Journal*, 2(12), 121-152.
- Clarke, J. 2004. Information Systems Strategy and Knowledge-based SMEs in the Australian Biotechnology Industry: Does IS need to reorient its Thinking? *15th Australian Conference on Information Systems*, Hobart, Australia, 1-3 December.
- Davis, F. D. 1985. *A Technology Acceptance Model for Empirically Testing New End-User Information Systems: Theory and Results*. Massachusetts Institute of Technology, Sloan School of Management.
- Davis, F.D. 1989. Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, (13:3), 319-339.
- Dawn, J., Podonik, P., & Dhaliwal, J. 2002. Supporting the E-business Readiness of Small and Medium-Sized Enterprises: Approaches and Metrics", *Internet Research*, 2(12), 139-195.
- Doczi, M. 2002. *Information and Communication Technologies and Social and Economic Inclusion*. Information Technology Policy Group, Ministry of Economic Development, Manatu, Ohanga, NZ, March.
- Doig, L. 2000. Making E-Commerce Affordable. *Australian CPA*, 70(6).
- Duan, Y., Mullins, R., Hamblin, D., Stanek, S., Sroka, H., Mavhado, V., Araujo, J. 2002. Addressing ICTs Skill Challenges in SMEs: Insights from three country investigations", *Journal of European Industrial Training*, 9(26), 430-441.
- Dutta, S., & Coury, M. E. (2003). ICT Challenges for the Arab World. Chapter 8, in Dutta, S., Lanvin, B. & Pua, F. (ed.). *The Global Information Technology Report 2002-2003: Readiness for the Networked World*. World Economic Forum/Oxford University Press, New York, 116-131.
- EFInA 2012. *What does the CBN's Cashless Policy Mean for Financial Inclusion in Nigeria?* Available via www.EFInA.or.ng
- Farell, D. 2003. The Real New Economy. *Harvard Business Review*, 81(10), 104-112.
- Fong, M. (Ed.). 2005. *E-Collaborations and Virtual Organizations*. Hershey, PA: Idea Group
- Fong, M. (2009). Technology Leapfrogging for Developing Countries. *Global Information Technology IGI*, 1, 3707-317.
- Forman, C., & Goldfarb, A. 2006. *ICT Diffusion to Businesses*. Handbook of Economics and Information Systems.
- Fulantelli, C., & Mario, G. 2003. *Small Company Attitude towards ICT Based Solutions: Some Key Elements to Improve it*. Educational Technology and Society; retrieved from: <http://scholar.google.com/scholar>

- Gibbs, S., Sequeira, J., & White, M.M. 2007. Social Networks and Technology Adoption in Small Business. *International Journal of Globalization and Small Business*, 1(2), 66-87.
- Giovanni, F. & Mario, A. 2003. Small Company Attitude towards ICT based Solutions: Some Key Elements to Improve It. *Educational Technology & Society*, 6 (1).
- Hammant, J. 1995. Information Technology Trends in Logistics. *Logistics Information Management*, 8(6), 32-37.
- Howgego, C. 2002. Maximizing Competitiveness through the Supply Chain. *International Journal of Retail and Distribution Management*, 30(12), 603-605.
- James, G. 2000. Empowering Bureaucrats. *MC Technology Marketing Intelligence*, 20(12), 62.
- Jin, B. (2006). Performance Implications of Information Technology Implementation in an Apparel Supply Chain. *Supply Chain Management: An International Journal*, 11(4), 309-316.
- Julien, P.A. & Raymond, L. 1994. Factors of New Technology Adoption in the Retail Sector. *Entrepreneurship Theory and Practice*, 18(4), 79-87.
- Kalanje, C. 2002. Enhancing the Competitiveness and Growth of SMEs.
- Kapurubandara, M., & Lawson, R. 2006. *Barriers to Adopting ICT and E-commerce with SMEs in Developing Countries: An Exploratory Study in Sri Lanka*. Retrieved from http://www.collector.org/archives/2006_December/07.pdf
- Kirby, D. & Turner, M. 1993. IT and the small retail business. *International Journal of Retail and Distribution Management*, 21 (7), 20-27.
- Koellinger, P. 2006. *Impact of ICT on Corporate Performance, Productivity and Employment Dynamics*. Special Report No 01/2006, European Commission Enterprise & Industry Directorate General, Berlin.
- Kiveu, M., Ofafa, G., Adebayo, K. J., Akinmosin, A. S., Yussuf, S. E., Dada, A. M., Ahmedova, S. 2014. Factors for Increasing the Competitiveness of Small and Medium- Sized Enterprises (SMEs) in Bulgaria. *Procedia - Social and Behavioral Sciences*, 2(1), 1104-1112. <http://doi.org/10.1016/j.sbspro.2015.06.155>
- Kweku, A. K. 2006. Demystifying ICT Diffusion and Use among Rural Women in Kenya. Unpublished Paper Presented to ProLISSA 2006 Conference.
- Lal, K. 2007 Globalization and Adoption of ICTs in Nigerian SMEs. *Science, Technology Society*, 2(12), 217-244.
- Lawson, R., Alcock, C., Cooper, J., Burgess, L. 2003. Factors Affecting the Adoption of Electronic Commerce Technologies by SMEs: An Australian Study. *Journal of Small Business Enterprise and Development*, 3(10), 265-276.
- Madden, G., & Savage, S.J. 2000. Telecommunications and Economic Growth. *International Journal of Social Economics*, 27(7-10), 893-906.
- Malone, T.W., Yates, J., & Benjamin, R.I. 1989. The Logic of Electronic Markets. *Harvard Business Review*, 67(3), 166-170.
- Matsuda, T. 1994. The Use of Information Technology to Achieve Accurate Pricing in Agricultural Commodity Markets in Japan. *Information Technology and People*, 7(3), 37-49.
- MacGreor. 1996. Attitudes of Small Business to the Implementation and Use of IT: are we basing EDI Design Initiatives for Small Business on Myths? *9th International EDI-IOS Conference*.
- Mofleh, S., Wanous, M., & Strachan, P. 2008. The Gap between Citizens and E-Government Projects: The Case for Jordan. *Electronic Government International Journal*, 5 (3), 275-287.
- Morikawa, M. 2004. Information Technology and the Performance of Japanese SMEs. *Small Business Economics*, 3(23), 171-177.
- Mutua, J.M. & Wasike, W.S.K. 2009. *ICT Adoption and Performance of SMEs in South Africa*. Special Research Project on ICT and Economic Development in Africa Submitted to the Director of Research African Economic Research Consortium (AERC).
- Nambisan, S., Agarwal, R., & Tanmiru, M. 1999. Organizational Mechanisms for Enhancing User Innovation in Information Technology. *MIS quarterly*, 23 (3), 365-395. doi:10.2307/249468
- Nawai, N. & Shariff, M. N. M. 2011. The Importance of Micro Financing to the Microenterprises Development in Ealaysia's Experience. *Asian Social Science*, 7 (12), 226-238
- Nuwagaba, A., & Nzewi, H. 2013. Major Environmental Constraints on Growth of Micro and Small Enterprises in Uganda: A Survey of Selected SMEs in Mbarara Municipality. *International Journal of Cooperative Studies*, 1(2), 128-139.
- Olise, M.C., Anigbogu, T.U., Edoko, T.D., & Okoli, M.I. 2014. Determinants of ICT Adoption for Improved SME's Performance in Anambra State, Nigeria. *American International Journal of Contemporary Research*, 7(4), 163-176.
- Oman Economic Review. 2007. SMEs Forum-Making Life Easy. Available at

- http://www.oeronline.com/php/2007dec/sme_forum/php
- Oni, E. O. Paiko, I. I. & Ormin, K. 2012. Assessment of the Contribution of Microfinance Institutions to Sustainable Growth of Small and Medium Scale Enterprises in Nigeria. *Interdisciplinary Journal Of Contemporary Research In Business*, 3(9), 1099-1110
- Organization for Economic Cooperation and Development. 2005. *Good Practice Paper on ICTs Economic Growth and Poverty Reduction*. Retrieved from <http://www.oecd.org/dataoecd/2/46/35284979.pdf>.
- OECD.(2004. The Economic Impact of ICT – Measurement, Evidence and Implications, OECD, Paris.
- Parliamentary Office of Science and Technology 2006 ICT in Developing Countries. Postnote. March 2006, no. 261. [WWW document]. URL <http://www.parliament.Uk.document/upload/potpn261.pdf>
- Pilat, D. 2004. The ICT Productivity Paradox: Insight from Micro Data. *OECD Economic Studies*, 2004/1(38), 37-65.
- Porter, M.E. 2001. Strategy and the Internet. *Harvard Business Review*, 79(3), 62-78.
- Porter, M.E., & Millar, V.E. 1985. How Information Gives You Competitive Advantage. *Harvard Business Review*, 63(4), 149-160.
- Poon, S. & Swatman, P.M.C. 1996. Electronic Networking among Small Business in Australia –an Exploratory Study. *International Conference*, 446-460.
- Poon, S. & Swatman, P.M.C. 1999. A Longitudinal Study of Expectations in Small Business Internet Commerce. *International Journal of Electronic Commerce*, 3(3), 21-33.
- Reynolds, W., Savage, W. & Williams, A. 1994. Your own Business: A Practical Guide to Success, ITP.
- Rogers, E. M. 1962. *Diffusion of Innovation*. New York.
- Sanchez, J.C.(2011). Entrepreneurship as a Legitimate Field of Knowledge. *Psicothema*, 23, 427-432.
- Shah Alam, S., & Mohammad Noor, M.K. 2009. ICT Adoption in Small and Medium Enterprises: An Empirical Evidence of Services Sectors in Malaysia. *International Journal of Business and Management*, 4(2), 112-125. Available at doi.10.5539/ijbm.v4i2p112.
- Shiels, H., McIvor, R., & O'Reilly, D. 2003. Understanding the Implications of ICT adoption: Insights from SMEs. *Logistics Information Management*, 5(16), 312-326.
- Smallbone, D., North, D., Vickers, I., & Roper, S. 2001. Innovation and the Use of Technology in Manufacturing Plants and SMEs: An Inter-Regional Comparison”, *Proceedings 24th ISBA National Small Firms Conference: Exploring the Frontiers of Small Business* (Hinckley, Leicestershire: ISBA), 289-308.
- SMIDEC. 2002. SMI Development Plan 2001-2005, Percetakan Nasional Malaysia Berhad, Kuala Lumpur.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. 2003. User Acceptance of Information Technology: Toward a Unified View. *MIS quarterly*, 425-478.