

# Information Technology for Development in Small and Medium-Sized Enterprises

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## ABSTRACT

Development is a concept that is often used to describe growth in organizations and the regions in which they reside. While research in Information Systems (IS) recognizes the importance of Information Technology (IT) in improving the organizational performance, a great deal of emphasis is given towards understanding large organizations. While social-economic development and transformation relies on new technological infrastructures and organizational changes, there is still a weak link between the organization studies with Information Technology (IT) as it relates to the growth of organizations. It appears that a greater research focus is needed in understanding the use of IT in Small and Medium-Sized Enterprises (SMEs). It is critical to understand the role of IT artifacts in SMEs and whether the use of IT could lead to their growth and development. This research-in-progress study provides an overview of what is known about Information Technology for Development (IT4D) in SMEs, identifies the knowledge gaps, and proposes a framework for future research. The contribution of this paper is in identifying how do IS researchers approach and conceptualize IT4D research on SMEs.

**Keywords:** IT for Development, Development, Literature Review, Small and Medium-Sized Enterprises, Small businesses, Micro-Enterprises.

## **INTRODUCTION**

Small and Medium-Sized Enterprises (SMEs) have attracted research interest since the early 1980s from researchers in management (Carland et al., 1984; Yap et al., 1992), finance (Petersen & Rajan, 1994), economics and statistics (Bates, 1990), marketing (Moen & Servais, 2002), organization studies (Paniccia, 1998), Information Systems (IS) (DeLone, 1988), and many other research domains (Cooper, 1981; Yap et al., 1992; Strahan & Weston, 1998). As IS researchers, we are particularly interested in the IT artifacts that are embedded in organizations, applications, technologies, and people (Zhang et al., 2011). Those IT artifacts embedded within the organizations are widely studied by the IS researchers. However, while the social-economic development and transformation relies on new technological infrastructures and organizational changes, there is still a weak link between the organization studies with IT (Orlikowski & Barley, 2001). As a reference discipline, Information Systems are often relied upon to assist growth and development, although SMEs, particularly small businesses, often find technology difficult to implement due to resource constraints (Street & Meister, 2004; Raymond, 1985). Therefore, from an IS perspective, it is critical to understand the role of IT artifacts in SMEs and whether the use of IT could lead to their growth and development.

Even though many large companies started as small businesses or SMEs, very little is known of how changes and transformations take place within the SMEs. More than 20 years ago, DeLone (1988) points out that IT planning as well as the IT knowledge of SMEs' executives are associated with the success of computer usage in small businesses. More recently, Street and Meister (2004) conduct action research on small businesses and they discovered that there is a tighter connection between the employees within the SMEs. They discovered that the internal transparency was critical for the growth of small business. While SMEs can be the seedbed for industrialization by either graduating to become larger companies or by accumulating capital which might be invested later (Grosh & Somolekae, 1996), other factors, including the use of ICTs, can largely influence the outcome of the development. Walsham and Sahay (2006) identify several challenges that need to be addressed by both researchers and practitioners that are within the IS research in developing countries. They are 1) How can ICTs promote "Development"? 2) What is the "Development" to which ICTs aim to contribute? 3) What are the key issues being studies related to ICTs? 4) What is the theoretical and methodological stance? and 5) What level

and focus of analysis is being adopted. Understanding and analyzing those challenges in SMEs is important in identifying factors that enable development efforts to be successful. As SMEs are different and facing unique challenges, there will be methodological challenges to study them as well.

In sum, a majority of research on IT4D focuses on developing countries (Avgerou, 2008), digital divide (Thompson, 2004), and ICTs' contributions towards development (Kleine, 2015). As IS researchers, we have taken for granted many IS key concepts such as 'Information', 'Theory', 'System', and 'Organization' (Lee, 2010). Indeed, it also includes "development", "SMEs", "ICTs", and "IT4D". There is a sense that development takes place in all the countries of the world regardless of their levels of development. Despite the previous research that focuses on how ICTs may or may not lead to the development in both developed and developing countries and regions (Schreiner & Woller, 2003; Duncombe & Heeks, 2002; Street & Meister, 2004; Raymond, 1985; Riemenschneider et al., 2003; Morales & Qureshi, 2010), and various definitions of development, it is still unclear what extent IS publications consider the research in IT4D on SMEs, and how ICTs may or may not lead to the development. Furthermore, do ICTs really matter for the development of SMEs (Qureshi, 2011)? As more and more SMEs are born every day, it will be more important to understand what the perspectives are from recent publications.

To understand what the state of IT4D research on SMEs is, and to a larger extent, to understand in what ways IS scholars conduct research on IT4D research, we propose the research question,

***How do IS researchers approach and conceptualize the IT4D research on SMEs?***

Literature reviews usually serve two roles in IS research, one is as a research method in itself and the other as the preparation for future research (Pickard, 2012, p25). The literature review is also a powerful research methodology in the IS domain since it helps identify the critical knowledge gaps between existing and future research. As Webster and Watson (2002) point out, there are few literature review publications in IS research. Hence, this research adopts the multi-facet critical analysis strategies of the publications in IS research (Zhang et al., 2011) to fill the research gaps in the IT4D research on SMEs.

The rest of the paper are structured as follows, firstly, the definition of SMEs and development will be provided. Then, the research method and data analysis will be introduced. Discussion

from the results, findings, and evaluation along with conclusion for the topic is provided at the end of the paper.

## **SMALL AND MEDIUM-SIZED ENTERPRISES**

Overall, SMEs are independent firms and companies which tend to have fewer employees and lower sales volume compared to large firms and companies. Different definitions are given from different organizations and countries. For example, the Organisation for European Economic Cooperation (OECD) and European Union (EU) designate the upper limit of employees for SME as 200 employees (OECD, 2015). United States defines the upper limit of employees for SME as 500 employees (Summary, 2011).

SMEs are businesses that have fewer than 100 employees in many countries and regions (OECD, 2015). One type of SMEs, the small businesses, including micro-enterprises, currently represent 99.7 percent of all businesses in the United States. Over the last two decades, they have generated nearly 64 percent of all new jobs in the country while creating more than half of the nonfarm private GDP (USSBA, 2011; Kobe, 2007; CHI Research, 2003). According to data from the United States Census Bureau (2011), there are more than 10 million small businesses operating in the United States. As these businesses are the driving force and the central factor influencing the economic growth and development of communities in the United States, it is important to understand how ICTs can support the growth and maintain the sustainable development of these small businesses (Qureshi & Lamsam, 2008; Chen et al., 2006; Garsombke & Garsombke, 2000; Varma, 2005).

## **DEVELOPMENT AND INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)**

The concept of Development has its roots in the economics of the firm. Development is defined as “the interruption of the business cycle” according to Schumpeter (1934). Development is often used to describe growth in organizations and the regions in which they reside. Development has also been described as an economic phenomenon that leads to improved standards of living. Another purpose of development is to spread freedom and its “thousand charms” to the citizens (Sen, 1999). Development is a concept which is considered both theoretically and politically, and is inherently both complex and ambiguous (Summer & Tribe, 2008). The liberalization of

economics replaced the animated development practice in 1950s and 1960s. Willis (2005) describe the ‘Modernity’ as a ‘condition’ if being modern, or being like the industrialized counties of Western Europe and North America in particular. Modernity encompasses industrialization, urbanization, increased use of technology, and application of rational thinking (Willis, 2005). There are many diverse development theories and practices (Willis, 2011). Some scholars define development as the diffusion of modernity (Habermas & Ben-Habib, 1981). Some scholars define development as economic growth (Sachs, 1999; Greig et al., 2007). Organizations like World Bank (2015) and United Nations tend to focus more on the human development, while others tend to focus on economic development. Table 1 provides different definitions of developments.

<b>Table 1. Perspectives on Development</b>	
<b>Sources</b>	<b>Definitions</b>
Sen (2001)	Freedom is the main object of development, including political freedoms, freedom of opportunity, and economic protection from abject poverty.
Schumpeter (1934)	Economic Development consistent from innovations.
Barder (2012)	Development is an emergent property of an economic, social and political system.
Summer and Tribe (2008)	Development is a long term process of structural social transformation. Development is a short-to-medium term outcome of desirable targets. Development is a dominant discourse of western modernity.
Willis (2011)	Development as an economic process. Development as “modernity”. Development is a highly-contested concept.
Sachs (1999), Greig et al. (2007)	Development as economic growth.
Habermas & Ben-Habib, 1981	Development is the diffusion of modernity.
United Nations Human Development Index (HDI)	Human Development consists of a long and healthy life, being knowledgeable and have a decent standard of living.
World Bank (2015)	Development as improvement of life quality: access to education, healthcare, employment opportunities, and so on.

Similarly, research in the field of IT4D has grown to provide specific insight and approaches through which IS can be implemented and adopted in a variety of cultural contexts. It is the research of how innovative applications of Information Technology bring about improvements in the lives of people. These are assessed in terms of economic, social, and human outcomes. Those research has made contributions in providing equitable access to information and knowledge in

areas such as education (Rodrigues & Govinda, 2003; Rodrigo, 2003, Scheepers & de Villiers, 2000); healthcare (Braa et al., 2004; Mosse & Sahay, 2005; Kimaro & Nhampossa, 2005); software development (Chudnovsky & Lopez, 2005; Tan & Leewongcharoen, 2005; Han, 2000); reduction in poverty (Cecchini & Scott, 2003; Kenny, 2000; Qureshi et al., 2009); better government (Tan & Leewongcharoen, 2005; Walsham & Sahay, 1999; Qureshi, 1998), off-shore outsourcing (Sahay et al., 2003; Preis-Heje et al., 2005; Hawk & McHenry, 2005), digital divide (Duncombe & Heeks, 2002).

### **IS Scholars' focus on "For Development" versus "In Developing Countries"**

Even ICT has been conceptualized as a tool to achieve social, economic, and human development, little is known about how this tool actually may or may not enable development. Brown and Grant (2010) argue that the existing research in ICT for Development can be categorized into "For Development" and "In Developing" by reviewing 184 articles appeared from four dedicated ICT and development journals, including *Information Technology for Development*, *Information Technology*, and *International Development*, from 1982-2007. It is recognized that ICT for Development research focuses on the link between ICTs and development, and empowering marginalized populations, while the research of ICT in development focuses on the culture implications and local adaptation (Brown & Grant, 2010). It is argued that increased research attention should be placed to the research in developing contexts, i.e. "For Development". Avgerou (2008) suggests that the IS research in development should engage with the study of IS innovation with particular social-economic rationale, especially in the developing countries. Sein and Harindranath (2004) also propose ICT use, ICT views, and ICT impact as key ICT artifacts to understand the role of ICT in the national development.

Some suggest that in a set of emerging economies, IT investments achieved consistently higher growth rates of GDP and productivity (Kraemer & Dedrick, 1994; Samoilenko & Osei-Bryson, 2011). Yet, Bollou and Ngwenyama (2008) investigate the total factor productivity of the ICT sectors in six West African countries from 1995 to 2002. It appears that the total factor productivity of those countries did not benefit from the investment, as "Using ICT as an engine of economic growth is complex" (Bollou & Ngwenyama, 2008, p303). Heeks (2002) points out that the accessibility of the Information System failure in developing countries is not so easy to

be identified compared to the industrialized-countries. Pick and Azari (2008) conduct research on the influence factors on ICT from 71 developing and developed countries. They identify technology attributes that are strongly associated with the foreign direct investment (FDI), government prioritization of IT, and the education. These research also suggests that there is a lack of case study research from developing countries on how ICT could leverage the economic, social, and human development.

While the definition of development remains controversy, majority of definitions of 'development' carry implicit value assumptions and imply responses (Summer & Tribe, 2008). Willis (2011) places the development theories in a historical context. Escobar (1995) conducts a discussion of alternative visions for a post-development era suggesting that current views on development prevent people in developing countries from coming out of poverty. The various applications of ICT have been seen to fuel globalization. A number of theories have been developed on the nature and impact of the process of globalization (Castells, 2001, Held et al., 1999; Hirst & Thompson, 1996; Robertson, 1992; Scholte, 1993; Wallerstein, 1974; Giddens, 2003). Castells (2001) is notable in his description of globalization to be fueled by Information Technology in what characterizes this current technological revolution, which is the application of this knowledge and information to knowledge generating and information processing devices.

### **Technology**

Technology is a central component in economic development (Malecki, 1997). Information Technology is a driving force behind economic growth, and has fundamentally changed the way people live not only in developed countries, but also in developing countries. ICTs are used by many private enterprises to improve the performance, productivity and competitiveness in the marketplace (UNCTAD, 2011). However, the use of ICT is a challenge in both developed and developing countries (Wolcott et al., 2008; Schreiner & Woller, 2003). The development may be inhibited by a lack of understanding of ICT (Sadowski et al., 2002). As the world is increasingly interconnected through high-speed mobile communications, growing demand for information and communications services, combined with technological advances, growing infrastructure and falling prices allow more and more people across the globe to join the information society. ICT in this research is defined as Appropriate Technology. According to Schumacher (1989), appropriate Technology is defined as the "The acquisition of technology appropriate for the

small businesses' economic environment". In this definition, ICT is used in a very broad sense. For example, technology could be something as simple as corded, landline telephones. It could also include basic mobile phones and radios in developing countries. In more advanced areas technology could be viewed as an online billing system, an iPad ordering system, or a Near Field Communication (NFC) payment system. In order to understand what extent do IS publications consider the research in IT4D on SMEs, and how ICTs may or may not lead to the development, the development outcomes from SMEs' IT use, different types of development needs to be known from the literature.

## RESEARCH METHOD AND DATA ANALYSIS

We follow the research method proposed by Pickard (2012) to conduct literature review. This research also adopts the multi-facet critical analysis strategies of the publications in IS research (Zhang et al., 2011) to fill the research gap in the IT4D research on SMEs. Literature review process is conducted as described in table 2.

<b>Table 2. Literature Review Process (Pickard, 2012)</b>		
<b>Stages and Steps of Research</b>	<b>Descriptions of Activities</b>	<b>Location in this paper</b>
<b>Information Seeking and Retrieval</b>	Identify appropriate key words; Search appropriate online resources of literature	Introduction and Research Method
<b>Evaluation</b>	Judge the source based on the subjects of the publications	Research Method
<b>Critical Analysis</b>	Systematically analyze and examine the literature	Data Analysis
<b>Research synthesis</b>	Synthesize the concepts, evidences, and future trends in the literature	Evaluation and Conclusion



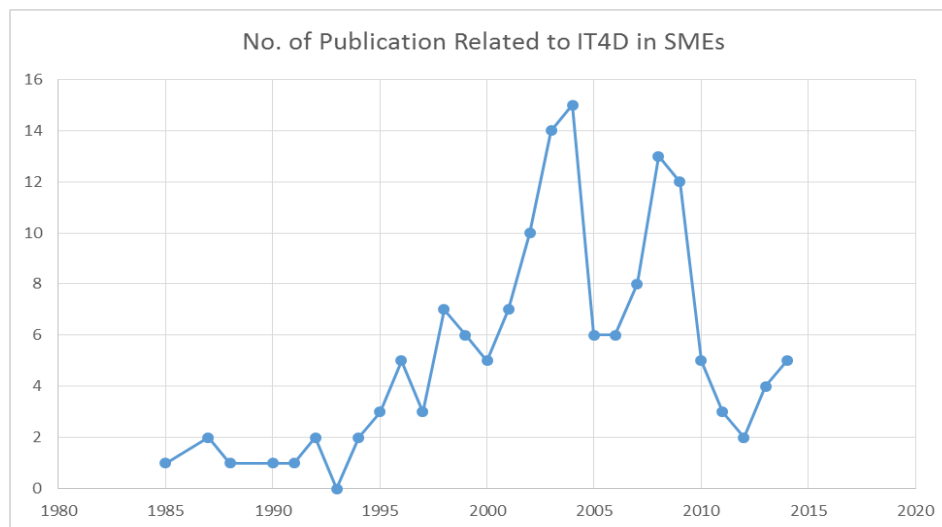
## Information Seeking and Retrieval

This study carries out content analysis of publications in IS research as they relate to how ICTs relate to Development outcomes in SMEs. In order to provide a holistic picture of the IS related research of IT4D on SMEs and to answer the research question, we decided to use two main academic databases, Google Scholar and ProQuest. Several search limitations are set in order to get more accurate data. All sample are peer-reviewed English written paper within the IS domain. Keywords of this research are “Small and Medium-Sized Enterprises”, “Small Business”, “Information Technology”, “Information Systems”, and “Development”.

After the results are generated based on the keywords, a sample of 1000 paper were selected from the population database to help identify the current research stream of the ICT4D in SMEs. Judgement sampling method was conducted and 149 paper were identified as the appropriate and representative paper. The following section provides the discussions on the topics that are gathered based on 149 papers.

## RESULTS, FINDINGS, AND EVALUATION

Based on search results from the database, 149 papers were selected and surveyed using the above criteria. Figure 1 provides time distribution of publications related to IT4D in SMEs from 1985-2014.



**Figure 1. Time distribution of publications related to IT4D in SMEs from 1985-2014**

Based on figure 1, the earliest research from the sample was published in 1985, where Raymond (1985) discusses different factors and characteristics that could lead to the IS success of small businesses. The latest paper from sample was published in 2014. It appears from the samples that more and more research attention is paid from 1994, and most of the publications were published between 2000-2010. Since there are different factors that would lead to the order of the results, for example, citations, types of publications, publication year, and relevance to the keywords, publications in 2015 were not found from the sample.

From 149 publications, key journals, conferences, and workshops in IT4D in SMEs are identified. Table 2 provides information about different types of journals, conferences, and workshops that were retrieved from the sample. Based on the sample paper, 28 journals and 3 conferences/workshops are identified as key publications in IT4D in SMEs. Within the journals, about 10% of the paper were published in *Journal of Small Business Management*. Most of the publication for this journals are related to IT adoption. For example, Dibrell et al. (2008) investigate the mediating effects of IT on the relationships among product and process innovations and small business performance. Karagozoglu and Lindell (1998) study the internationalization of technology based SMEs where they emphasize the importance of innovation. Publications from *Journal of Small business and Enterprise Development* and *Small Business Economics* contribute 13.4% of the sample publications. Both publications focus on the management and economic sides of IT4D in SMEs. Based on table 3, IS related journals (*MIS quarterly*, *European Journal of Information Systems*, *Information Technology for Development*, *Information Technologies & International Development*, *Journal of Information Technology*, *Information Systems Journal*, *Information Systems Research*, *Journal of Information Systems and Small Business*, *Journal of Information Technology Theory and Application*, *Information Systems Journal*, *Annual SIG GlobDev Pre-ICIS Workshop*, and *AMCIS*) contribute to 28.9% of the overall samples.

**Table 3. Key Publications in IT4D in SMEs**

<b>Types of Publications</b>	<b>Names of Publications</b>	<b>Publications No.</b>	<b>Types of Publications</b>	<b>Names of Publications</b>	<b>Publications No.</b>
Journal	Journal of Small Business Management	15	Journal	World Development	2
Journal	Journal of Small business and Enterprise Development	12	Journal	Decision Sciences	2
Journal	Small Business Economics	8	Journal	<b>Information Systems Journal</b>	1
Journal	Information & management	7	Journal	<b>Information Systems Research</b>	1
Journal	<b>MIS Quarterly</b>	7	Journal	International Journal of Business and Information	1
Journal	<b>European Journal of Information Systems</b>	6	Journal	International Journal of Electronic Commerce	1
Journal	<b>Information Technology for Development</b>	6	Journal	International Journal of Entrepreneurial Behavior & Research	1
Journal	International Small Business Journal	6	Journal	International Journal of Information Management	1
Journal	<b>Information Technologies &amp; International Development</b>	3	Journal	Journal of Enterprise Information Management	1
Journal	Internet Research	3	Journal	<b>Journal of Information Systems and Small Business</b>	1
Journal	Benchmarking: An International Journal	2	Journal	<b>Journal of Information Technology Theory and Application</b>	1
Journal	International Journal of Business and Management	2	Journal	Management Science	1
Journal	<b>Journal of Information Technology</b>	2	Journal	World Development	2
Journal	Omega	2	Journal	<b>Information Systems Journal</b>	1
Journal	The Information Society	2	Workshop	<b>Annual SIG GlobDev Pre-ICIS Workshop</b>	8
Journal	<b>The Journal of Computer Information Systems</b>	2	Conference	<b>AMCIS</b>	2
Conference	<b>PACIS</b>	2	Other	Other	39

**Table 4. Research Categories and Sample Paper of IT4D in SMEs**

<b>Categories</b>	<b>Paper</b>	<b>Percentage</b>	<b>Representative Papers</b>
<b>1. Information Technology Adoption Research on SMEs</b>	47	31.54%	Molla et al. (2006), Shiels et al. (2003), Premkumar, G., and Roberts (1999)
<b>2. Different Approaches to promote ICT in SMEs</b>	27	18.12%	Riemenschneider et al. (2003), Kamal et al. (2011)
<b>3. Individual and organizational use of Information Technology in SMEs</b>	24	16.11%	McGee and Sawyerr (2003), Thong et al (1996)
<b>4. Development Outcomes and Evaluation in SMEs</b>	51	34.23%	Schreiner and Woller (2003), Street and Meister (2004), Raymond (1985)

Based on the data, Information Technology Adoption Research on SMEs, Different Approaches to promote ICT in SMEs, Individual and organizational use of Information Technology in SMEs, and Development Outcomes and Evaluation in SMEs are identified as key research categories. Table 4 reports different categories, the percentage of each categories and representative publication. The data on the papers were further grouped into four categories. The following section provides descriptions, justifications, and examples from each categories.

### **Information Technology Adoption Research on SMEs**

The largest number of publications fell into this category with 47 papers, which comprise of 31.54% of the samples are IT adoption research on SMEs. IT adoption related research on SMEs are observed throughout the literature. As one of the most famous research models in IS domain, Davis (1989) introduces the Technology Acceptance Model (TAM), which describes how users of information systems come to accept and use technology. Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) are the key factors of the model. According to TAM, Perceived Usefulness (PU) is defined as “the degree to which a person believes that using a particular system would enhance his or her job performance” (Davis, 1989, p.320). Also, Perceived Ease of Use (PEOU) is defined as the “the degree to which a person believes that using a particular system would be free of effort” (Davis, 1989, p.320). Those research models are also applied to the IT adoption of SMEs.

The Technology Organization Environment (TOE) framework contains three aspects that explain the process of adopting and implementing a technological innovation: technological context, organizational context, and environmental context (Xu et al., 2004). Diffusion of innovation theory (DOI) is developed by Rogers in 1962. Nui (2007) conducts case study on the IT adoption for a small internet retailers in Turkey. Manochehri et al. (2012) identify that there is a need for more training facilities for adopting ICT in SMEs in Qatar. MacGregor and Vrazalic (2005) develop a model of e-commerce adoption barriers for the SMEs in Sweden and Australia. From the 477 small businesses, they discover that e-commerce is either “too difficult” or “unsuitable” for the businesses.

King and He (2006) conduct a meta-analysis of the technology acceptance model. They find out the TAM might have wider applicability. Barba-Sánchez et al. (2007) conduct a survey for the benefits that SMEs can get from the ICT adoption, which are enhanced productivity, favor the

new adoption model, access to new market, and improved qualification. Im et al. (2011) compare the IT adoption research utilizing the UTAUT model. Two technologies, including MP3 player and Internet banking are compared between Korea and the United States. They discover that the effects of effort expectancy on behavioral intention and the effects of behavioral intention on use behavior were greater in the sample from the United States. Antlová (2009) also provide the motivation and barriers of ICT adoption in SMEs.

### **Different Approaches to promote ICT in SMEs**

The second largest number of papers (27) comprise 18.12% of the papers from sample are related to different approaches to promote ICT in SMEs. While there are several different ways to measure the adoption of ICT in SMEs, there are also different approaches to promote the ICT in SMEs. Early in 1988, Montazemi (1988) identifies that the “simple organizational structure” of small businesses, which is different than large organization, can be a double sword during the adoption process of ICT. Iacovou et al. (1995) discover that the organizational readiness, external pressures to adopt, and perceived benefits are the important factors that would lead to the adoption of Electronic Data Interchange (EDI). Martin and Matlay (2001) introduce the “Blanket” approaches to promote ICT in small businesses. They emphasize the importance of human capital as well as the location of the firm. Matlay and Addis (2003) highlight the importance of education during the IT adoption of small businesses. Donner (2004) study the mobile phones usage of small business owners in Rwanda, and discover that there are different reasons and motivations why each individual small business owner chooses to use the technology. This is also supported in Duncombe and Heeks (2002), where they highlight that ICTs may play a supplementary role for the development of small businesses in Botswana. Barba-Sánchez et al. (2007) conduct a literature review of different drivers, benefits, and challenges of ICT adoption by SMEs. They discover that the small entrepreneur and the innovation orientation are the key factors towards the ICT adoption and promotion process for the SMEs.

Riemenschneider et al. (2003) introduce a collected model for IT adoption research in SMEs with TPB and TAM. Li et al. (2011) analyze the usage of online direct sales channels among SMEs in the United States. They found that there are different sets of factors that can determine the SME's initial adoption and post adoption. Quaddus and Hofmeyer (2007) identify factors influencing the adoption of B2B trading exchanges in small businesses. They find the external

factors will largely raise the businesses' awareness of the innovation during the adoption process. Al-Natour and Benbasat (2009) indicate that more and more research attention is paid to the factors surrounding the use of IT artifacts, rather than the traditional models like TAM and TPB. It appears that so far most of the literature focuses on the individual, i.e. the business owners' use of ICT as well as the organizational use of the ICTs. The following section describes the differences between the two.

### **Individual and organizational use of Information Technology in SMEs**

The third category with 16.11% of the sample, comprises 24 papers which are related to individual and organizational use of IT in SMEs. Williams et al. (2011) provide a systematic review of citations of UTAUT's originating article, and they discover that only 3.6% of the sample publications have actually made use of the theory, which means UTAUT may not be fully suited under all circumstances. On the other hand, as TAM and UTAUT are based on individual usage of a particular technology, it is hard to get an overall picture of the organizational use of IT within an organization. Thus, it might not be appropriate to use either of the model to measure and assess the actual use of technology. Li (2010) provides a critical review of Technology acceptance literature. Author finds that there are inconsistent, sometimes even contradictory empirical results from all major relations in TAM. For example, Alam et al. (2009) investigate the factors which influence the adoption and usage of ICT by the SMEs in Malaysia. They identify that perceived benefits, ICT knowledge and skill, and government support are significant elements of ICT adoption. The survey are delivered and finished by the business owners or managers, rather than the whole businesses. Similarly, Xiong et al. (2013) study the small businesses IT adoption in China. However, only the small business owners were involved in the study. As TAM/UTAUT based adoption research focuses on the individual usage of technologies, there is a need for researchers go beyond the TAM/UTAUT based adoption research models.

### **Development Outcomes and Evaluation in SMEs**

Finally, 34.23% of the sample are related to development outcomes and evaluation in SMEs. It appears that current research in IS focusses on how IT can be adopted by users. Yet, the majority of people in organizations adopt technology on a regular basis, and gain from the adoption of IT

have only been assessed in a rudimentary fashion such as return on investment, net present value or transaction cost analysis. The bottom line of a business, community or society relating to its survival and growth has not been connected to its use of IT. Limited research has been conducted in IS into studying the outcomes of IT adoption beyond variables affecting the user perceptions of technology.

One way of assessing the ways in which technology can improve the lives of people, is by assessing the ways in which, the majority of businesses in the world which are micro-enterprises, adopt technology. There is evidence to suggest that when these businesses use IT in innovative ways, they grow by a factor of 3.8. (Qiang et al., 2003). The effects of globalization are permeating multiple facets of life, organization and society, the relevance of ITD research for the IS community has become evident. Measures of economic development most often used are in terms of increase in income, job creation, and clientele (Qureshi et al., 2009). These measures will be used to assess development in small businesses in this research. Because this concept of development has its roots in the economics of the firm. The outcomes from the adoption of ICTs on development can be assessed in a number of ways.

### **Gaps in the Literature**

Several research gaps are identified in the literature relate to the ways in which ICT can be used to improve people's lives. These are summarized as follows:

1. Limited research has been conducted in IS into studying the outcomes of IT adoption beyond variables affecting the user perceptions of technology.
2. Despite the innovations in technology that have been alleged to improve people's lives, little research has been carried out in the ways of assessing the ways in which technology can improve the lives of people.
3. While innovations in Information Systems have had an impact on multiple aspects of the way organizations do business and how communities and regions grow, little is known about how this impact takes place.
4. We need to understand IT for development outcomes can be used to assess the growth of SMEs. Questions arise as to why do we need to know about how IT brings about Development? Why does it matter?

5. While the majority of innovations in Information Systems appear to be taking place in the developing world, little research in Information Systems has attempted to understand why this is the case? and How are these innovations affecting the lives of people.
6. Even though research suggests that SMEs that use ICTs for electronic commerce and for the support of their business, not only survive but grow, little research has been conducted as to why this is the case? The majority of businesses in the world are SMEs, yet that majority of IS research is conducted on the use of IT in large organizations.

As Cragg et al. (2002) point out, those development outcomes from ICT adoption have to be allied with the small businesses. Alonso-Mendo et al. (2009) also find that web site redesign have to be allied with the small businesses' business function. It appears so far that SMEs and individuals within have a very unique perspective towards the usage of ICTs, approaches to promote ICTs, and development outcomes. Areas that need to be studied to address the gaps are provided in the next section.

## **Ways Forward**

In order to move our understanding of how IT for development outcomes can be assessed in the growth of SMEs, we will need to understand the importance of human capital and empowerment as follows: 1) The importance of human capital within the SMEs and 2) the relationship between the development of SMEs and empowerment.

### *The Human Capital within the SMEs*

The first area identifies human capital such as the education and IT skills of employees that effect economic and social development should also be emphasized towards the development of SMEs. Human capital is defined and created by changes in individuals which increase skills and capabilities, enabling people to behave in new ways (Coleman, 1988). Human capital also can be described as all the competencies and commitments of the people within an organization (Ceridian, 2007).

Porter (1985, p. 394) identifies that human capital has a role in lowering economic costs or in elevating customers' willingness to pay. Human capital can be assessed in terms of education and social emdeddedness. Social Embeddedness is defined as the degree to which individuals or firms are enmeshed in a social network (Granovetter, 1985). Boyer-Wright and Kottermann



(2008) compared E-government issues in emerging parts of the world, including Eastern European, Asian countries and advanced countries. They also note that education and on-the-job training of individuals play important roles in ICT use in the three domains. Ngwenyama and Morawczynski (2009) indicate that economic factors, human capital, geography, and civil infrastructure factors should be considered during the analysis. Balamoune-Lutz (2003) argues that ICT diffusion is not associated with education by using the cross-sectional data from the World Economic Forum's (WEF) Government Information Technology Report (GITR).

Education and Training expenditure are the key variables used to assess Human Capital. Education in its broadest, general sense is the means through which the aims and habits of a group of people sustain from one generation to the next. Training is the acquisition of knowledge, skills, and competencies as a result of the teaching of vocational or practical skills and knowledge that relate to specific useful competencies. Training has specific goals of improving one's capability, capacity, and performance. It forms the core of apprenticeships and provides the backbone of content at institutes of technology (also known as technical colleges or polytechnics).

As the important concept, human capital within the SMEs may lead to the development of SMEs. We propose the *Open Question 1: Will the investment on training and education of employees lead to the development of SMEs?*

#### *The Relationship between the Development of SMEs and ICT enabled Empowerment*

The second area to move forward for the research of IT4D in SMEs relates to the relationship between the development of SMEs and Empowerment. As discussed in previous sections, it appears that there is diversity of approaches to the sustainable development of SMEs. Some are very market-led and involve pricing nature, while others involve putting environmental protection at the heart of policy. Given the diversity of different development goals of SMEs, the relationship between the development of SMEs and empowerment should be properly investigated.

Empowerment can be treated as a Relational Construct in management and social science research where it is described the "perceived power or control that an individual actor or organizational subunit has over others." (Conger, 1988). Gutierrez (1990) identify the concept of

empowerment as “a process of increasing personal, interpersonal, or political power so that individuals can take action to improve their life situations” (p. 149). The concept of empowerment has been used to describe how people feel they can be in control of their own lives despite the challenges they face which limit their personal freedoms (Qureshi & Lamsam, 2008). In particular, the Native American culture empowers their people when they pursue their ways of life in a collectivist manner. Yet, those ways of life are not often accepted in mainstream American culture which is more individualistic. In a study conducted by Kimaro and Nhampossa (2005), IT initiatives were found to be top-down, and controlled by the power of top managers who usually do not have adequate skills to do so. This took away from empowering those who needed the IT to be in control of their lives.

Historically, empowerment has been viewed as a motivational construct (Conger & Kanungo, 1988). Also, Hughes (2003) identifies that there is a debate about whether women are ‘forced’ or ‘voluntarily’ self-employed when there is a broader definition of ‘push’ factors is used. Çakar and Ertürk (2010) compare the innovation capability of SMEs from the empowerment perspective. From 743 employees in 93 SMEs, they find that collectivism and innovation capability are highly associated with the empowering environment within the SMEs. Wyer and Mason (1999) identify that empowering management approaches are the key features of successful growth-oriented SMEs. Similar results was also found from Gabrielsson (2007). As Moyi (2003) points out, ICTs could potentially become the root of empowerment in the SMEs sectors.

Despite the above studies, empowerment has received very little attention in the SMEs context compared to large companies. Understanding whether empowerment could lead to the development of SMEs or not may also be another area to focus on. Thus, we propose the *Open Question 2: Will ICT enabled empowerment potentially lead to the development of SMEs?*

## **CONCLUSION AND FUTURE RESEARCH**

In this paper, we survey the existing literature on Information Technology for Development in Small and Medium-Sized Enterprises. To answer the research question, how do IS researchers approach and conceptualize the IT4D research on SMEs, a set of research streams are identified. However, we should further appreciate the differences between the IT usages of individuals with organizations. We found that there are different approaches to promote understanding the ICT in

SMEs. Lastly, there are different ways to measure the development outcomes and evaluation in SMEs. We propose two open questions to provide future research directions for the research in IT4D in SMEs. First open question leads to whether human capital could lead to the development of SMEs or not. The second open question relates to ICT enabled empowerment with the development of SMEs. This research contributes to the research in IT4D in SMEs by providing the categories of research streams and two open questions for future research. Due to the limited sample size (149), more data is needed for future research. As open questions are not collectively exhaustive, a larger sample size of paper is needed in the future research.

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