

# A Review of Factors that Lead to Reluctance in Adoption of ICT among Small and Medium Enterprise in Developing Countries

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*Abstract - This paper reviewed the literature on the adoption of Information and Communication Technology by Small and Medium Sized Enterprises (SME) in developing countries. The purpose was to determine factors reported in studies from developing countries on adoption of ICT in SMEs. A systematic literature review was conducted to identify factors which were analyzed descriptively. The study identified four prominent factors, Owner/Manager's lack of ICT knowledge, high cost of adoption, perceived usefulness and perceived ease of use.*

*Keywords: ICT, Adoption, SMEs, Developing countries, Literature Review.*

## I. INTRODUCTION

The business world today is highly influenced by the changes in Information Communication Technologies (ICT) [18;20]. However, adoption of ICT in Small Medium Enterprises (SMEs) remains a challenge in developing countries [16; 30]. [33] postulates that, SMEs in developing countries face challenges, which are not as a result of their reduced size but isolation and none use of ICT. Consequently, SMEs in developing countries fail to compete favorably on the global market [25].

The adoption and use of ICT has widely been recognized as a source of innovations and competitive advantage [30]. The use of ICT enables SMEs to access information needed for their global competitiveness [20]. SMEs in developing countries requires adapting ICT to respond promptly to global competition [18]. Considerably, ICT enables to SMEs to improve efficiency and relationship of customers and suppliers [2]. The adoption of ICT is likely to give SME competitive advantage over other competitors [22]. Additionally, ICT improves business operations and may lead the reduction in

the cost of doing business and ease the way of doing business [24].

Considerably, there is a positive relationship between ICT adoption and profitability of SMEs [1]. Considerably, with all these benefits of adopting ICT in SMEs, the question remains on why they reluctant to adopt these technologies [23]. Nonetheless, in developed countries there has been so many studies addressing adoption of ICT in SMEs [6;37;12]. However, only few studies have placed interest to understand ICT adoption by SMEs in developing countries [e.g., 37;1;23]. This necessitated further investigations to understand this phenomenon.

## Research Objective

The main objective is to review the reluctance in ICT adoption by SMEs in developing countries.

## Research Question

The main research question is why are SMEs in developing countries reluctant to adopt ICT in their operations?

## Literature Review

The prominent theories surrounding adoption processes of technology in SMEs unfold from following models ; the theory of diffusion on innovation (DOI), and technology ,organization, and environment (TOE) [7;1;29]. The theory of DOI is used when investigating user behaviour in new technology adoption from the organization's context [18]. While the TOE is used for assimilation and adoption of technology in large firms [30]. Considerably, these models centers on individual, firm's technology characteristics and organization to be key drivers of innovation [7]. Furthermore,

other theories; are the theory of reasoned action (TRA) and the theory of planned behavior (TPB) [18]. The technology acceptance model (TAM) is developed from TRA and TPB theories [21]. Regardless, other studies have opted for the Technology Acceptance Model (TAM) to understand ICT adoption in SMEs [34; 5]. Significantly, TAM provides the basis of tracing the impact of external factors on internal beliefs, attitudes and intentions [18].

Nonetheless, TAM is a theoretical model which explains and predicts user behaviour towards ICT, while perceived usefulness, perceived ease of use, attitude toward computer use, and intention to use technology are all cognitive factors considered in adoption of ICT in SMEs [19]. Significantly, SMEs in developing countries are managed by individual owners, who are responsible for the entire business decision making including adoption of ICT [1;19]. The adoption of ICT by SMEs in developing countries faces many challenges emanating from the manager/owner’s insufficient information, knowledge deficiency, poor infrastructure, attitude towards ICT and non-customized software to fit their budget [1;29;15]. Furthermore, [8] found social network, technological attributes, organizational attributes as the factors inhibiting ICT adoption after a survey of 130 SMEs from South Africa, Zimbabwe and Botswana.

**Methodology**

The research methodology is the way in which the investigation is conducted [13]. The study applied quantitative research method. A quantitative research method enables generalization [15]. The study followed a systematic literature review to answer the research question raised, then utilized descriptive research design.

Considerably, to meet requirement for this paper the study by [14] recommended the establishment on the criteria and process of literature search. The search was conducted widely on academic peer reviewed journal (Table 2) from developing countries on adoption of ICT. Only papers published from 2015 - 2022 were considered for in this study, this was done to review only recent and most relevant factors.

The literature on adoption of ICT which for other sectors or practitioners other than SMEs was excluded, as the focus and the research was based on SMEs. Hence, the study centered on adoption of ICT in SMEs from the developing countries context. The analysis of the factors based on the research question of the study were identified, categorized and gathered. This followed narrowing on the common recurring themes and calculating the percentages of when the factors were found to be the course. Furthermore, explanations supporting such themes were provided based on the findings reported in the respective papers. Significantly, a total of 20 papers from developing countries focusing on adoption of ICT met the criteria and were used in the analysis process.

**Findings**

The studies reviewed show the following factors; The availability of reliable infrastructure, high cost of adoption and use, perceived usefulness of ICT, perceived ease of use, poor management support, lack of ICT knowledge and skills, lack of government support and policies, lack of maintenance and technical support, inadequate security and the peer pressure refer to Table 1 below.

**Table 1**

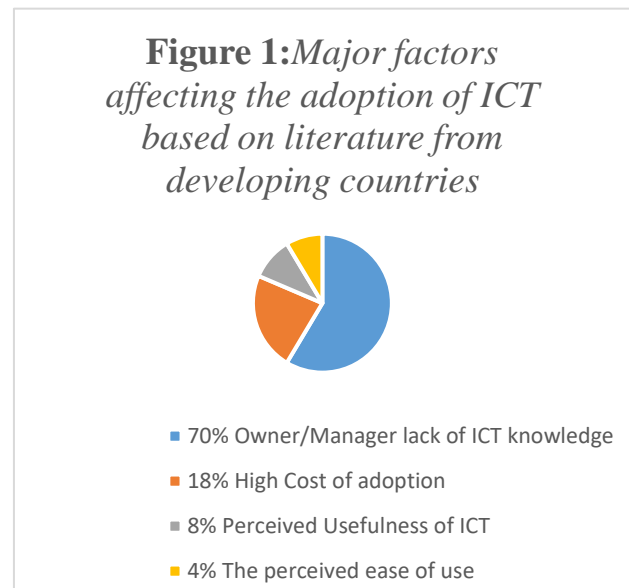
	Author and year	Method	Country	Factors
[19]	Okundaye, (2019)	Qualitative	Nigeria	Top management, Government support
[37]	Kyakulumbe and Pather, (2021)	Quantitative	Uganda	SME owners, Benefit expectation, ICT learnability, User-confidence, and User-friendliness
[10]	Hoque et al.,(2015)	Quantitative	Bangladesh	awareness of benefits, government support, top management support, and

				financial support, high cost of adoption, perceived usefulness				skills and lack of updated technology. Owner's/manager's lack of ICT knowledge
[32]	Osorio-Gallego et al., (2016)		Colombia	lack of confidence in ICT's security and privacy, a perception of ICT cost-benefit				
[16]	Kabir et al.,(2022)	Quantitative	Bangladesh	Top management, Perceived usefulness				a lack of awareness of digital services, electricity, skills to navigate smart devices, high cost of both devices and mobile internet and cybercrime
[35]	Rozmi et al., (2020)	Quantitative	Malaysia	Internal factor- Company (capital, company's age, less skilled workers and family business) and SME Owners (time, education, perceptions and experiences) External Factor, namely Technology (high cost, complicated, system's security and stability) and Regulators (government's initiatives, training skills and no urgency)				skills deficit in many SMEs, owner-managers lack of ICT knowledge high cost of adoption, perceived usefulness
[8]	Gono et al., (2016)	Quantitative	South Africa					cost was the highest mentioned organizational factor
[41]	Olwethu Zide et al., (2022)	Quantitative	South Africa					Owner's/Manager's perception toward the usefulness of ICT
[33]	Muriithi et al., (2016)	Mixed method	Kenya					marital status, awareness, accessibility and motivation are
[28]	Al Busaidi et al., (2019)	Quantitative	Oman	unfriendly business environment, poor management				
[25]	Mustapha et al.,(2021)	Quantitative	Nigeria					

				the most influential factors influencing the adoption of ICT
[1]	Albar and Hoque, (2017)	Quantitative	Saudi Arabia	top management support, culture, regulatory environment, owner/manager innovativeness and ICT knowledge
[18]	Kuruwitaarachchi et al.,(2019)	Quantitative	Sri Lanka	Owner's/Manager's perception toward the usefulness of ICT
[36]	Skafi et al.,(2020)	Quantitative	Lebanon	The perceived complexity of ICT negatively impact its adoption and use by SMEs.
[9]	Hassan and Ogundipe, (2017)	Quantitative	Nigeria	Competitive pressure, government support, employer's skill and knowledge
[26]	Msuya et al.,(2017)	Mixed Methods	Tanzania	Owner's/manager's lack of ICT knowledge, High cost of adoption of ICT
[29]	Nyandoro, (2016)	Quantitative	Kenya	owners/managers, unskilled personnel

				uncertainty about benefits complexity of ICT implementation
[6]	Duran and Castillo, (2021)	Quantitative	Colombia	owners/managers lack of ICT knowledge, unskilled Personnel, Cost of adoption
[11]	Hussein et al.,(2017)	Quantitative	Oman	Owner's/Manager's perceived ease to use

Conclusively, the prominent factors where Owner/Manager's lack of ICT knowledge, high cost of adoption, perceived usefulness and perceived ease of use. These four factors were further summarized descriptively using the Figure 1 below.



**Conclusion**

This study reviewed factors that lead to reluctance in ICT adoption by SMEs in developing countries. Based on the studies reviewed, The main four recurring factors were Lack of ICT knowledge, high cost of adoption, the perceived usefulness of ICT, and the perceived ease

of use. The studies reviewed have shown that from the developing countries perspective, the largest responsibility for reluctance of Information Technology adoption in SMEs rests upon the owner/manager. The cost of adoption is also a major factor leading to the reluctance, while the perceived usefulness and ease of use are known factors which maybe emanating from the lack of ICT knowledge. Therefore, we recommend that agencies responsible for technology implementation to step in with business development services that are aimed to empower ICT skills to the SMEs owner's/managers. Furthermore, we recommend that government should support the SME sector through facilitating an enabling environment where the import of ICT equipment is less expensive, to ensure cheaper cost of adoption. The study limitation is owed to research work from developing countries from 2015-2022 on adoption of ICT in SMEs. Conclusively, organizations tasked with technology implementation should keep orienting the owners/managers on the use of ICT. The system developers should create systems which are affordable for this segment. Thus, we recommend further investigation on factors affecting adoption of ICT in SMEs in Zambia.

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