

ASSESSING THE MOBILE PHONE TECHNOLOGY USAGE CONTEXT IN SMES OF DEVELOPING COUNTRIES: A CASE OF TANZANIAN TOURISM SECTOR

Renatus Mushi, Department of Computer Science, The Institute of Finance Management, Dar es Salaam, Tanzania
renatus.mushi@ifm.ac.tz

ABSTRACT—the effective usage of technologies depends much on its acceptance to its intended users. It is therefore imperative to assess various aspects which are associated with the usage of technology to understand how users react. While literature is rich with studies which discuss theories and models that explain the acceptance of technologies in various aspects, only a few of them provides a deep understanding of the usage context of technologies in a specific working environment. Mobile phone technology has proven to be the key to improving the business processes of SMEs, specifically in developing countries. Taking into consideration the importance of SMEs in the economies, understanding the usage context of mobile phone technology is vital because will help managers, stakeholders and policymakers to make informed decisions that can improve its uptake and increase the productivity. This study explores the usage of mobile phone technology by considering various aspects followed by providing a discussion that can help stakeholders in making informed decisions. The methodology involved semi-structured interviews with employees of 15 SMEs that perform tourism activities in Tanzania. Among the findings is that the usage of mobile phone technology is affected by mandatoriness on its usage and it also affects the personal privacy of employees.

KEYWORDS—SMEs; mobile phone technology; personal privacy; mandatoriness; developing countries

I. INTRODUCTION

Small and Medium-sized Enterprises (SMEs) are increasingly becoming a vital part of the economies of both developed and developing countries [1]–[3]. SMEs play a crucial role in providing employment opportunities and source of income generation in many countries. In that case, they contribute considerably to the welfare and sustainability of these communities.

The importance of SMEs in the economy is well-substantiated in the literature sources. For example, In the USA, SMEs represent 99.7% of all firms and employ more than 50% of all private-sector employees, and present 44% of total USA private payroll [4]. In the UK, SMEs account for approximately 99% of all enterprises and employ 39.9% of all employees [4]. In Tanzania, SMEs account for 27 % of the Gross Domestic Product (GDP) and contribute to the employment of more than 20% of the labour force [3].

The United Nations (UN) rank the countries based on their gross national income per capita, human assets, and economic vulnerability that distinguishes some least

developed countries in the world [4]. In such rankings, Tanzania falls in the category of the least developed countries [4]. As a result, the survival of SMEs is among the top institutional agenda of the Tanzanian government. Among the characteristics of SMEs, includes having a few staff, lack of specialisation and low financial capabilities [5]. Such attributes are likely to result in need of more tailored technological options. Taking into consideration the context of least developed countries, in which the level of technology and infrastructural settings are highly underdeveloped, various factors are likely to influence the intention of employees of SMEs on using a particular technology for work.

Mobile phone technology differs from desktop computing, as mobile phones can be used anywhere and at any time [6]. If mobile phones are owned by employees of SMEs, they can be used to accomplish their duties regardless of when and where they are located to the head offices, at remote locations or home. Similarly, employees are likely to be subjected to work using their mobile phones at any possible time and place regardless of whether it falls within the normal working duration, overnights or over the weekends.

The differences SMEs have from large organisations such as: having relatively flat organisation structures; being less formalised; lack of documentation on operation standards and rules as well as depending largely on external party assistance on issues related to Information and Communications Technology (ICT) [7]. These differences show how SMEs are likely to fail to invest substantially on ICT, which will increase employees' dependences on mobile phones in performing their duties. On the other hand, the researcher has looked at technology leapfrogging [8] in the perspective of an opportunity of paving ways to the innovative use of mobile phone technology in developing countries like Tanzania. That means poor ICT readiness such as lack of reliable electric power, poor road infrastructure, and lack of exposure have left SMEs in developing countries relying on the creative use of mobile phones in improving the work processes.

This uptake of mobile phone technology in the SMEs comes along with an interest to identify the associated usage context. The context includes aspects such as the key uses of mobile phone technology, whether or not its usage is perceived mandatory to the users/employees, and personal privacy concerns. This study explores such insights by conducting exploratory interviews with the employees of 8 SMEs which belongs to the service sector in Tanzania.

The rest of this paper is organised as follows: Section Two discusses the meaning of SMEs and the attributes of the companies which are central to this study followed by section three which discusses the mobile phone technology, Section four discusses the methodology used to conduct this

research and section five provide discussions of the results. Section six concludes this paper and provides areas for further researches.

II. SMALL AND MEDIUM-SIZED COMPANIES

The existing literature includes various definitions of SMEs, and most of these definitions of concepts are available in business commerce, development and economics literature [9]. These definitions differ from country to country. For example, The Organization for Economic Co-operation and Development (OECD) definition is based on employment figures, and it defines SME as have less than 500 employees [10]. In Britain, SMEs are enterprises which have an annual turnover of £2 million or less with fewer than 200 paid employees, In Australia, SMEs are defined as enterprises with between five and 199 employees [11]. The European Union defines a micro-business as a company with less than ten employees and annual turnover, and balance sheet total not exceeding €2 million.

In the EU, small businesses have fewer than 50 employees with an annual turnover, which does not exceed €10 million and a balance sheet total that is beyond €10 million [2]. Medium business is defined by EU as those SMEs that have less than 250 employees, turnover does not exceed €50 million, and the annual balance sheet total is beyond €43 million [2]. The World Bank defines a micro-scale company as the one having less than 50 employees, a small-scale company as having 50 employees and a medium-scale company as having 50-200 employees [12]. The existence of various definitions of SMEs in different context means that there is a need for identifying the definition of SMEs as defined in the Tanzanian context.

In the Tanzanian context, Mawona and Mpogole [13] state that SMEs are companies that are limited to the number of employee (also called headcounts) and profit or capital. However, they assert that the definition of small businesses might vary from country to country or from sector to sector. The Tanzania Small Industries Development Organisation (SIDO) uses the definition in Table 1, but it also highlights that in the event of an enterprise falling under more than one category, the level of investment will be the deciding factor¹. The Tanzania Revenue Authority (TRA) has different definitions for small businesses which they term a small business as the one whose annual taxable turnover is less than TZS 40 Million (USD 22,500). On the other hand, the Tanzania SMEs policy document includes micro-enterprises in the group of SMEs.

TABLE 1. THE DESCRIPTION OF THE DEFINITION OF SMALL, MEDIUM AND LARGE ENTERPRISES IN TANZANIA¹

Type of Enterprise	Micro	Small	Medium	Large
No. of Employees	0-4	5-49	50-99	100 and above
Working Capital	<\$2.8k	2.8k- <\$111.1k	111.1k- ≤\$444.4k	>\$444.4k

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The definition of SMEs is largely dependent upon the geographical context where differences are registered in terms of sectoral type, some employees, and annual turnover [14]. As such, while the definition of SMEs is contestable, in the context of this study, therefore, it defines SMEs as any company which has working capital of less than \$444,400 and employees less or equal to 99 people.

The target group of this study is people who work with SMEs (employees). Their opinions are used in this study to build an understanding of how they perceive various aspects of mobile phone technology usage whilst performing various activities on behalf of their SMEs. Therefore, the classification of SMEs was used as a basis to identify whether or not the respondents are working with SMEs.

In 2011, the survey of SMEs in Tanzania analysed the status of small enterprises concerning various sectors¹. Based on their main activities, products and services, and location, these small enterprises were allocated to various areas according to the International Standard for Industrial Classification (ISIC). The breakdown of SMEs based on activities is essential as they show to what extent tourism plays a part in comparison to the rest of the SME categories in Tanzania. Through the definition of tourism by the Tanzanian Tourism Act (2008), the categories within the ISIC which can be regarded to perform tourism activities are “accommodation and food service activities” and “administrative and support service activities”. As a result, the tourism sector in Tanzania appears to comprise more than 26%. This means that improving the way mobile phones are utilised by the employees of Tanzania Tourism SMEs will tend to improve the tourism sector, which is key to the country.

In respect to the sampling strategy employed by this study, the OECD breakdown of the definition of tourism activities was used as a basis of identifying the entire categories and subcategories of companies which can be regarded to provide tourist activities.

III. MOBILE PHONE TECHNOLOGY

According to the Cambridge English Dictionary, mobile technology is defined as: “electronic equipment such as mobile phones or small computers that you can use in different places, and the technology connected with them”.

This means it comprises of the devices and technology which is involved in enabling them to work in different places. This definition is supported by Mushi et al (2018), who assert that in mobile technology, the computing services and internet are accessed by mobile devices through the wireless medium. The main advantage of mobile technology is its mobility, which allows users to access computing

¹. Tanzania SME Development Policy 2003: “ten years after”, Implementation Review.

services anywhere and at any time [15], [16]. The innovation has impacted positively on the lives of ordinary people more than any other technology [1].

Its usage has presented opportunities with different dimensions to all groups of individuals and businesses [1]. In mobile technology, the time and space required to access information are highly reduced [16]. Users of mobile technology have access to the Internet and mobile applications whenever the need arises, such as when travelling, wandering and visiting [1], [16].

Mobile technology requires a reliable telecommunications infrastructure which can support technologies such as Wireless Application Protocol (WAP), Bluetooth, 3G, and General Packet Radio Service (GPRS) as well as the devices which will act as a client on the user side such as mobile phones and tablet computers (PDAs) [1]. Mobile technology is evolving quickly, replacing traditional communication methods like post office and landlines. Unlike previous mobile phones which were only used for a phone call and messaging, improvements in mobile technology have resulted in multitasking devices performing internet browsing, instant messaging and GPS navigation. The future of computer technology rests in mobile computing and wireless networking. From the definitions, the words 'mobile technology', 'cellular technology' and 'mobile phone technology' are logically representing the technology in which mobile devices can communicate over a wireless medium. However, this study uses the term 'mobile phone technology' to represent the rest two terms, and the term 'mobile phone' is used to represent all the mobile devices.

The usage of mobile phones is affected by several factors. In Tanzania, Venkatakrisnan [17] shows that network-related problems are the leading challenge by 93.3%, followed by limited connectivity, which takes up to 76%. Other challenges were due to the poor quality of handset and recurrent short of the electric power supply [17].

According to the latest telecoms statistics for Q2 2019 published by the Tanzania Communications Regulatory Authority (TCRA) as seen in Figure 1, overall mobile network subscriptions in the country reached 43,670,675 in June 2019. This represents an addition of 49,176 subscriptions compared to the 43,621,499 mobile subscriptions registered in December 2018, with a growth of +0.1%. Vodacom remains the largest mobile operator with 14,392,174 subscriptions June 2019 (14,143,657 in December 2018), followed by Tigo with 11,675,809 (12,583,640), and Airtel with 11,538,358 subscriptions (10,954,621) [18].

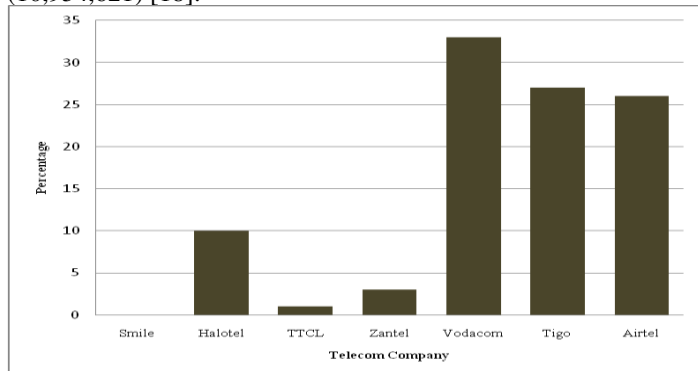


Figure 1. Tanzania Telecom Subscriptions by June 2019 [18]

IV. RESEARCH METHODOLOGY

SMEs come along with an interest to identify the associated usage context. The context includes aspects such as the key uses of mobile phone technology, whether or not its usage is perceived mandatory to the users/employees, and personal privacy concerns. This study explores such insights by conducting exploratory interviews. A sampling of the respondents was completed by studying the international Organisation for Economic Co-operation and Development (OECD) definition of what constitutes a company within the tourism sector, as highlighted in Table 2. In this table, the meaning and description of the companies which perform tourism activities are presented. Other sampling decisions were that the category has to comprise of companies which have attributes of SMEs and that they are likely to operate in Tanzania in normal circumstances.

One SME was selected to represent each company category. Among the interviewed SMEs, one of them had a single employee (the owner). The remaining seven SMEs were represented by two people in which one of them was an ordinary employee and another one the manager or supervisor or owner. This combination aimed at getting deep feelings on the use of mobile phones among different working roles within SMEs. Therefore, 15 respondents were involved in the interviews, whereas the interviewees comprised of various education levels and age. The minimum requirement for the potential respondent was whether they use mobile phones to perform work obligations daily. The researcher made an appointment with the managers and asked them to choose one of the employees who can participate in the interviews. The interviews were audio-recorded, and they were transcribed manually by the researcher by summarising the key findings which were identified. One of the challenges was the manual nature of the analysing data collected through the interviews and the need to pay extra attention to understand the concepts and compile views of multiple respondents into the same sets of ideas. The interview process took an average of 20 to 40 minutes per each participant.

V. RESULTS AND DISCUSSIONS

The contexts which were involved in the interview questions and the findings are seen in Table 3. The findings represent the summary of issues which were identified from respondents after asking the questions in the respective usage context. For example, the assessment of the extent of Voluntariness of employees on using mobile phones technology by asking employees reveals that the usage of mobile phones in performing their activities within SMEs have some compliance in nature. That is, in circumstances where the mobile phone is needed, it must be used. For example, the manager in one sports and recreation centre in Dar es Salaam asserted that:

“Mobile phone usage is not an excuse for not performing any working task.”

That can also mean that some managers believe that as long as an employee has a mobile phone, it is expected that he/she uses it for work purposes. On the other hand, the employees feel that they are obliged to use their phones whenever their tasks require them. One of the employees in a bar claimed that:’

“When my boss calls me, and I do not pick up the phone without convincing reasons, I will be fired.”

That statement shows that there is a possibility that the use of mobile phones might not be voluntary in performing the SME’s activities.

Employees were asked for their opinions whether there is a culture of SMEs providing financial support to the employees. Mobile phones can be expensive to buy, and the operational cost, especially in terms of credit top-ups, is another notable expense. The interviews have shown that the culture of purchasing mobile phones for employees is not very common in the SMEs. However, this can be justified to some extent because there is a likelihood that when employees have been employed, they already have their own mobile phones. The main challenge was, therefore, found to be the ongoing operational costs. One of the employees, when asked whether he received any supports on buying credits for airtime or data, replied:

“No. However, I support myself with my salary.”

Another employee, regarding the financial support from the company, said:

“No. I would be happy if my boss top ups my phone at least once in a while.”

Employees understand that mobile phones are used to perform personal activities, as well. Therefore, not all the burden of financial needs have to be shifted to employees. Even though employees use their phones for private purposes, the SMEs benefit as well. The assistance which applies to the use of mobile phones could range from buying the handset for the employees or supporting them financially for running costs. The analysis of interviews with the employees of Tanzania tourism SMEs shows that they have critical work-related obligations which need internet data bundles to accomplish.

TABLE 2. DESCRIPTION OF TOURISM COMPANIES BASED ON THE ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT²

55	Hotels and Restaurants of which:
	551 Hotels, camp sites, and other commercial accommodation
	552 Restaurants, bars and canteens
60	Land Transport, of which:
	601 Railways
	602 Other land transport
	6021 Other scheduled passenger land transport
	6022 Other non-scheduled passenger land transport, including taxis
61	Water transport of which:
	611 Sea and coastal water transport
	612 Inland water transport
62	Air transport of which:
	621 Scheduled air transport
	612 Non-scheduled air transport
6304	Travel agencies, tour operators, and tour guides
7711	Car rental
92	Recreational, cultural and sporting facilities of which:
	921 Motion picture, radio, television and other entertainment activities
	9212 Motion picture projection
	9214 Dramatic arts, music and other art activities
	9219 Other entertainment activities
	923 Libraries, archives museums and other cultural activities
	9232 Museum activities and preservation of historical sites and buildings
	9233 Botanical and zoological gardens and nature reserves activities
	924 Sporting and other recreational activities
	9241 Sporting activities
	9249 Other recreational activities

². OECD, 2000. Measuring the Role of Tourism in OECD economies. The OECD Manual on Tourism Satellite Accounts and Employment. Enterprise, Industries and Services.

TABLE 3. MOBILE PHONE TECHNOLOGY USAGE CONTEXTS AND DESCRIPTIONS

Usage Aspect	Summary of Findings
Support from Management/ Boss	The employees don't get the expected support from the management as they use a technology
The extent to which the use of the mobile phone in your role affect personal privacy/work-life balance?	<ul style="list-style-type: none"> • There are situations where employees get annoyed to receive calls from their bosses during weekends and off-peak hours • Even though it brings a sense of disturbance, people who are 'connected' to their phones are used, and more comfortable to live in such a situation. • This connectedness is even more strong when it comes to working activities for the bosses/owners
The extent to which is mobile technology usage is perceived mandatory for employees within the company	<ul style="list-style-type: none"> • Mobile phone usage is mandatory and not an option • Everyone is assumed to own a mobile phone
Training needs on mobile phone technology in comparison to desktop computers	Mobile phones demand much less training than desktop computers
The method of learning how to use mobile phones	<ul style="list-style-type: none"> • It is a responsibility of the employee to understand how to use mobile phones • Only personal initiatives matter to the extent of knowing the usage of mobile phone technology
The extent to which Mobile Technology enhances your performance/output at work	<ul style="list-style-type: none"> • SMEs can't survive without it • It helps to simplify activities and re-define them.
The SMEs activities which are accomplished by mobile phone technology in your role	<ul style="list-style-type: none"> • Communicating with employees & customers • Marketing service contents using social media • Processing quick payments using mobile money • Reminding about events • Setting up appointments • Taking and retrieving descriptions notes of events • Assisting to provide Immediate technical supports • Sharing information
The functionalities of the Mobile phone which are used by SMEs frequently	Calls, WhatsApp, Facebook, Internet, mobile banking, camera, calculator, alarms, SMS, music, alarm, radio

VI. CONCLUSIONS AND FUTURE WORK

This paper has highlighted important usage aspects of mobile phone technology within the SMEs in the context of developing countries. It has essential due to the important roles played by mobile phones by the employees of SMEs especially in the regions with low ICT readiness like Tanzania. The results have shown various usage aspects of mobile phone technology and the associated findings that can help practitioners, mobile network operators, managers and policymakers. The limitation this study has is that it is more specific to the SMEs which perform tourist or service activities. Its main strength is that it provides a clear picture of the usage context that can help stakeholders and researchers to provide tailored solutions on the acceptance of mobile phone technology in SMEs of developing countries. Future studies may involve conducting a study to identify or categorise the

usage aspects in terms of their importance or accessibility to the SMEs.

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