HOW SOUTH AFRICAN SPAZA SHOP OWNERS UTILISE MOBILE COMMUNICATION TECHNOLOGIES TO RUN THEIR BUSINESSES

Raymond Matlala, M. Tech
Richard Shambare, DBA
The Business School, Tshwane University of Technology, South Africa
Marcia Lebambo, M. Tech
Faculty of Economics & Finance,
Tshwane University of Technology, South Africa

Abstract

The purpose of this study was two-fold. First, it investigated how spaza shop (tuck shop) owners in South Africa utilise mobile communication technologies. Secondly, it evaluated opportunities created by the use of mobile communication devices (e.g. smartphones and tablets) to attain competitive advantage. A survey which sampled 113 micro entrepreneurs operating spaza shops in Hammanskraal (a township in South Africa) was designed. Data were collected through self-completion questionnaires. Findings showed that the use of mobile communication technologies, particularly mobile phones, among micro enterprises was quite high. These were used particularly to communicate with both suppliers and customers. The study also found that in businesses not using ICTs, limited awareness of product functionalities, capabilities and affordability were factors for non-adoption. Given that most South African micro entrepreneurs operate on limited budgets and lack the financial resources to acquire sophisticated ICTs, the greatest value of this research is that it not only confirms the adequacy of mobile technologies in business, but it also shows that consistent usage results in competitive advantage and strategic opportunities.

Keywords: ICT, microentrepreneurs, smartphone, South Africa, spaza

Introduction

Studies on business failures in South Africa reveal that approximately eight out of ten micro enterprises fail (Matlala, 2014; Mason, 2013). A vast majority of these fall victim to a combination of the country's slow economic performance, under-capitalisation, high fixed costs, and bad debts (Ladzani

& Van Vuuren, 2002; Macleod & Terblanche, 1999; Mason, 2013; Olawale & Garwe, 2010). Entrepreneurship experts, including Lussier (1996) demonstrate that whereas larger businesses are big enough to enjoy economies of scale, small operators such as spaza shops, on the other hand, experience difficulty in controlling overheads including broadband Internet, Wi-Fi routers and airtime. In particular, the lack of resources negatively affects public relations and communication management strategies of small-scale businesses. For instance, traditional methods of communication are too costly and unresponsive to the dynamic needs of micro enterprises (Lebambo, 2014). For this reason, researchers are grappling with the problem of stimulating small businesses through information and communication technologies (ICTs) (Donner, 2004; Global Entrepreneurship Monitor, 2009; Lebambo, 2014; Matlala, 2014). In particular, Lussier (1996) and Lebambo (2014) argue that because of the small-scale nature of their operations, micro entrepreneurs are most constrained to sustain their businesses because of the lack of resources. To survive, micro entrepreneurs need to look at new and creative sources of managing their enterprises - the application of MCTs being one of these. It is, therefore, not surprising that the literature from developing countries including South Africa increasingly reports on the innovative applications of MCTs in business management (Donner, 2004; Shambare, Rugimbana & Zhowa, 2011). As a result, mobile devices are viewed as business developmental tools (World Bank, 2005).

Research Purpose

Having considered the foregoing, it is important to note that significant numbers of micro enterprises in South Africa experience difficulty in sustaining their businesses owing to the lack of resources. At the same time, there is strong evidence that even the most basic ICTs in general, and mobile devices in particular, induce efficiency in business management (Matlala, 2014). The latter study seems to be part of a growing body of knowledge reporting on the increased use of mobile communication technologies (MCTs) by entrepreneurs in developing countries including South Africa (Donner, 2004; Lebambo, 2014; Matlala, 2014). While these findings are welcome, specific strategies related to MCT usage patterns by micro entrepreneurs remain largely unknown. It was, thus, opportune to study the extent of MCT usage within a small business setting in South Africa. Against this background, the purpose of this study was two-fold. First, it investigated how spazashop owners in South Africa utilise mobile communication technologies (e.g. mobile phones, smartphones, and tablets). Secondly, it evaluated opportunities created by the use of mobile communication devices (e.g. smartphones and tablets) to attain competitive

advantage. To achieve these, the following research questions were formulated:

RQ1: *Which mobile communication technologies are available and how are these used by spaza shop owners in Hammanskraal to manage their businesses?*

RQ2: *How do micro entrepreneurs in Hammanskraal apply mobile communication technologies to gain competitive advantage?*

To answer these questions, the following section discusses the literature review. After that, the methodology will be discussed, followed by the results and conclusion.

Literature Review

Technology usage in entrepreneurship

In today's marketplace, ICTs are important tools for business management. They enhance entrepreneurs' productivity and help their businesses maintain competitive advantage (Herrington et al., 2010). The most commonly used ICTs include personal computers, laptops, telephones, mobile phones, fax machines, photocopiers, and even televisions. The literature indicates that these innovations play an important role in the areas outlined below.

Mobile devices and micro entrepreneurs

The uptake of mobile phones in South Africa is relatively high. At the end of 2009, almost 95 per cent of South African adult consumers owned at least one mobile phone (Langa, 2013). In 2013, South Africa recorded a ten per cent mobile penetration rate, which meant that at least ten new subscribers per every 100 individuals in the country have recently acquired and are using a cell phone (Langa, 2013). In fact, these data support the notion that South Africa has one of the highest mobile penetration rates. This presents an opportunity for the application of mobile phones in informal and micro enterprises. Specifically, Matlala (2014) found that South African micro entrepreneurs' adoption rates of mobile phones are very high and are largely influenced by the high mobile penetration rates.

In support of the foregoing argument, technology specialists such as Donner (2004) and Esselaaret al. (2007) observe that although micro entrepreneurs tend to use less sophisticated ICTs, including mobile phones and other mobile devices, their adoption of these innovations tend to be relatively high. Micro entrepreneurs' adoption of mobile devices is attributed to three pragmatic reasons. First, in comparison to other ICTs, mobile devices are cost efficient. These devices are relatively cheap to purchase as well as to operate. Secondly, the availability of free applications (or apps) from the Internet allows these devices to be used as multi-functional tools –

telephones, cameras, personal organisers, and even digital scanners. Another important feature of mobile devices is that there is no need to purchase Internet modems, as these readily connect to the Internet. Thirdly, mobile devices, within the context of micro entrepreneurs, can be used for both personal and business purposes (Esselar et al., 2007; Matlala, 2014).

Spaza shop mobile device utilisation framework

There is increasing empirical evidence suggesting that the usage of ICT in entrepreneurship will possibly aid micro enterprises gain competitive advantage and enhance their chances of survival in the market (Qureshi, 2005). It is believed that the use of ICTs in small businesses will possibly help to improve communications (i.e. suppliers and customer's communication), reduce the cost of operation (i.e. day to day travelling cost to buy stock and meet customers) and improve access to information and knowledge (i.e. being informed about prices in your business) (Moyi, 2003; Wolf, 2001). Research has shown that when micro enterprises adopt ICT they can grow by 3.4 per cent (World Bank, 2012). In general, the literature indicates that these innovations play an important role in the following areas:

Productivity*:** Businesses, with the aid of technology, can greatly improve their productivity. Research indicates that use and understanding of technology greatly improve per capita productivity (Kosempel, 2007; Wolcott et al., 2008). Increased productivity improves the efficiency of management; hence the following hypothesis was developed: ***H1: *Enterprises with access to ICTs are more likely to increase their productivity outputs.*

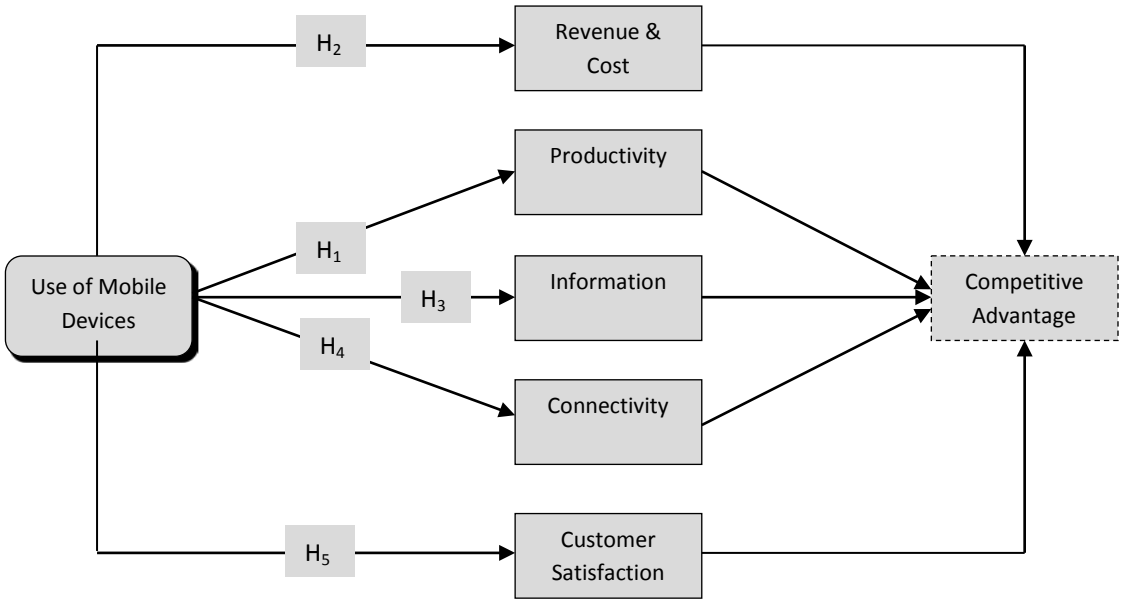
Revenue and cost: Kamal & Jackson (2014) state that South African SMMEs use ICT for cost savings. Furthermore, ICT provides entrepreneurs with the opportunity to 'reduce costs of doing business, reduce use of intermediaries, and increase price transparency and negotiation, thus increasing the profitability of the business' (Qureshi et al.,2005). This led to the formulation of the following hypothesis: ***H2:*** *Enterprises with access to ICTs (mobile communication technologies) are more likely to (a) increase their revenue and (b) reduce operating costs.*

Improved access to information*:** ICTs enable managers to discover information that was either impossible or costly to access. For instance, *Spaza News*, an online newsletter, provides spaza shop owners with information and knowledge about opportunities such as micro-finance, advice, tips and regulations (*Spaza News*, 2010). Consequently, the following hypothesis was formulated: ***H3: *Enterprises with access to ICTs (mobile communication technologies) are more likely to obtain new information than those that do not have access.*

Connectivity: ICTs can serve as communication, collaboration and transaction tools for SMEs (Molla, 2005; Parida, 2008). ITCs are used within the firm, and to provide basic information about the firm's products and services to customers (Molla, 2005; Parida, 2008). Matlala (2014) found that some businesses utilise mobile devices to stay connected with customers, suppliers, business associates (i.e. employees and business partners) and to some extent even family and friends. ***H4:*** *Enterprises with access to mobile communication technologies are more likely to have higher levels of connectivity with stakeholders.*

Customer service: Businesses use mobile devices to transact with their customers and increase their existing customer networks (Donner, 2006). Matlala (2014) found that businesses make use of mobile devices to determine the level of satisfaction and complaints from customers, thus improving customer service. ***H5:*** *The consistent use of mobile communication technologies has a significant effect on improving customer relationships.*

Figure 1: The conceptual model



Research Methodology

A descriptive survey (Malhotra & Birks, 2007) was designed to collect primary data from a sample of owners and managers of spaza shops that operate in Hammanskraal. After a brief explanation of the purpose, aims and objectives of the study and securing respondents' permission, researchers administered the self-completion questionnaires to research participants at their place of work – the spaza shops.

Sample

In order to minimise sampling bias, a systematic sampling approach was utilised to select respondents for the research (Malhotra & Birks, 2007). Every third spaza shop in the Hammanskraal townships of Mandela Village, Marokolong, and Stinkwater was selected to participate in the study. Researchers chose the eastern part of Hammanskraal to begin the sample selection. Thereafter, every third *spaza* shop along the main streets was invited to participate in the study. Although authors on survey designs including Kitchenham and Pfleeger (2002:19) indicate that while systematic sampling is a probabilistic sampling technique, if the list of respondents in the sampling frame is not randomly ordered then bias could also be introduced in the sampling design. Given that all the respondents were a homogenous sample of spaza shop owners (Calder, Phillips & Tybout, 1981), the shortcomings of the systematic sampling approach were considered to present minimal harm, if any, to the study.

Questionnaire

The data collection instrument utilised in the study was adapted from Donner's (2004) study. The questionnaire was modified to suit the South African setting and in particular the spaza shop context. In addition to the X dimensions tested in Donner's (2004) study, researchers added two more dimensions to the questionnaire – Revenue and Cost, and Customer Satisfaction. Thereafter, a draft questionnaire containing X dimensions related to spaza shops' utilisation of mobile devices was developed. A pre-test of the questionnaire was then conducted on about eight micro entrepreneurs. After minor adjustments to the language, the final questionnaire was developed, including a cover letter, instructions and structured questions covering respondents' demographics, their business experience, the nature of their businesses, and dimensions of mobile device usage. Prior to administering the questionnaire, the internal consistency of the constituent sub-scales was assessed using Cronbach's alpha coefficient in which the inter-item and item-to-total correlations were used.

Data Collection

Two research assistants were trained, and they helped to distribute questionnaires. All participants were fully made aware of the purpose and objectives of the study before obtaining their consent. After consent was obtained, the questionnaire was distributed. To promote a high response rate, the respondents were asked to complete the questionnaires on the spot. The research assistants collected all completed questionnaires. All returned questionnaires were checked for completeness; those with more than four missing responses on the Likert scale were rejected.

Results

Respondents' demographic profile

A total of 217 questionnaires were distributed. Approximately 150 questionnaires were returned. Of these, 113 questionnaires were fully completed and used for analysis.

Table 1: Respondent's biographical

Biographical criterion		Percentage
Gender	Male	67.3
	Female	32.7
Age	17 – 25 years	16.7
	26-35	25.7
	36-45	37.2
	45-55	19.5
	56>	0.9
Level of Education	Primary school	31.9
	Matric/high school	54.9
	Diploma/Degree	11.5
	B.Tech/ Honours Degree	1.8
Years operating business	<1 year	8.0
	1 year	12.4
	2 years	6.2
	3 years	26.0
	4 years>	48.0
Number of employees	One	54.0
	Two	32.0
	Three	4.0
	Four	5.0
	Five or more	4.0

Business profile

First, it was important to establish the ownership structure of the participating spaza shops. A vast majority (68 per cent) of the businesses indicated that they operated as sole traders. Almost 20 per cent were partnerships; 11 per cent were private companies; and the remaining one per cent reported to be cooperatives. The fact that a majority of the businesses were sole traders appears to be consistent with the nature of spaza shops in South Africa, which tend to be one-family or at least one-man businesses. Consistent with the latter findings, further analysis revealed that of the 113 spaza shop owners surveyed, 54 per cent of them reported having one employee, almost 32 per cent indicated having two employees and the remaining 11 per cent had three or more employees.

The usage patterns of mobile devices

Secondly, the nature and extent of usage of mobile devices was also determined. With regard to the types of technologies used by the

respondents, most of the respondents (86 per cent) used simple ICTs. As shown in Table 2, mobile phones are the most popular technology used in spaza shop management.

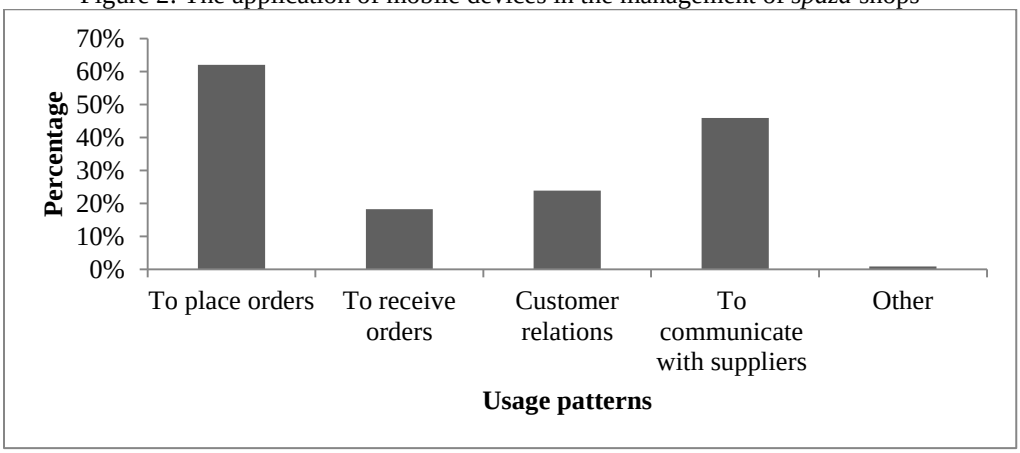
Table 2: Types of technologies used in *spaza* shops

Technology	Percentage
Mobile phone	85.8
Smartphone	22.1
Tablet	7.1
iPad	2.7
Laptop	12.4

Functions of mobile devices in spaza shops

The data shows that approximately 62 per cent of respondents used these technologies to place orders, 19 per cent to receive orders from customers, 25 per cent for customer relations purposes and 45 per cent to communicate with suppliers. Only one per cent of respondents used the technologies for other purposes (Figure 2).

Figure 2: The application of mobile devices in the management of *spaza* shops



Tests of hypotheses

In order to test the hypotheses developed for the study, it was important to first assess the validity and reliability of the measuring instrument. As shown in Table 1 and 2 above, the questionnaire consisted of sub-scales developed for this research and from past studies. Construct validity, in which both convergent and discriminant validity were considered, was measured. Thereafter, internal consistency was also assessed. The results of these tests are presented next.

Measuring construct validity

When measuring the construct validity of a multi-scaled questionnaire, Yee et al. (2010) recommend a two-step approach. The latter

authors suggest that convergent validity must first be assessed by means of factor analysis, and then correlation analysis should be used to ascertain discriminant validity.

Convergent validity

In keeping with the above, confirmatory factor analysis by means of principal component analysis (PCA) utilising Varimax rotation was conducted for each of the seven sub-scales of the questionnaire (Field, 2009). In order to proceed with the PCA, factorability statistics, including the Kaiser-Meyer-Olkin (KMO) test of sampling adequacy and the Bartlett's Test of Sphericity were determined. Table 3 below summarises these results.

Table 3: KMO and Bartlett's test

Variable	KMO	Bartlett's test		
		Chi-Square	df	P-value
Productivity	.889	639.247	15	.000
Revenue and ICT	.840	469.617	6	.000
Connectivity	.584	290.567	15	.000
Information	.500	56.242	1	.000
Intrinsic	.755	266.713	21	.000
Usage	.850	518.409	36	.000
Customer satisfaction	.500	33.427	1	.000

For all the seven sub-scales, the KMO was observed to above the 0.5 threshold (Field, 2009:647), which suggested acceptable levels of sampling adequacy. Also, the Bartlett's test statistics were observed to fall within acceptable levels ($p < .000$). With both these tests yielding satisfactory results, the researchers then proceeded to run the PCA test, whose results are presented in Table 4.

Table 4: Factor loadings and measures of sub-scales

Sub-scale	Factor Loadings						
	Prod	**Rev.**	**Info**	**Conn**	**Intrinsic**	**Usage**	**Cust. Satis**
Item 1	.916	.895	.903	.929	.675	.876	.869
Item 2	.740	.940	.903	.754	.713	.764	.869
Item 3	.891	.947		.910	.713	.864	
Item 4	.908	.948		.906	.487	.649	
Item 5	.918			.522	.785	.512	
Item 6	.903			.840	.739	.138	
Item 7					.719	.885	
Item 8						.077	
Item 9						.851	

Analysing the factor loadings in Table 4, with the exception of Item 4 of the Intrinsic sub-scale, it is clear that all remaining items, for all the sub-scales, loadings were greater than 0.5. This illustrates relatively high levels of convergence of the items within each sub-scale. Accordingly, this

provided enough evidence to suggest the presence of convergent validity of all the sub-scales.

Discriminant validity

For discriminant validity, correlation analysis among the variables was performed. The results show that correlations are low; only three variables had correlation coefficient values of more than 0.8, while all the remaining values are significantly less than 0.8 - see Table 5 (Bagozzi, 1994; Yee et al., 2010). From these results, it can be inferred that the constructs are indeed distinct from one another, and it was therefore deemed to be at an acceptable level of discrimination among the variables.

Table 5: Correlation coefficient between the variables

Variables	1	2	3	4	5	6	7
1. Productivity	1						
2. Revenue and ICT	.897	1					
3. Connectivity	.581	.606	1				
4. Information	.679	.691	.807	1			
5. Intrinsic	.608	.639	.628	.665	1		
6. Usage	.800	.861	.724	.799	.709	1	
7. Customer satisfaction	.347	.413	.334	.320	.297	.392	1

Convergent and discriminant validity were maintained; it can, therefore, be concluded that the construct validity of the scale was also established.

Reliability

After having established the validity of the questionnaire, it was vital to determine the reliability of the measurement items before proceeding to test the various hypotheses (Blumberg et al., 2011). The Cronbach's alpha test was used to test the measure of internal consistency (i.e. reliability) of the measurement instrument, in which the standard practice of considering the minimum alpha threshold of 0.7 was applied (Field, 2009).

Table 6: Cronbach's alpha (α) for the sub-scales

Instrument (Sub-scale)	Cronbach's alpha (α)
Productivity	0.950
Revenue & Cost	0.952
Connectivity	0.915
Information	0.774
Intrinsic	0.805
Usage	0.920
Customer satisfaction	0.670
All variables	0.920

All independent variables were tested for reliability. As summarised in Table 6 above, the resultant Cronbach's alphas ranged from 0.670 (customer satisfaction) to 0.952 (productivity), which indicate an acceptable

reliability measure for the questionnaire (Field, 2009; Ozer & Gunluk, 2010). Table 6 shows Cronbach's alpha associated with each of the seven variables comprising the questionnaire. As shown in Table 6, all the constructs except for customer satisfaction were observed to have acceptable Cronbach's alpha levels, above 0.6 (Ozer & Gunluk, 2010).

Hypotheses Testing

To test the formulated hypotheses, linear regression analysis was utilised. This meant testing the relationships between dependent and independent variables as well as their significance. A total of five dependent variables (i.e. productivity, revenue and operating costs, connectivity, information and customer satisfaction) were identified as being affected by the continued usage of mobile devices. The five hypotheses proposed by the conceptual model were tested using regression analysis. Linear regression was individually applied to test each dependent variable with the independent variable (usage of mobile devices). The regression model consists of:

Table 7: Accepted hypotheses

Independent variable	Alpha	Beta	R	R-square	P	Decision
Productivity	.752	.828	.800	.639	.000	Accept Ho
Rev. & operating costs	.797	.799	.861	.742	.000	Accept Ho
Information	.390	.796	.799	.639	.000	Accept Ho
Connectivity	.787	.626	.724	.525	.000	Accept Ho
Customer satisfaction	1.394	.524	.392	.154	.000	Accept Ho

The rationale of this hypothesis was to test the relationship between access to ICTs and productivity, as well as to discover the impact of ICT usage on the productivity output of the business. The data indicates that having access to ICTs makes a significant contribution to increasing the production output of the business.

Discussion

The purpose of this research was to investigate how spaza shop owners utilise mobile communication devices to attain competitive advantage in their local markets. The study specifically sought to address the paucity in the literature in terms of how micro entrepreneurs utilise mobile communication devices in their daily operational activities. On the whole, as found in previous studies, there was evidence suggesting high rates of adoption of mobile communication tools by the Hammanskraal micro enterprises (Donner, 2006; Good & Qureshi, 2009). The findings from this study indicate that a vast majority (about 98 per cent) of respondents owned a mobile device(Esselaaret al., 2007). The most popular devices were observed to be mobile phones, smartphones, tablets, iPads and laptops.

Results show that mobile phones remain the most commonly used ICTs among micro enterprises at 85 per cent. Authors such asDeen-Swarray et al. (2013) and Donner (2006) have also found that mobile phones are the most commonly used mobile device to support informal businesses**.**

What was most encouraging was that close to 80 per cent of the respondents used these devices for business purposes. Furthermore, business owners were found to communicate more with suppliers than with customers, as the majority of the respondents used these devices to place orders with suppliers. Only a few indicated that they used them to receive orders from customers as well as build customer relations. Similar findings were also reported in the literature (Deen-Swarray et al., 2013; Donner: 2004: Qureshi, 2005).

Another important finding was that this study confirmed earlier results by authors including Donner (2004) and Esselar et al. (2007) that consistent use of mobile technologies in micro enterprises increases micro enterprises' profitability and creates competitive advantage. For example, in this study, it was observed that micro entrepreneurs utilise smartphones to keep in touch with both their suppliers and customers. By utilising a mix of Internet-driven functionalities including messaging services, the spaza shops are able to reduce costs in terms of travelling. Furthermore, the availability of communication applications (also known as apps) such as WhatsApp and Facebook mean that communication between the business and its stakeholders - including suppliers, customers, and vendors - is optimised. Given the limited budgets that micro enterprises operate, the opportunity of reduced costs in travelling and communication not only increases connectivity of entrepreneurs with stakeholders, but also minimises operating costs, thus increasing profitability. As a corollary, productivity is greatly improved (Deen-Swarray et al., 2013). These findings are important in that the utility of ICTs, particularly mobile phones, plays an important role in the profitability of informal businesses (Deen-Swarray et al., 2013; Donner, 2004; Donner, 2006; Esselaar, et al.,2007).

While adoption of mobile communication was quite high, some spaza shop owners, albeit being a minority, reported that they did not use mobile devices. Further inquiry revealed that lack of knowledge, affordability and limited access to these technologies were some of the reasons cited for non-adoption. These results are consistent with the findings by Rashid and Elder (2009) and later, Deen-Swarray et al.(2013).

Conclusion

While the literature on mobile communication devices, particularly mobile phones, reports on the application of these technologies in business, very little study reports on the South Africa experience, and in particular, spaza shop owners. As a result, this study plays an important role in addressing this gap in the literature. The contributions of mobile device technologies to micro enterprises' development have been illustrated in this study and add to the emerging empirical evidence about their impact on profitability and competitive advantage. It was observed that ICTs have a significant impact in terms of productivity output, increasing revenue and minimising operating costs, increasing the level of new information acquisition, finding new business and having a positive influence on customer satisfaction. To further explore this topic, the following areas are suggested for further research: (1) undertaking qualitative studies using the interview method that enables respondents to give their opinions and suggestions on the instrument and (2) correlational studies focussing on the direct impact of mobile communication technologies on profitability of informal businesses.

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