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Joshua R A Ndiege
University of Fort Hare, South Africa & United States International University-Africa, joshuarumo@yahoo.com

Marlien E. Herselman
University of Fort Hare, South Africa & Meraka Institute, CSIR, Pretoria South Africa, mherselman@csir.co.za

Stephen V. Flowerday
University of Fort Hare, South Africa, sflowerday@ufh.ac.za

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Research Paper

Joshua R. A. Ndiege
University of Fort Hare, South Africa
United States International University-Africa
joshuarumo@yahoo.com

Marlien E. Herselman
University of Fort Hare, South Africa
Meraka Institute, South Africa
mherselman@csir.co.za

Stephen V. Flowerday
University of Fort Hare, South Africa
sflowerday@ufh.ac.za

ABSTRACT

Many small and medium enterprises (SMEs) in developing countries continue to be challenged by their information technology (IT) adoption process, which is often characterized by a number of deficiencies. The purpose of this study was to examine the role of absorptive capacity (AC) in SMEs' performance, as well as establish the correlation between SMEs' AC and their IT adoption process. The findings of this study, obtained by measuring different dimensions of AC using Jimenez-Barrionuevo, Garcia-Morales, and Molina's scale of 18 items, suggest that AC plays a critical role in the performance of SMEs in Kenya and that SMEs with strong AC employed the use of more superior IT adoption processes than did their counterparts with low levels of AC. The researchers submit that, if exploited, AC has the potential to improve the IT adoption strategies of SMEs in Kenya and those of other developing countries that operate within similar environments.

Keywords

Absorptive capacity, IT adoption, Kenyan SMEs.

INTRODUCTION

Market globalization and technological advancements over the past few years have compelled small and medium enterprises (SMEs) to devise ways of responding swiftly to market changes if they are to remain relevant and competitive (Manochehri, Al-Esmail and Ashrafi, 2012). With economies becoming increasingly knowledge based, there is a growing use of knowledge by firms to develop better strategies to improve their competitiveness (Higgins and Aspinall, 2011). Conversely, failures in many businesses have been attributed to their inability to learn and adapt to changes in the business environment (Adeniran and Johnston, 2012).

The absorptive capacity (AC) of an organization determines its ability to explore and exploit both external knowledge and its existing knowledge base (Zahra and George, 2002). As a result, AC is an essential element in helping organizations gain competitive advantage by producing commercial products or services through the transformation of knowledge. Businesses with well-developed capabilities for the acquisition, assimilation, transformation, and exploitation of new knowledge are considered as having high levels of AC (Zahra and George, 2002). Accordingly, such businesses are better positioned to be more adept at refurbishing their knowledge base by identifying developments in their external environment and internalizing such knowledge to sustain their competitiveness.

The IT adoption in SMEs and the challenges facing these enterprises in their IT adoption process have been extensively documented and researched (Parker and Castleman, 2007; Apulu, Latham and Moreton, 2011; Dhillon, Stahl and Baskerville, 2009). The studies have not, however, focused on the effect of AC on IT adoption strategies in SMEs in developing countries. A few studies that have touched on the relationship between these elements have been focused within the context of large firms in developed countries (Ashrafi and Murtaza, 2008; Ayyagari, Beck and Demirguc-Kunt, 2007; Roberts, Galluch, Dinger and Grover, 2012). In the current literature, little attention has been paid to IT adoption in SMEs in Kenya (Bowen, Makarius and Mureithi, 2009; Macharia, 2009; Ndiege, Wayi and Herselman, 2012) and there has been no focus on AC in these SMEs. Furthermore, to the best of the authors' knowledge there is no literature that focuses on establishing the link between AC and IT adoption strategies within the context of SMEs. This study therefore contributes to this thin body of knowledge by endeavouring to establish the role of Kenyan SMEs' AC and, further, attempting to identify whether a correlation exists between the SMEs' AC and their IT adoption strategies.

The remainder of this paper is structured as follows: We follow this introduction by presenting the literature on AC that is relevant for our study by beginning with the definition of AC. Thereafter we focus on the measurement of AC. This is then followed by a presentation of the literature on the IT adoption process within SMEs in developing countries. The research methodology adopted in the study is then presented. Following this is the presentation and discussion of the study findings and, finally, a number of conclusions based on the study are made.

UNDERSTANDING AC

Absorptive capacity (AC) is a term initially coined by Cohen and Levinthal (1990). The term is used to refer to the acquisition of new knowledge and its use in improving the competitiveness of the organization (Lane, Koka and Pathak, 2006; Cohen and Levinthal, 1990). Cohen and Levinthal (1990, p. 128) define AC as the organization's ability to "recognize the value of new information, assimilate it, and apply it to commercial ends." Different researchers have defined the term in diverse ways. A summary of these definitions is provided in Table 1.

Definition	Author(s)
Ability to recognize the value of new external knowledge, assimilate it and apply it to commercial ends	**Cohen and Levinthal (1990)**
A set of skills needed to deal with the tacit part of transferred knowledge and the need to transform this knowledge	**Mowery and Oxley (1995)**
Ability to learn and solve problems	**Kim (1997)**
Ability of an organization to learn from another	**Lane and Lubatkin (1998)**
Includes evaluation, acquisition, integration and the commercial utilization of new external knowledge	**Van den Bosch, Volberda and De Boer (1999)**
The set of an organization's routines and processes used to acquire, assimilate, transform and exploit knowledge	**Zahra and George (2002)**
Organization's ability to learn and act on scientific findings and technological activities outside its limits	**Sun and Anderson (2010)**

Table 1: Definitions of absorptive capacity

From Table 1 it is clear that a straightfoward empirical measure of AC is lacking. Lane et al. (2006) submit that this has not only led to minimal research on how AC is developed, but it has also resulted in problems with comparing research results. Notwithstanding this, it can be concluded that AC is the learning ability that organizations develop to identify the external information and knowledge that is important to them, to internalize it and to customize it to meet and suit their specific needs, and consequently take advantage of it for the good of the organization.

This study adopts Zahra and George's (2002) definition of AC because it takes into consideration the various processes that an organization goes through to transform new knowledge into knowledge that is valuable for application. The definition largely accommodates elements mentioned by other authors in their definition of AC. Furthermore, this definition has been generally accepted by a number of researchers (Haro-Dominguez, Arias-Aranda, Llorens-Montes and Moreno, 2007; Harrington and Guimaraes, 2005; Francalanci and Morabito, 2008).

Measure of AC

There is still no commonly agreed measure used to adequately assess an organization's AC (Roberts et al., 2012). Being an intangible asset (Jimenez-Barrionuevo, Garcia-Morales and Molina, 2011), it is more challenging to conceptualize and even to define the dimensions that shape AC. Intangible assets are those that are difficult to evaluate from an accounting perspective (Teece, 2000). Intangible assets have the potential of contributing significantly to sustained competitive advantage as they are not easily imitated by competitors (Teece, 2000). However, Carmeli (2000) also observes that intangible assets are challenging to measure and evaluate and even to determine their existence in organizations that have

them. To this end, AC presents researchers with a potential area of research while at the same time presenting both theoretical and methodological challenges.

Jimenez-Barrionuevo et al. (2011) performed a comprehensive analysis of the scientific literature on AC and considered various techniques that have been used to measure an AC construct. It is clear from their review of previous work touching on AC that research and development (R&D) have been mainly used as proxies to measure AC. Taking into account several scales used by researchers to measure AC, Jimenez-Barrionuevo et al. (2011) have proposed a scale containing 18 items for use to measure the AC construct. The scale addresses the following issues within the four stages of AC (Zahra & George, 2002):

Acquisition: Interaction, Trust, Respect, Friendship and Reciprocity.
Assimilation: Common language, Complementarity, Similarity, Compatability1 (organization culture) and Compatability2 (operating and management style).
Transformation: Communication, Meetings, Documents, Transmission, Time and Flows.
Exploitation: Responsibility and Application.

In this study, AC is measured as a multidimensional construct taking into account dimensions of the acquisition, assimilation, transformation, and exploitation of knowledge. Since AC is an intangible asset, it may be measured by looking at the internal mechanisms or by focusing on what causes it to occur (factors that influence it) (Carmeli, 2000). Jimenez-Barrionuevo et al.'s (2011) scale of 18 items is relevant and distinctive in this study for the following reasons: Firstly, the model shifts the focus from the traditional use of R&D as a surrogate measure for AC. Since many SMEs do not have established R&D frameworks (Waalkens, Jorna and Postma, 2004) the use of such a measure would be contextually irrelevant for this study. Secondly, the scale is very comprehensive and reflects the richness of the AC construct in its totality.

Further, while this scale by Jimenez-Barrionuevo et al. draws from other prominent researchers in this field like Cohen and Levinthal (1990), Lane et al. (2001) and Zahra and George (2002), the scale was also empirically tested using a population of 5,163 Spanish organizations drawn from the automotive and chemical sectors. Therefore, this scale consists of items that have already been empirically tested in other studies.

THE IT ADOPTION STRATEGIES IN SMEs IN DEVELOPING COUNTRIES

Three definitions of IT adoption can be identified in the literature. The variations stem from the varied use of the term within the stages of IT adoption. IT adoption is commonly applied to describe a three-phase process (Sharma & Bhagwat, 2006; Russell & Hoag, 2004; Rogers, 2003; Laudon & Laudon, 2009):

- first, the **decision making stage**, when information about the desired IT is collected, evaluated, and the decision to adopt IT is made
- second, **the implementation stage**, when the IT components are installed and consequent usage of the technology occurs
- third, the **evaluation stage**, when the IT solution that was implemented is evaluated.

IT adoption strategy should ideally involve the three processes: decision, implementation, and evaluation. There may be variations in the manner by which an organization might approach these stages and this will bring about variations in the results. Nevertheless, an IT adoption strategy should outline

how the decision to adopt or not to adopt is going to be arrived at; if the decision is to adopt IT, how the implementation is going to be carried out; and, finally, how the evaluation process will be done to ensure the continued relevance of the adopted IT to the organization.

Organizations are increasingly motivated to adopt the use of IT to help enhance the coordination of activities between various organizational departments to support and improve decision-making processes, with the overall objective being the achievement of high levels of efficiency and effectiveness. Most SMEs in developing countries are, however, characterized by poor technology and management competencies (Apulu et al., 2011). These make them sceptical about adopting new technologies (Manochehri et al., 2012). As a result they often lag behind the large organizations in their use of IT.

Many SMEs in developing countries do not have the necessary know-how to evaluate their need for IT. Such know-how involves identifying processes that could benefit from IT adoption. However, many SMEs consider such a process to be cumbersome and time consuming (Awa, Eze and Urieto, 2011; Manochehri et al., 2012). As a result, these SMEs seldom engage in requirement engineering activities prior to their decision making on whether or not to adopt IT. While such SMEs are generally owned and managed by owners/managers, and while it is also true that the management will not be the only users of the technology, the potential users within the SMEs are seldom engaged in the decision-making process (Mpofu and Watkins-Mathys, 2011). The decision on whether or not to acquire technology, the type of technology that is needed, and where to obtain it is generally made in an ad hoc manner by management without consulting with other employees/stakeholders (Ndiege et al., 2012; Awa et al., 2011).

While it can be said that the decreasing cost of IT along with the increase in IT products that are user-friendly have encouraged more SMEs in developing countries to adopt IT, a previous study of SMEs in Eldoret, Kenya (Ndiege et al., 2012) revealed that the SMEs were still lagging behind in successfully converting IT's full potential into practice. Ndiege et al. observed that a number of the SMEs that participated in the study appeared to experience problems at various stages of their IT adoption process. The characteristics of SMEs together with the prevailing environments within which SMEs in Kenya operate are major contributors to the challenges that these enterprises face in their IT adoption process (Moyi,   Otieno,   Mumo   and   Ronge,   2006). Table 2 indicates the challenges inherent in the current IT adoption strategies employed by SMEs in developing countries.

Stage of the IT adoption strategy	Present scenario	Associated shortcomings	Illustrative references
Decision stage	**IT need identification is primarily done by the SMEs' owner/manager.**	**Lack of input from other key stakeholders. This could also lead to the rejection of the IT by other stakeholders not involved in the process**	**Apulu et al. (2011); Awa et al. (2011); Ndiege et al. (2012); Manochehri et al. (2012)**
	IT need identification is not done as a form of analysis; rather the management makes ad hoc decision regarding the existence of a need.	**Inaccurate/wrong needs identified resulting in use of IT that does not address the actual/real need of the SMEs.**	
	SMEs owners/managers consult their peers who have adopted IT to help identify IT vendor and they do not evaluate what is available in the market.	**Not being open to other sources of information and being unaware of other better technologies in the market.**	
	The choice of IT is primarily influenced by the availability and affordability of the IT solution.	**May end up with IT that is affordable but does not address the needs of the SMEs.**	
Implementation stage	**The IT solution is implemented and the users trained on its usage by the vendor.**	**No shortcomings**	**Ashrafi and Murtaza (2008); Mpofu and Watkins-Mathys (2011); Ndiege et al. (2012); Manochehri et al. (2012)**
	No skilled IT staff is acquired and the SMEs make use of the available pool of staff.	**Some sophisticated technologies may require the hiring of skilled staff to operate them.**	
Evaluation stage	**Many SMEs never engage in an evaluation of the implemented IT.**	**The continued relevance of the IT to the SMEs in never determined.**	**Awa et al. (2011); Marthan and Tan (2010); Ndiege et al. (2012)**

Table 2: Present IT adoption strategy and the shortcomings

RESEARCH METHODOLOGY

In this study, the aim was to understand events in their natural settings with the goal of interpreting phenomena in terms of the meaning people bring to them (Creswell, 2007). The study focuses on AC and IT adoption strategies and these are viewed as social constructions (Myers, 2009). As a result, a qualitative, interpretive case study research approach was considered the preferred methodology for exploring the complex phenomenon of AC. In interpretive research, the assumption is made that reality and knowledge are constructed socially (Klein and Myers, 1999) and researchers must make contact with the research participants and, therefore, be a participant observer in order to obtain the reality and

meanings within specific social contexts. Multiple case study design has been adopted for this study in order to produce a richer understanding of the phenomenon under study (Yin, 2009).

The SMEs that were recruited to participate in this study were carefully selected (Yin, 2009) to include only those that had adopted the use of IT. This was done to ensure that the selected SMEs fitted the purpose of the study. The population of interest was defined as SMEs in the four major towns of Kenya, namely, Nairobi, Mombasa, Kisumu, and Eldoret. These towns are located in the counties of Nairobi, Mombasa, Kisumu, and Eldoret, respectively. The choice of the major towns was informed by the relatively high technological penetration within them. The participants were selected across industrial sectors in each county in order to provide a more comprehensive view of research issues and also to provide practical and theoretical implications for SMEs in different sectors and the research literature in this area of study. Two SMEs from each town were recruited to participate in the study. From each SME, one SME owner/manager and two employees were recruited as study participants. The informants were purposefully chosen from the SMEs to include only those whowere knowledgeable about the issues that were being researched and were willing to share their understanding about them. This ensured that the participants were able to provide accurate and credible data on the issues investigated in this study.

The process of data collection was conducted from May 2012 to December 2012. Data was generated from participants' experiences in their SMEs' AC and IT adoption strategy. To achieve this, questionnaires and semi-structured interviews were used as data gathering tools. The coding and analysis of data was done through the use of NVivo 10 (computer-assisted qualitative data analysis software).

A pilot study was initially conducted in order to test the trustworthiness of the research instruments and also to ensure that the data collected from the research instruments adopted adequately addressed the research objectives. Two SMEs were used in this pilot study, one from the town of Eldoret and another from the town of Kisumu. The selection of the two SMEs (EdSME01 and KiSME01 See Table 3) was informed by two main reasons. Firstly, the ease of accessibility of the SMEs, and secondly, the researcher's past acquaintances with the two SMEs. The outcome of the process was impressive in terms of the refining of the research instruments. Nearly all the respondents were of the view that the questionnaire was simple and easy to complete. However, a number of suggestions were made with regard to reconstructing certain statements so that they would be easier to understand and, subsequently, certain adjustments were made to accommodate these suggestions.

EMPIRICAL FINDINGS

SME's location and code	Industry	IT Solution(s) used	Years in operation	Emp. on permanent terms	Emp. on contract terms	Total no. of employees	Manager's education and code	1st employee's education and code	2nd employee's education and code
Eldoret, EdSME01	Financial services	1, 2, 3, 4	12	10	5	15	BCom, EdMgr1	BA, EdEmp1	BA, EdEmp2
Eldoret, EdSME02	Food services & guesthouses	1, 3, 4	22	18	7	25	Diploma, Edmgr2	Diploma, EdEmp3	Diploma, EdEmp4
Kisumu, KiSME01	Retail shop	3, 5, 6	7	2	10	12	Diploma, KiMgr1	Diploma, KiEmp1	Cert. in Secondary Education, KiEmp2
Kisumu, KiSME02	Bookshop	3, 6	18	3	6	9	BA, KiMgr2	Cert. in Secondary Education, KiEmp3	Diploma, KiEmp4
Nairobi, NaSME01	Financial services	3, 4	15	8	3	11	BA, NaMgr1	BA, NaEmp1	Certified Public Accountant, NaEmp2
Nairobi, NaSME02	Software development	3, 4, 7	6	8	2	10	Bsc, NaMgr2	Bsc, NaEmp3	Bsc, NaEmp4
Mombasa, MoSME01	Retail shop	3, 6, 8	8	9	4	13	Diploma, MoMgr1	Cert. in Secondary Education, MoEmp1	Cert. in Secondary Education, MoEmp2
Mombasa, MoSME02	Food services & guesthouses	1, 3, 6	13	5	14	19	BA, MoMgr2	Diploma, MoEmp3	Certified Public Accountant, MoEmp4

Table 3: Demographics of the SMEs and study participants

*Participant codes: 1=Accounting package; 2=Fax machine; 3=Electronic tax register; 4=Printer, photocopier and email; 5=Inventory management system; 6=Point of sale; 7=Accounting solution; 8=Application development solution; 9=Inventory management solution

Table 3 provides the code name of the study participants. The table also indicates location, the industry the SME belongs to, the IT solution adopted, the number of years it has been in operation, the number of employees (on both permanent and contract terms), as well as the academic background of the study participants. This demographic information was instrumental in helping the researcher to discern and distil the data during the analysis of the findings. It also enabled a more contextualized analysis which ensured that the conclusions made were valid and unbiased.

The AC of Kenyan SMEs

Based on the commonalities that became evident from the findings on the cases, the SMEs were grouped into two distinct categories: one that exhibited strong AC (those that effectively identified relevant external information, acquired it, and assimilated, transformed, and consequently exploited it for commercial ends) and another that exhibited weak AC (those that rarely or never identified relevant external information, never or seldom acquired it, neither assimilated, transformed, nor exploited it for commercial ends; and if they did so, it was not part of a deliberate effort). Through the use of NVivo two nodes, named Strong AC and Weak AC, were used as repositories for highlights of extracts that indicated strong AC and weak AC respectively. The extracts were taken from questionnaires and interview transcripts. From these, a group query was used to find those SMEs that were associated with either the Strong AC node or the Weak AC node. The findings indicated three SMEs (EdSME01, KiSME02, and NaSME02) as being associated with the Strong AC node. Consequently, five SMEs (EdSME02, KiSME01, NaSME01, MoSME01, and MoSME02) were associated with the Weak AC node. This understanding of varying levels of AC within different firms is supported by the empirical findings of other researchers such as Lane et al. (2006), Cohen and Levinthal (1990), Volberda, Foss and Lyles (2010), and Roberts et al. (2012), among others, who have established in their findings that such variations do indeed exist.

Question no.	Summary of findings from SMEs with Strong AC	Summary of Findings from SMEs with Weak AC
3. How do issues raised in questions 1 (Interaction) and 2 (Trust, Respect, Friendship and Reciprocity) help in improving the performance of your business?	The SMEs had ability to obtain and share valuable information, connect with potential partners or players in the market by exploiting the element of acquisition.	This group of SMEs had made very little effort to acquire external knowledge.
8. How do issues raised in questions 4 (Common Language), 5 (Complementary), 6 (Similarity) and 7 (Compatibility1 and Compatability2) help in improving the performance of your business?	These elements enabled the SMEs determine the relevancy of information shared between them. The factors further played a pivotal role in facilitating collaboration among the SMEs.	There was inability to interpret and understand external information.
15. How do issues raised in questions 9 (Communication), 10 (Meetings), 11 (Documents), 12 (Transmission), 13 (Time) and 14 (Flows) help in improving the performance of your business?	The knowledge transformation period was short. In other words, it took these SMEs less time to internalize the external knowledge.	These SMEs considered knowledge transformation difficult. No regular meetings were held nor were documents used to share relevant information within the SMEs.
18. How do issues raised in questions 16 (Responsibility) and 17 (Application) help in improving the performance of your business?	The SMEs were able to make more informed decisions, better strategically position themselves and were more responsive to market dynamics	Again as a result of minimal sharing of information and also the lack of acquisition of external information, these SMEs rarely took advantage of the external information resource

Table 4: Summary of questionnaire findings

Table 4 provides a summary of the questionnaire findings with regard to how the two groups of SMEs related their AC to the performance of their business.

Having established the role of AC in the performance of SMEs in Kenya, the next subsection presents the findings on the SMEs' IT adoption strategies in an effort to establish the existence of a correlation between an SME's AC and its IT adoption strategy.

SMEs' IT adoption strategies

It was possible to establish that two SMEs, **EdSME01** and **NaSME02**, had a fairly well-formulated decision stage for their IT adoption. The two SMEs conducted an in-house analysis to help them establish their IT needs. For example, **EdEmp2** stated, "*We looked at our processes to determine if they could be supported by technology.*" However, this was not the case for SME **KiSME02**, whose manager stated that they had just acquired their software (point of sale application and an accounting solution) from a business friend and decided to use it. This is in sharp contrast to the category of SMEs that possessed weak AC. It was discernible that they did not articulate their SME's need for the IT solution. This is captured by the remark by **KiMgr1** who stated that, "*Everybody uses it,*" a view shared by **MoEmp3**, "*Other business[es] also use it.*"

All three SMEs with strong AC indicated that they were aware of other available IT solutions they could use. These findings could easily be tied to the fact that there were exchanges of information between these SMEs and other entities, making them more knowledgeable on the kind of relevant technologies available to them. In the category of SMEs with weak AC, only two out of the five indicated that they were aware of other available IT solutions they could use before they acquired their technology.

While the SMEs with strong AC appear to adopt IT for strategic reasons, most of the SMEs with weak AC adopted the technology merely to automate the existing process and because it appeared fashionable; for example, **KiEmp4** observed that they used technology "*To be like other businesses who use computers.*"

Regarding the level of preparedness to adopt IT, the three SMEs that exhibited strong AC had some level of preparedness that was done before the acquisition of the IT solution. **NaMgr2,** for example states, "*We did initial training, bought UPS [uninterruptable power supply], and air conditioning.*" Further, SMEs **EdSME01** and **KiSME02** as part of preparedness hired additional workers who were well versed in the new system. As for the category of SME with weak AC, with exception of SME **NaSME01**, which hired additional staff, the remaining four did not make any effort to ready themselves for the new technology.

With regard to how the SMEs implemented the IT solution, all three SMEs with strong AC conducted some form of training. The SMEs indicated that this training was done by qualified consultants. This would be the point of departure as far as SMEs with weak AC were concerned, as they all, with exception of one, stated that they had relied on training from employees within the SMEs who had some technological know-how.

As far as the IT solution was deployed/set up, only SME **EdSME01** that had sought advice from a professional consultant was more tactical in its setup approach, as it carried out a pilot by trying out the system in one unit before rolling it out to the entire organization. In all of the remaining seven SMEs, the deployment approach was more drastic with no consideration being given to the possible ramifications. The technology was set up at the same time in all the units in which it was to be used. As **NaEmp3** states, "*All sections started using it [the new technology] the same day.*"

From the responses of SMEs **EdSME01**, **KiSME02** and **NaSME02**, it was clear that they all did some follow-ups on the effectiveness of the adopted IT solution. This was done by checking on the improvements of the processes that were automated. As **EdEmp2** notes, "*We looked to check if the loan process was still [as] long as before*". This and the improvements in the SMEs profits were the only two ways in which these SMEs evaluated the performance of their adopted IT solution. With regard to the SMEs with weak AC, only one SME, **NaSME01**, did its evaluation by looking at whether there were changes in its processes. The other four SMEs did not carry out any form of evaluation. As would appear from their responses, they simply had no idea how to do this or its relevance. As **EdEmp4** puts it, "*We don't do the evaluation, we don't know how.*"

In responding to the question on whether they considered their IT adoption a success, all three of the SMEs with strong AC were satisfied and considered their IT adoption to be successful. The statement by **EdEmp1** captures these sentiments, "*Yes, the technology is working well, our processes have improved.*" The same could not be said of the rest of the SMEs with weak AC, as most of them observed that there were no improvements in the manner in which the business is run. As **EdEmp4** observes, "*I don't see anything different.*"

DISCUSSION

These findings add depth to the arguments posited by a number of researchers, such as Roberts et al. (2012), Harrington and Guimaraes (2005) and Volberda et al. (2010), that AC plays a pivotal role in organizational performance. Whereas these studies focused on big firms, the consistency of the results with those of this SME study implies that AC is not the preserve of large firms. Indeed, as revealed by this study, SMEs stand to benefit equally from AC.

This study found that, in general, all the SMEs could in one way or another do with some improvements to their IT adoption strategies. The findings reveal that the SMEs that exhibited strong AC had employed the use of superior IT adoption strategies to those employed by their counterparts with weak AC. Those with weak AC appeared more heavily wanting in their choice of IT adoption strategies. In fact, from the study findings it is impossible to make a definitive conclusion that SMEs with weak AC viewed IT as an opportunity.

In line with these arguments, we can posit that low levels of AC are an inhibitor to effective IT adoption strategy. In their study of 250 firms, Haro-Dominguez et al. (2007) came to a similar conclusion that the degree of AC within firms positively influences their IT adoption. The study findings also echo those of other researchers such as Ashrafi and Murtaza (2008), Mpofu and Watkins-Mathys (2011), and Marthan and Tan (2010) among others, who have also reached a similar conclusion that a significant number of IT adoption processes within SMEs are flawed and that many SMEs struggle with their IT adoption process. Whereas the need for IT in SMEs cannot be over emphasised, it is a widely accepted view that many are challenged in their IT adoption.

Table 5 provides a comparative summary of the IT adoption strategies of the two sets of SMEs.

IT adoption phase	SMEs with strong AC	SMEs with weak AC
Decision phase	• **In-house analysis conducted to establish their IT solution need.** • **The SMEs are aware of other alternative IT solutions.** • **Adopted technology for strategic reasons.**	• **No articulation of the SMEs' need for IT solution.** • **Have limited knowledge of other alternative IT solutions.** • **Adopted technology because it appeared fashionable.**
Implementation phase	• **Training conducted by qualified consultants.** • **Carried out drastically in all cases but one without possible consideration of the ramifications.**	• **Training by peers (employees) within the SME.** • **Carried out drastically in all cases without possible consideration on the ramifications.**
Evaluation phase	• **Conducted some form of evaluation after implementation.**	• **Majority did not do any form of evaluation after implementation.**

Table 5: Summary of the SMEs' IT adoption strategies

CONCLUSIONS

The aim of this study was to establish the role of AC in improving the performance of SMEs in Kenya. Further, an attempt was made to establish whether there is a correlation between AC and the IT adoption strategies employed by SMEs in Kenya. The study provides a first insight into the levels of AC and the effectiveness of IT adoption strategies in SMEs in Kenya. Because the majority of the SMEs investigated had low levels of AC, it was possible to establish the role that AC played in improving the performance of SMEs in Kenya. From the study we have also discovered the existence of a cognitive path that can help us understand the connection between an SME's AC and its choice of IT adoption strategy. The study provided sufficient evidence for us to endorse the fact that those SMEs that possess strong AC have superior IT adoption strategies in comparison with their counterparts that had weak AC.

To take advantage of emerging opportunities, SMEs in Kenya need to develop and improve their AC and consequently use this to improve their IT adoption strategies. The findings of this study imply that AC has the potential to improve the IT adoption strategies of SMEs in Kenya as well as those in other developing countries that operate under similar conditions.

Many SMEs in Kenya rarely engage with other entities. More often they work in isolation oblivious to the dynamics in their surrounding environments. Accordingly, cooperation between SMEs and other entities such as research centres, universities, suppliers, customers, and even competitors should be encouraged as this will help to build their AC. Lack of clear structures creating avenues of engagement between the SMEs and the external environments and the absence of deliberate efforts to exploit external information make the SMEs blind to the many benefits that could accrue from absorbing

external information. The government could also support the SMEs by embarking on initiatives to improve accessibility of relevant information for the SMEs as well as offering IT related trainings.

The researchers therefore submit that, in order to improve the survival of SMEs in Kenya, as well as those in other developing countries, it is important that structures be put in place by these enterprises to improve their AC. If well exploited, AC has the potential to help SMEs improve their IT adoption strategies and hence overcome some of the perennial organizational performance challenges that they face. For Kenyan SMEs, this study has helped shed light on the state of their IT adoption processes and has revealed the potential of AC to improve both their performance and their IT adoption strategies. Furthermore, the Kenyan government can use this study to understand the needs and challenges its SMEs face in their IT adoption and to develop strategies and policies to support them in this endeavour.

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APPENDIX

Jimenez-Barrionuevo et al. AC Measurement Scale

Acquisition (Potential)

1. (INTERACTION) There is close personal interaction between the two organizations.
2. (TRUST) The relation between the two organizations is characterized by mutual trust.
3. (RESPECT) The relation between the two organizations is characterized by mutual respect.
4. (FRIENDSHIP) The relationship with this organization is one of personal friendship.
5. (RECIPROCITY) The relationship between the two organizations is characterized by a high level of reciprocity.

Assimilation (Potential)

1. (COMMONLANGUAGE) The members of the two organizations share their own common language.
2. (COMPLEMENTARITY) There is high complementarity between the resources and capabilities of the two organizations.
3. (SIMILARITY) The main capabilities of the two organizations are very similar/overlap.
4. (COMPATIBILITY1) The organizational cultures of the two organizations are compatible.
5. (COMPATIBILITY2) The operating and management styles of the two organizations are compatible.

Transformation (Realized)

1. (COMMUNICATION) There are many informal conversations in the organization that involve commercial activity.
2. (MEETINGS) Interdepartmental meetings are organized to discuss the development and tendencies of the organization.
3. (DOCUMENTS) The different units publish informative documents periodically (reports, bulletins, etc.).
4. (TRANSMISSION) The important data are transmitted regularly to all units.
5. (TIME) When something important occurs, all units are informed within a short time.
6. (FLOWS) The organization has the capabilities or abilities necessary to ensure that knowledge flows within the organization and is shared between the different units.

Exploitation (Realized)

1. (RESPONSIBILITY) There is a clear division of functions and responsibilities regarding use of information and knowledge obtained from outside.
2. (APPLICATION) There are capabilities and abilities needed to exploit the information and knowledge obtained from the outside.