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DIGITAL TECHNOLOGY ENTREPRENEURSHIP AND PERFORMANCE OF DEPOSIT TAKING SACCOS IN NAIROBI CITY COUNTY, KENYA

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ABSTRACT

This research study sought to assess the effect of digital technology entrepreneurship on performance of deposit taking SACCOs in Nairobi City County, Kenya. The study was guided by the following specific objectives to assess digital knowledge management on performance of Deposit Taking SACCOs in Nairobi City County, Kenya and to establish the effect of e-Procurement on performance of Deposit Taking SACCOs in Nairobi City County, Kenya. The unit of analysis for this study was DT-SACCOs in Nairobi County. The unit of observation of this study was Finance, Human Resource, ICT and Property manager's top managers in the selected 43 deposit-taking SACCOs in Nairobi County, Kenya because they are in charge of daily entrepreneurial activities in the companies. The target population was therefore 215 respondents. Yamane formula was adopted to calculate the study sample size of 139 respondents. This study used primary data collected using a semi- structured questionnaire. Statistical Package for Social Sciences (SPSS) was used to analyze the data. Descriptive and inferential statistics was computed and findings presented in tables and figures, The study concludes that digital knowledge management has a positive and significant effect on performance of Deposit Taking SACCOs in Nairobi City County, Kenya. The study also concludes that e-procurement has a positive and significant effect on performance of Deposit Taking SACCOs in Nairobi City County, Kenya. This study recommends that Deposit Taking SACCOs in Nairobi City County, Kenya should prioritize embracing and investing in technological solutions that are specifically tailored to enhance their operations. This could include adopting robust banking software, mobile banking applications, online platforms, and other digital tools that can improve efficiency, streamline processes, and enhance customer experiences.

Key Words: Digital technology entrepreneurship, Digital knowledge management, E-Procurement, Performance, Deposit Taking SACCOs

Background of the study

The economic performance and innovation success of countries has increasingly depended on digital technology developments (Konig, Ungerer, Baltes, & Terzidis, 2019). Digitalization is broadly associated with the changes that relate to big data analytics, the adoption of digital technologies, and an increase in their utilization (Parviainen, Kääriäinen, Tihinen, & Teppola, 2017). The emergence of digital platforms and associated ecosystems has led to a new and potentially important context for entrepreneurship (Nambisan, 2017) that is digital entrepreneurship. According to Davidson and Vaast (2019), digital technology entrepreneurship is generally defined as the pursuit of business or economic opportunities based on the use of digital technologies. There is a growing interest in digital technology entrepreneurship since it is considered to be the ultimate and contemporary trend in entrepreneurship development due to the rapid development of digital technologies and the emerging digital economy (Hafezieh, Akhavan, & Eshraghian, 2017).

Fueled by FinTech investments, financial institution have become a hotbed of digital innovation (Lundvall, 2019). In response, Sacco's must embrace change and rethink business models to move towards a compliant, secure and digitally-enabled operating model to enhance customer, employee, partner and other stakeholder experiences (Steiner, 2020). New digital tools and capabilities help streamline new product development, digital experiences and the transformation of key functions from; marketing, distribution and claims to finance and accounting. According to Butzlaff (2020), those who fully embrace digital transformation can achieve significant competitive advantages by meeting tomorrow's customer needs driving operational agility to respond to changing marketplace expectations. To succeed, Saccos must understand what's possible and take decisive action to deliver value now and ignite long-term growth (Erdland, 2017).

Digital technologies may however not only result in business opportunities; they may also, simultaneously, be disruptive and cause new vulnerability spaces (Dong, 2019; Rachinger, Rauter, Müller, Vorraber, & Schirgi, 2019). This is particularly true since, within the reframing of business models, digital technologies have an impact on the various levels of the innovation system, reshaping industry competition and networking patterns within this system (Ardolino, Rapaccini, Saccani, Gaiardelli, Crespi, & Ruggeri, 2018). Furthermore, the integration of digitalization in business processes implicates not only internal changes related to new organizational management strategies and entrepreneurial processes but also external system conditions e.g., institutional influence, new market tendencies, changes in competitive advantages as well as social attitudes e.g., digital trust, technology adoption also have a significant effect (Dong, 2019).

Environmental dynamism refers to the perceived instability and continuing changes in the firm's market, where organizations often respond to challenging conditions found in dynamic or high technological environments by adopting an entrepreneurial and investment strategies (Pearce, 2018). Due to high levels of uncertainty, decision makers working in dynamic environments tend to suffer from greater information processing burdens. As a result, these individuals who make key investment decisions for instance are likely to experience high levels of stress and anxiety. This effect can be partially mitigated by distributing decision making responsibilities across top management teams (Pearce, 2018).

In the banking industry, environmental dynamism encompasses changes in banking innovations, product/services changes, variations in customer's buying habits, and changes in competitor's activity due to economic slump. Thus, the more dynamic the environment the greater the need for innovativeness and the more likely it is that business firms will be proactive and engaging in mitigating risks (Covin & Slevin, 2016). Therefore, in this study, environmental dynamism in the banking industry which includes deposit taking SACCOs is necessitated by economic recession

caused by COVID-19 pandemic. In this study, it is conceptualized in terms of changes in customer preferences or credit demand, competitor tactics on products/services innovations, volatile marketing orientation and changes in lending regulatory frameworks are perceived to impact on performance of deposit taking SACCOS in Kenya. This study therefore seeks to assess the digital technology entrepreneurship and performance of deposit taking SACCOs in Kenya.

Statement of the Problem

SACCOs in Kenya are characterized by poor performance, leading to collapse, closure and restriction (Mathuva, Muthuma & Kiweu, 2016). In the year 2017, two DT-SACCOs had their licenses revoked and 12 DT-SACCOs were operating on conditionally restricted half-year licenses for failing to meet their financial obligations. In addition, even though total income in SACCOS has been increasing for the last five year, non-performing loans have been on the increase, having increased from 5.23% in 2018 to 6.14% in the year 2019. In addition, the total loans grew by 11.3% between 2018 and 2019 to reach Kshs 331.21 Billion. Total membership in SACCOs decreased from 3,632,597 members in 2018 to 3,599,200 members in 2017 (Sacco Societies Regulatory Authority, 2019). In addition, there was a remarkable decline in the investments in property, equipment and other assets portfolio from Kshs 36.4 Billion in 2018 to Kshs 31.1 Billion in 2019, which represented 9.25% and 7.04% of the total assets portfolio respectively. Also, 72.46% of the total assets in the year 2019 composed of net loans and advances. In regard to adoption of technology, a total of 114 DT-SACCOs and 120 DT-SACCOs were as at December 2017 connected to an ATM platform and mobile financial application respectively. In addition, DT-SACCOs have been active in the provision of Agency Banking services on behalf of commercial banks with some 107 DT-SACCOs providing agency banking service on behalf of one or two commercial banking institutions (Sacco Societies Regulatory Authority, 2017). However, despite having various strategic resources SACCOs in Kenya are still experiencing poor performance in terms of returns on investments, customer satisfaction and efficiency in service delivery. According to Schmidt, Drews and Schirmer (2017), deposit taking SACCOs may use digital technology entrepreneurship strategies to deliver greater value to their customers and gain competitive advantage. This is achieved through actively attracting new customers and engaging the existing customers by creating awareness and providing innovative products ultimately improving both profitability and growth (Kachroo & Majumdar, 2017).

Locally various researchers have reviewed the importance of technology on company performance. Letting (2016) studied the relationship between technology and competitive advantage the case of vegetables and animal oils and fats manufacturers in Kenya; Waruingi, (2017) conducted a survey of the extent of information communication technology strategy to business strategy for companies quoted at the NSE; Maina (2017) researched on the relationship between technology strategy and competitive performance in the telephony industry in Kenya; Ombati (2015) did a survey on the relationship between technology & service quality in the banking industry in Kenya while Maringa (2017) established the relationship between investment in information communication technology and corporate performance at Kenya Revenue Authority. Literature reviewed from previous studies clearly indicates that researchers have not exhaustively captured the relationship that exists between technologies from the entrepreneurial perspective on performance of Deposit Taking SACCOs in Kenya. It is therefore against this background that this research study sought to assess digital technology entrepreneurship and performance of deposit taking SACCOs in Kenya.

Objectives of the Study

The main objective of this study is to investigate digital technology entrepreneurship and performance of Deposit Taking SACCOs in Kenya

The study was guided by the following specific objectives;

1. To assess digital knowledge management and performance of Deposit Taking SACCOs in Nairobi City County, Kenya
2. To establish e-Procurement and performance of Deposit Taking SACCOs in Nairobi City County, Kenya

LITERATURE REVIEW

Theoretical Review

Resource Based View Theory

The resource-based view (RBV) was advanced by Teece et al., (1997). It emphasizes that a firm utilizes its resources and capabilities to create a competitive advantage that ultimately results in superior value creation and achieve organizational effectiveness. In order to achieve organizational effectiveness, the firm must allocate its resources and capabilities wisely against competing needs as a result of changing business environment. RBV depicts companies as a collection of resources and capabilities required for product or market competition. Resources are the physical capital, human capital, and organizational capital owned or controlled by a firm that can be used to conceive of and implement strategies (Barney, 1991).

According to Barney, resources and capabilities need to meet a four point criteria to provide superior performance. First, they must be valuable, enabling a firm to not only exploit its environmental opportunities but also neutralise its threats. Secondly they must be rare among its current or potential competitors. Thirdly they must be costly to imitate, and lastly they must be without close strategic substitutes. Capabilities reflect company's ability to combine resources that the organization can muster in ways that promote superior performance in a dynamic business environment (Teece et al., 1997). Makadok (2001) identifies two key distinctions between resources and capabilities. First, capabilities are a special type of organizationally embedded, non-transferable, firm specific resource. Second the purpose of capabilities is to improve the productivity of the other resources possessed by the firm.

Based on the theory, could it be concluded that information and knowledge resources and capabilities are valuable, rare, costly to imitate and without close strategic substitutes? If the assertion holds, does information and knowledge therefore enable a firm to not only exploit its environmental opportunities but also neutralise its threats? Does it therefore mean that knowledge acquisition, knowledge conversion and knowledge application, can be used to manage and increase digitalization, to enhance Firm Performance and to sustain competitive advantages?

Building on the RBV, the knowledge-based view of the firm considers knowledge as the most strategically significant resource of the firm (Grant, 2008). This view considers a firm to be a distributed knowledge system composed of knowledge-holding employees, and this view holds that the firm's role is to coordinate the work of those employees so that they can create knowledge and value for the firm (Spender, 2006). This therefore imply that Saccos' absorptive capacity can be enhanced through KM processes that allow the firm to acquire, convert and apply existing and new knowledge by adding value using technology while improving their performance (Winter 2003). This study will use this theory to assess digital knowledge management and performance of Deposit Taking SACCOs in Kenya.

Value Chain Theory

The theory of value chain was founded by Michael Porter in 1985 (Christopher, 1992). To better understand the activities through which a firm develops a competitive advantage and creates shareholder value, it is useful to separate the business system into a series of value-generating

activities referred to as the value chain. In his 1985 book Competitive Advantage, Michael Porter introduced a generic value chain model that comprises a sequence of activities found to be common to a wide range of firms (Christopher, 1992).

A value chain disaggregates a firm into its strategically relevant activities in order to understand the behavior of costs and the existing and potential source of differentiation. Porter's value chain consists of a set of activities that are performed to design, produce and market, deliver and support its product. Porter distinguishes between primary activities covering inbound logistics, operations, outbound logistics, marketing and sales, service in the core value chain creating directly value and support activities including procurement, technology development, human resource management and firm infrastructure. Porter formulates the general strategies for the value chain of cost leadership and differentiation to reach competitive advantage (Porter, 1985). These cross-value chain strategies established a principle that competitive advantage can be reached only by managing the entire value chain as a whole including all involved functions. Porter's value chain is one basis for the development of the supply chain. The term supply chain was created by consultant Keith Oliver in 1982. Compared to the company-internal focus of Porter's value chain, the supply chain extends the scope towards intra-company material and information flows from raw materials to the end consumer. A supply chain is a network of organizations that are involved through upstream and downstream linkages in different processes and activities that product value in the form of products and services in the hand of the ultimate consumer (Christopher, 1992). Because technology is employed to some degree in every value creating activity, changes in technology can impact competitive advantage by incrementally changing the activities themselves or by making possible new configurations of the value chain (Simichi-Levi, 2000).

In an increasingly complex world of globalized trade with extended lead times and greater risk, the integration in the supply chain will require supporting information systems and technology. The growth of the internet and technologies which enable real-time information sharing such as inter-connected ERP systems, web-based EDI, electronic portals and online order processing systems, can potentially support the building of closer links with customers, suppliers and third-party vendors such as logistics service providers. In practice however, the progress towards such supply chain integration between firms has often been stalled by factors such as rival cultures, information technology deficiencies, lack of process alignment and other organizational legacies (Akkermans et al., 1999). Hence whilst this new technology offers much promise, examples of its success in transforming supply chain practice are still relatively few in number.

The virtual vertical integration created by IOIS can then be used to reduce supply chain uncertainty (Kumar, 1996). Such electronic cooperation is called information partnership and focuses its attention on creating strategic value through increasing operational efficiencies (Lee, 1992). The time value and volume of information that is shared between trading partners is represented by various degrees. For example, at the highest level of an information partnership, the 101S is fully disclosed to network participants (Lee, 1992).

For this study the Value chain theory implies that those firms that adopt E-procurement are able to gain from the growth of the internet and technologies which enable real-time information sharing such as inter-connected ERP systems, web-based EDI, electronic portals between buyers and suppliers and online order processing systems which supports the building of closer links with customers, suppliers and third-party vendors such as logistics service providers. It will be used in this study to explain e-procurement and performance of Deposit Taking SACCOs in Kenya.

Conceptual Framework

Mugenda and Mugenda (2008) define a conceptual framework as a hypothesized model identifying the model under study and the relationship between the dependent and independent

variables. The independent variables of the study are digital knowledge management and e-procurement while the dependent variable is performance of Deposit Taking SACCOs in Kenya. Figure 1 below presents the conceptual framework that guides this study.

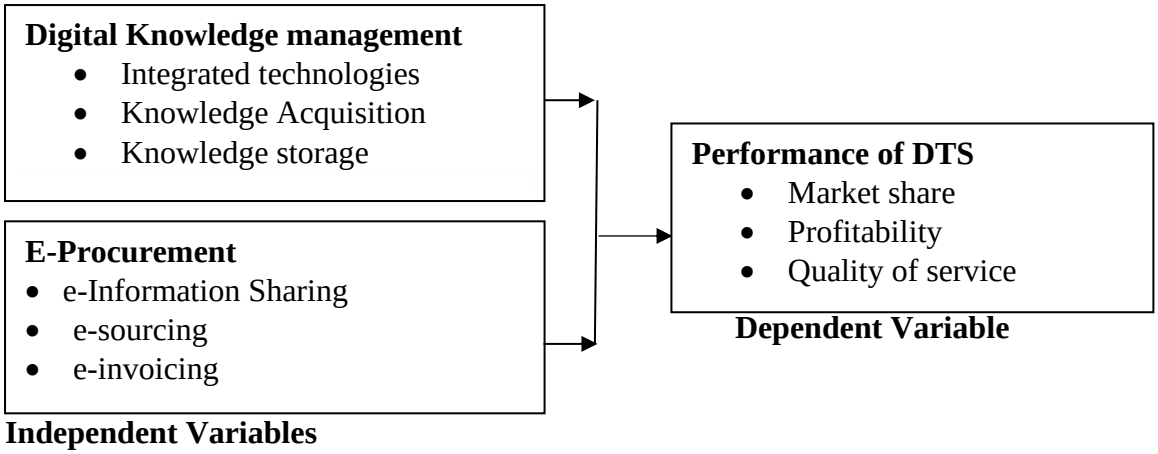

Figure 1: Conceptual Framework

Digital Knowledge Management

Knowledge management (KM) provides adaption and reliable methods (Al-Ahbabi *et al*., 2017; Vrontis, Thrassou, Santoro, & Papa, 2017) and the secret of survival and competencies required for organizations in dealing with consistent environmental changes in the business world (Singh & Kant, 2018). Also, through rational capabilities and the experiences of the individuals of an organization, it increases the capacity to retrieve and promote organizational capitals and innovation performance. Gamble and Blackwell (2018) emphasize the organizational management of KM toward continuous knowledge-based innovation, i.e., the application of technology, with an emphasis on workgroup and knowledge dissemination.

Chiu and Fogel (2018) argue that organizational and managerial practices can have a positive effect on the implementation of an innovative knowledge-driven system and the obtained results might lead to the outstanding results and meeting the interests of the organization. Since application of knowledge would lead to innovation (Kline, 2017) and performance improvement in an organization, then organizations always benefit from KM techniques for development and greater profitability (Atapattu & Jayakody, 2018). Therefore, simultaneously enhancing access to new experiences and capabilities and innovation level and competitive advantage could lead to enhanced value creation for the customer (Andreeva & Kianto, 2016).

The KM literature considers technology as a critical factor for companies in creating value and maintaining a competitive advantage in today's highly complex and dynamic environment (Castro et al., 2017). Innovative inventions are highly related to knowledge, expertise, and commitment of employees as key inputs in value creation process. Researchers emphasize the central role of digital KM, especially in creating an internal work environment that supports creativity and innovation (Atapattu & Jayakody, 2018). This paper tries to investigate the impact of digital knowledge management practices on performance of DTSs.

E-Procurement

E-procurement is the use of Information Communication Technology (ICT) in the procurement of goods and services by individuals and organizations. E-Procurement through its application of rapid data processing, electronic technology provides a means to improve efficiency within specific areas of the supply chain and provides solutions to some of the challenges encountered

(Corpsi, 2016). It plays a central role to the performance of the procurement function and that of the organization.

E-procurement systems allow more efficient and integration of supply chain with other departments and provides better organization and tracking of transaction records for easier acquisition and monitoring of procurement. E-procurement process has four broad phases of sourcing, tendering, payment and maintenance of records. The benefits of e-Procurement have been verified by many leading companies worldwide, and e-Procurement is a significant tactic in most companies' e-Business strategies (Deloitte Consulting, 2017). The consensus is that e-Procurement benefits organizations with respect to procurement cost and process efficiency associated with procurement activities (Chaudhury & Hartzel, 2018). This is due to web-based e-Procurement solutions can support four major B2B tasks in organizations: search, processing, monitoring and control, and coordination (Subramaniam & Shaw, 2016). E-business has the potential to generate huge new wealth and to transform the way business is conducted in unprecedented ways (Amit & Zott, 2019). The use of new technology in procurement seems to promise substantial benefits (Neef, 2019).

Performance of Deposit Taking Saccos

Performance refers to the level of achievement of company's objectives (Choi, Poon & Davis, 2018). According to Venkatraman and Ramanujan (2016), organisation performance is a complex and multi-dimensional aspect in strategic management. Armstrong (2016) said that performance is the results of work (certain tasks) considering that they are related with organization's strategic goals. These strategic goals include, growth and customer focused goals such as market share, company growth rates, profitability and operational goals such quality of products, efficiency and other organisational goals (Short & Palmer, 2017).

Organization performance is a strategic planning and management systems used to measure organisation performance in four perspectives; organisation internal processes, customers, growth and financial aspect (Luyima, 2015). Perceived organizational performance measures the impact of e-business strategy adoption on an organisation's performance (Zviran & Erlich, 2017). Companies that invest in information technology expect better performance in terms of decrease in operating costs; enhanced quality of services and products, improved customer satisfaction, and higher financial performance.

The motive of any financial service provide is to improve performance (Abbasi & Weigand, 2017) through the following areas; increasing market share, extending customers reach, creating new employment opportunities, enhancing operational efficiency, introducing new innovative products and increase in profits. In the financial sector, Atieno (2018) reported that rise in profit, sales volume, quality of service and productivity is a critical determinant of performance of financial sector companies. This study utilized non-financial indicators to determine digital technology entrepreneurship and performance of Deposit Taking SACCOs in Kenya.

Empirical Literature Review

Digital Knowledge Management and Performance

Daud and Yusoff (2019) studied knowledge management and firm performance in SMEs. The study examined knowledge management, social capital and firm performance through the use of a questionnaire directed to small- and medium-sized enterprises, all of them situated within the Multimedia Super Corridor in the Klang Valley of Malaysia. The results showed that knowledge management processes influence social capital positively, social capital enhances firm performance and social capital is a mediator between knowledge management processes and firm performance.

Sofiyabadi and Valmohammadi (2020) researched on impact of knowledge management practices on innovation performance. The main purpose of this article was to study the impact of knowledge management practices (KMPs) on innovation performance of an Iranian leading private bank known as Bank Pasargad. To assess the impact of independent factor (KMP) on the dependent factor (innovation performance), a questionnaire containing 52 questions is designed and distributed among 237 experts and managers of the Iranian Bank Pasargad headquarters. Exploratory and confirmatory factor analyses are used to analyze the research data. The proposed conceptual model of the research is studied using the structural equation modeling technique. Results obtained from testing the main hypothesis shows that KMPs positively and significantly affect innovation performance. Also, scrutiny of the sub hypotheses revealed that KMP subconstructs, namely, top management measures, strategic knowledge management, knowledge-driven employment, knowledge-driven training, knowledge-driven performance evaluation based on IT, and knowledge sharing using IT, positively and significantly affect innovation performance in the surveyed bank.

Solomon (2018) studied the use of knowledge management to gain competitive advantage in the textile and apparel value chain. The study was a comparison of small and large firms. The results show that large firms differ significantly from small firms in how they manage knowledge both internally and externally. Larger firms have significantly more developed organizational memory systems. However, small firms are just as good as their larger counterparts at dispersing organizational memory or sharing information with employees across the firm. Survey results indicate that smaller firms may not require formal knowledge structures to preserve knowledge.

Tubigi and Alshawi (2016) investigated the impact of knowledge management processes on organizational performance. The study found a positive relationship between knowledge acquisition and organizational performance. Agbim, Zever and Triarewo (2018) assessed the effect of knowledge acquisition on competitive advantage. It was found that knowledge acquisition is significantly related to competitive advantage. Pai and Chang (2017) studied the effects of knowledge acquisition and absorption on organizational innovation performance. The results showed the positive effects of knowledge absorptive capabilities on dynamic capability and then on organizational innovation performance. In addition, the effects varied for companies with high and low innovation investment.

Omerzel (2019) studied the impact of knowledge management on SME growth and profitability. The purpose of the study was to clarify the importance of different determinants of knowledge management with the aim to investigate its influence for the firm performance. These determinants are knowledge storage, knowledge acquisition and knowledge transfer. The findings indicate that all dimensions are interrelated and important for the firm performance

E-Procurement and Performance

Ilhan and Rahim, (2020) researched on understanding digital transformation of procurement through E-Procurement Systems Implementation: business partner relationship perspective. E-procurement systems require a rigorous implementation process for attracting their acceptance within buying organisations and generating benefits. However, despite a rich body of literature on e-procurement systems, little is known on how buying organisations generally implement their e-procurement system. Even though an important role is played by the procurement function, limited studies have been reported to explain the details of the activities undertaken by buying organisations for implementing an e-procurement system, and in what ways those activities are influenced. To address these gaps, this chapter proposes an association between the type of business relationship a buying organisation intends to maintain with its suppliers when deciding to implement an e-procurement system, and the e-procurement implementation process it follows. The chapter further presents empirical evidence in support of one particular type of business

relationship by analysing the e-procurement system implementation experience of an Australian organisation.

Benn (2015) focused on strategic purchasing, supply management practices and buyer performance improvement in UK manufacturing organisations where strategic purchasing was found to have an indirect, significant effect on improving buyer performance, acting through supplier integration. Strategic purchasing also had a significant effect on the use of socialization mechanisms, but not on supplier responsiveness. Nutakor (2016) on challenges with the implementation of sustainable procurement practices in the mining industry in western region of Ghana found challenges such as ICT difficulties, innovation, remuneration and increased cost, regulation and governance, inadequate funding, consumer perception, among others were very critical challenges inhibiting sustainable procurement practices. The study made some key findings that competitive bidding was rather practiced as compared to sole sourcing and that also there was not enough awareness and knowledge in the area of Sustainable Procurement.

Mueni (2018) focused on the influence of strategic procurement practices on performance of parastatals in Kenya Airport Authority and established that 66.9% of the total variability in the performance of Kenya Airport Authority could be explained by strategic outsourcing, inventory management, reverse logistics, and knowledge management. However, inventory management did not contribute significantly to performance of parastatals in Kenya. Okong'o (2016) focused on the influence of strategic procurement on the performance of Kenya Power Company Limited and established strategic procurement had a positive impact on the performance of public enterprises; such as reduced costs, improvements in quality of goods and services in the organization.

Kiarie (2017) studied the influence of supplier relationship management practices on operational performance of large manufacturing organizations in Kenya. The study acknowledged the utilization of t test and descriptive research design whereas the populace comprised of 594 recorded fabricating firms in Kenya agreeing to the Kenya Affiliation of Producers. The study concluded that in fact SRM hones had a bearing on the operational 15 execution of expansive fabricating organizations. The by and large execution of organizations within the fabricating segment in Kenya was influenced by way in which providers are overseen by the different organizations. The supplier relationship hones among the fabricating businesses in Kenya had partially adopted recorded procedures/rule/guidelines within the way in which they associated with providers this has in turn influenced the way in which they oversee provider determination, assessment, division and advancement since the discoveries show that they did not have a clear way in which these hones where being taken care of in their firm. Also, a great relationship with the provider is able to spare on transactional costs such as those that may result from delayed deliveries, poor quality materials or spare parts and lack of flexibility.

Osir (2016) studied the role of procurement information systems appropriation on performance in state organizations in Kenya: a case of Kenya Utalii College. T test was conducted to decide the statistical significance between the independent factors and dependent variable. The study uncovered that state organizations have received e-tendering, e-award, e-ordering and e-invoicing to a few degree in arrange to improve their acquirement execution. The t test conducted uncovered that the particular acquirement data frameworks strategies embraced had a noteworthy impact on the acquirement execution of state organizations. Results appear that the usage of procurement information systems had enhanced performance later a long time, but state organizations in Kenya have still not however embraced and utilized acquirement data systems to its full potential.

RESEARCH METHODOLOGY

A research design is the plan for selecting the sources and types of information to be used to answer the research question. It is a framework for specifying the relationships among the study's

variables as well as a blueprint that outlines each procedure from the hypothesis to the analysis of data (Kerlinger, 2017). Descriptive research design was adopted. The unit of analysis for this study was DT-SACCOs in Nairobi County. Nairobi was selected because it has the highest concentration of the registered head-offices of deposit taking SACCOs in Kenya (SASRA, 2020). The unit of observation of this study was Finance, Human Resource, ICT and Procurement managers in the selected 43 deposit-taking SACCOs in Nairobi County, Kenya. Finance, Human Resource, ICT and Procurement managers were used in this study as they are in charge of daily entrepreneurial activities in the companies. The target population was therefore 215 staff working in finance, Human resource, ICT and procurement managers in the 43 deposit-taking SACCOs in Nairobi County, Kenya. They study focused on 2 respondents in finance, 1 in Human resource, 1 in ICT and 1procurement department. There were 5 respondents in each deposit-taking SACCOs.

The Yamane formula was adopted to calculate the study sample size. Therefore, the study sample size was 139 respondents. The stratified random sampling method was adopted to select the study sample size. Stratified random sampling is a method of sampling that involves the division of a population into smaller sub-groups known as strata. In stratified random sampling or stratification, the strata are formed based on members' shared attributes or characteristics such as income or educational attainment (Creswell, 2017). The questionnaire was the selected instrument or tool for data collection for the study.

A pilot study was conducted to test the instrument's reliability, validity, and completeness of responses, and analyse the various measures within the instrument. In the pilot study 13 participants were invited to participate in filling the questionnaires. This was 10% of the study sample size. The selected respondents were excluded from the final study. The pilot group was selected from DT SACCOS, in the neighboring Kiambu County. Qualitative and quantitative data was collected. Descriptive statistics was used to analyze qualitative data and presentation done in tables and figures. SPSS version 25 was used for data analysis. Regression method of analysis was used as the main statistical method. The regression model was present the dependent variable (Performance of DTS) and independent variable, digital knowledge management and E-procurement

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

From the 139 questionnaires 132 were completely filled and returned hence a response rate of 94.9%. The response rate was considered as suitable for making inferences from the data collected. As indicated by Metsamuuronen (2017), a response rate that is above fifty percent is considered adequate for data analysis and reporting while a response rate that is above 70% is classified as excellent. Hence, the response rate of this study was within the acceptable limits for drawing conclusions and making recommendations.

Descriptive Statistics Analysis

Digital Knowledge Management and Performance of Deposit Taking SACCOs

The second specific objective of the study was to assess digital knowledge management and performance of Deposit Taking SACCOs in Nairobi City County, Kenya. The respondents were requested to indicate their level of agreement on digital knowledge management and performance of Deposit Taking SACCOs in Nairobi City County, Kenya. The results were as shown in Table 1.

From the results, the respondents agreed that their organization frequently sponsors conferences for employees to acquire knowledge. This is supported by a mean of 3.996 (std. dv = 0.865). In addition, as shown by a mean of 3.819 (std. dv = 0.945), the respondents agreed that DTSs stores information in digital form. Further, the respondents agreed that their organization has a IT

department that facilitates the use of technology in information sharing. This is shown by a mean of 3.798 (std. dv = 0.611).

The respondents also agreed that their organizations has subscribed to various technologies which employees use to acquire knowledge. This is shown by a mean of 3.731 (std. dv = 0.908). With a mean of 3.711 (std. dv = 0.776), the respondents agreed that their company has technology used for storing knowledge. The respondents agreed that in their organization, there are professionals tasked with knowledge storage. This is shown by a mean of 3.675 (std. dv = 0.897). With a mean of 3.613 (std. dv = 0.786), the respondents agreed that at ACA, all important documents are stored securely using digital platforms. The results concur with the findings of Daud and Yusoff (2019) who established that digital knowledge management processes influence social capital positively, social capital enhances firm performance. In addition, Sofiyabadi and Valmohammadi (2020) who established that knowledge management practices sub constructs, namely, top management measures, strategic knowledge management, knowledge-driven employment, knowledge-driven training, knowledge-driven performance evaluation based on IT, and knowledge sharing using IT, positively and significantly affect innovation performance

Table 1: Digital Knowledge Management and Performance of Deposit Taking SACCOs

	Mean	Std. Dev.
My organization frequently sponsors conferences for employees to acquire knowledge	3.996	0.865
DTSs stores information in digital form	3.819	0.945
My organization has a IT department that facilitates the use of technology in information sharing	3.798	0.611
My organizations has subscribed to various technologies which employees use to acquire knowledge	3.731	0.908
Our company has technology used for storing knowledge	3.711	0.776
In my organization, there are professionals tasked with knowledge storage	3.675	0.897
At ACA, all important documents are stored securely using digital platforms	3.613	0.786
Aggregate	**3.732**	**0.841**

E-Procurement and Performance of Deposit Taking SACCOs

The fourth specific objective of the study was to establish e-Procurement and performance of Deposit Taking SACCOs in Nairobi City County, Kenya. The respondents were requested to indicate their level of agreement on various statements relating to e-Procurement and performance of Deposit Taking SACCOs in Nairobi City County, Kenya. A 5 point Likert scale was used where 1 symbolized strongly disagree, 2 symbolized disagree, 3 symbolized neutral, 4 symbolized agree and 5 symbolized strongly agree. The results were as presented in Table 2.

From the results, the respondents agreed that automated process enables inventory manager to quickly see which products have reached this reorder level. This is supported by a mean of 4.168 (std. dv = 0.905). In addition, as shown by a mean of 3.959 (std. dv = 0.885), the respondents agreed that minimizes inventory carrying costs as electronic information enables better decisions on reorder quantities. Further, the respondents agreed that when supplier relationship management is well done, it will result in the development and connecting of the customers. This is shown by a mean of 3.920 (std. dv = 0.605). The respondents also agreed that data analytics provides proper evaluation of supplier's abilities before undertaking a decision to source products or services. This is shown by a mean of 3.915 (std. dv = 0.981).

The respondents agreed that through collaboration platforms, there has been improvement of internal customer satisfaction. This is supported by a mean of 3.911 (std. dv = 0.873). In addition, as shown by a mean of 3.897 (std. dv = 0.786), the respondents agreed that procurement information systems helps our company better understand a potential supplier's culture by improving transparency. Further, the respondents agreed that procurement information systems provide easy and real time information sharing to and from the market. This is shown by a mean of 3.789 (std. dv = 0.896). The study findings concur with those of Ilhan and Rahim, (2020) who established that strategic procurement had a positive impact on the performance of enterprises; such as reduced costs, improvements in quality of goods and services in the organization.

Table 2: E-Procurement and Performance of Deposit Taking SACCOs

	Mean	Std. Dev.
Automated process enables inventory manager to quickly see which products have reached this reorder level.	4.168	0.905
Minimizes inventory carrying costs as electronic information enables better decisions on reorder quantities.	3.959	0.885
When supplier relationship management is well done, it will result in the development and connecting of the customers	3.920	0.605
Data analytics provides proper evaluation of supplier's abilities before undertaking a decision to source products or services	3.915	0.981
Through collaboration platforms, there has been improvement of internal customer satisfaction	3.911	0.873
Procurement information systems helps our company better understand a potential supplier's culture by improving transparency	3.897	0.786
Procurement information systems provide easy and real time information sharing to and from the market.	3.789	0.896
Aggregate	**3.890**	**0.867**

Performance of Deposit Taking SACCOs in Kenya

The respondents were requested to indicate their level of agreement on various statements relating to performance of Deposit Taking SACCOs in Kenya. A 5 point Likert scale was used where 1 symbolized strongly disagree, 2 symbolized disagree, 3 symbolized neutral, 4 symbolized agree and 5 symbolized strongly agree. The results were as presented in Table 2.

From the results, the respondents agreed that their clientele base has increased significantly due to adoption of marketing technology. This is supported by a mean of 4.084 (std. dv = 0.997). In addition, as shown by a mean of 3.917 (std. dv = 0.831), the respondents agreed that they have improved profitability of existing clients due to adoption of technology driven strategies. Further, the respondents agreed that they have sold more than one product to our customers due to adoption of digital technology entrepreneurship strategies. This is shown by a mean of 3.858 (std. dv = 0.563). The respondents also agreed that more customers say they are satisfied with their services due to adoption of technology driven strategies. This is shown by a mean of 3.831 (std. dv = 0.851).

The respondents agreed that services and operation have been efficient. This is supported by a mean of 3.823 (std. dv = 0.932). In addition, as shown by a mean of 3.802 (std. dv = 0.843), the respondents agreed that they have cut operating costs due to adoption of digital technology entrepreneurship strategies. Further, the respondents agreed that they have retained majority of their customers due to adoption of digital technology entrepreneurship strategies. This is shown by a mean of 3.793 (std. dv = 0.745). The results are in line with the findings of Kiarie (2017) who

established that performance is measured through profitability, market share and the level of customer satisfaction

Table 3: Performance of Deposit Taking SACCOs in Kenya

	Mean	Std. Dev.
Our clientele base has increased significantly due to adoption of marketing technology	4.084	0.997
We have improved profitability of existing clients due to adoption of technology driven strategies	3.917	0.831
We have sold more than one product to our customers due to adoption of digital technology entrepreneurship strategies.	3.858	0.563
More customers say they are satisfied with our services due to adoption of technology driven strategies.	3.831	0.851
Services and operation have been efficient	3.823	0.932
We have cut operating costs due to adoption of digital technology entrepreneurship strategies	3.802	0.843
We have retained majority of our customers due to adoption of digital technology entrepreneurship strategies.	3.793	0.745
Aggregate	**3.806**	**0.818**

Inferential Statistics

Correlation Analysis

The present study used Pearson correlation analysis to determine the strength of association between independent variables digital knowledge management, and e-Procurement) and the dependent variable (performance of Deposit Taking SACCOs in Kenya) dependent variable. Pearson correlation coefficient range between zero and one, where by the strength of association increase with increase in the value of the correlation coefficients. The current study employed Taylor (2018) correlation coefficient ratings where by 0.80 to 1.00 depicts a very strong relationship, 0.60 to 0.79 depicts strong, 0.40 to 0.59 depicts moderate, 0.20 to 0.39 depicts weak.

Table 4: Correlation Coefficients

		Organization Performance	Digital Knowledge Management	E-Procurement
Organization Performance	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	132		
Digital Knowledge Management	Pearson Correlation	.856**	1	
	Sig. (2-tailed)	.001		
	N	132	132	
E-Procurement	Pearson Correlation	.859**	.189	1
	Sig. (2-tailed)	.000	.081	
	N	132	132	132

Moreover, the results revealed that there is a very strong relationship between digital knowledge management and performance of Deposit Taking SACCOs in Kenya (r = 0.856, p value =0.001). The relationship was significant since the p value 0.001 was less than 0.05 (significant level). The findings conform to the findings of Daud and Yusoff (2019) that there is a very strong relationship between digital knowledge management and organization performance.

The results also revealed that there was a very strong relationship between e-Procurement and performance of Deposit Taking SACCOs in Kenya (r = 0.859, p value =0.000). The relationship was significant since the p value 0.000 was less than 0.05 (significant level). The findings are in line with the results of Ilhan and Rahim, (2020) who revealed that there is a very strong relationship between e-Procurement and organization performance

Regression Analysis

Multivariate regression analysis was used to assess the relationship between independent variables digital knowledge management e-Procurement) and the dependent variable (performance of Deposit Taking SACCOs in Kenya)

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.925	.848	.849	.10120

a. Predictors: (Constant), digital knowledge management and e-Procurement

The model summary was used to explain the variation in the dependent variable that could be explained by the independent variables. The r-squared for the relationship between the independent variables and the dependent variable was 0.848. This implied that 84.8% of the variation in the dependent variable (performance of Deposit Taking SACCOs in Kenya) could be explained by independent variables (digital knowledge management and e-Procurement).

Table 4: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.027	4	3.018	58.04	.000[b]
	Residual	6.568	127	.052		
	Total	18.595	131			

a. Dependent Variable: performance of Deposit Taking SACCOs

b. Predictors: (Constant) digital knowledge management and e-Procurement

The ANOVA was used to determine whether the model was a good fit for the data. F calculated was 58.04 while the F critical was 2.433. The p value was 0.000. Since the F-calculated was greater than the F-critical and the p value 0.000 was less than 0.05, the model was considered as a good fit for the data. Therefore, the model can be used to predict the influence of digital knowledge management and e-Procurement on the performance of Deposit Taking SACCOs in Kenya.

Table 5: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	**(Constant)**	0.341	0.089		3.831	0.000
	Digital Knowledge Management	0.387	0.095	0.386	3.949	0.000
	E-Procurement	0.398	0.102	0.399	3.716	0.002

a Dependent Variable: Firm Performance

The regression model was as follows:

$Y = 0.341 + 0.369X_1 + 0.387X_2 + 0.381X_3 + 0.398X_4 + \varepsilon$

The results also revealed that digital knowledge management has significant effect on performance of Deposit Taking SACCOs in Kenya, $\beta 1=0.387$, p value= 0.000). The relationship was considered significant since the p value 0.000 was less than the significant level of 0.05. The findings conform

to the findings of Daud and Yusoff (2019) that there is a very strong relationship between digital knowledge management and organization performance

In addition, the results revealed that e-Procurement has significant effect on performance of Deposit Taking SACCOs in Kenya β1=0.398, p value= 0.002). The relationship was considered significant since the p value 0.002 was less than the significant level of 0.05. The findings are in line with the results of Ilhan and Rahim, (2020) who revealed that there is a very strong relationship between e-Procurement and organization performance

Conclusions

In addition, the study concludes that digital knowledge management has a positive and significant effect on performance of Deposit Taking SACCOs in Nairobi City County, Kenya. The study revealed that integrated technologies, knowledge Acquisition and knowledge storage influence performance of Deposit Taking SACCOs in Nairobi City County, Kenya

The study also concludes that e-procurement has a positive and significant effect on performance of Deposit Taking SACCOs in Nairobi City County, Kenya. The study revealed that e-Information Sharing, e-sourcing and e-invoicing influence performance of Deposit Taking SACCOs in Nairobi City County, Kenya.

Recommendations

Based on the study findings, this study recommends that;

In addition, the SACCOs should invest in a robust digital knowledge management system to effectively capture, organize, and share knowledge within the organization. This system should enable easy access to information, promote collaboration among staff members, and facilitate knowledge transfer across different departments.

In relation to e-procurement, SACCOs should implement an e-Procurement system that enables electronic procurement processes, including requisition, vendor selection, bidding, purchase orders, and invoice management. This will streamline and automate procurement activities, reducing paperwork, enhancing efficiency, and improving overall procurement performance.

Suggestions for Further Studies

This study focused on establishing the effect of digital technology entrepreneurship on performance of Deposit Taking SACCOs in Kenya. Having been limited to Deposit Taking SACCOs in Kenya, the findings of this study cannot be generalized to performance of other financial institutions. The study therefore suggests further studies on digital technology entrepreneurship and performance of other financial institutions in Kenya.

Further, the study found that the independent variables (digital knowledge management and e-Procurement) could only explain 84.8% of the performance of Deposit Taking SACCOs in Kenya. This study therefore suggests research on other factors affecting the performance of Deposit Taking SACCOs in Kenya.

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