From the Editor

I am delighted to extend warm greetings on behalf of the editorial board as we proudly introduce the inaugural edition of the Journal of Research in Humanities, Sciences and Management. It is with great pleasure that we present this publication to the esteemed academic, scholarly, professional, and research communities worldwide. This stands as a testament to our dedication to fostering intellectual discourse and advancement across a diverse spectrum of disciplines. With the unveiling of this journal, we aim to offer a reputable academic platform that provides unparalleled opportunities for researchers and academicians to share and disseminate their high-quality research papers.

The E-Journal has seven articles relating to various aspects: The article on Commercialization Models of University Research Output and Patenting Policy Practices in Kenya by Elijah Siringi. The study recommends that the Government of Kenya adopt a 2% GDP research funding policy as stipulated in the Science, Technology, and Innovation Act 2013 (ST&I Act, 2013).

The second article, *"Repositioning Research Amidst Turbulence: Embracing Evolution across Innovation, Science, Technology, Education, and Business Dimensions"* by Henry L.N. Onderi presents a notable shift in response to the rise of the virtual realm, adapting to the swiftly evolving new normal leading to adaptation which has sparked fresh innovations in sectors such as science, technology, education, business, and various other economic domains.

In their insightful study, Eunice Gacheri Thiankolu, Thomas Anyanje Senaji, and Wilson Muema delve into the realm of "*e-Strategy Implementation and Future Learning Outcomes"* within the context of Kenyan universities. The study provides suggestions on enhancing the body of knowledge on e- strategy implementation in the Universities by proffering seven propositions for empirical investigation.

"Strategic Conflict Handling and Customer Satisfaction Among Tier One Supermarkets in Nairobi County," Osman Chesula Wechuli, Stephen Ntuara Kiriinya and Ann Rintari focus on enhancing customer relationships in the context top-tier supermarkets in Nairobi Kenya. They apply strategic leadership through relationship marketing leans, utilizing the construct of strategic conflict handling.

In the article, *"Utilization of Information Systems for Enhancing Service Delivery in Academic Libraries: Addressing Threats and Challenges,"* by Emily Musembi, Elijah Siringi, and Alphonce Nduva analyses optimization of service provision within academic libraries. This study investigates the application of information systems (ISs) to enhance efficiency, with a particular emphasis on the diversity of systems employed.

Lastly, Susan Nyegera Laiboni's *"Exploring Strategic Leadership, Repositioning, and Sustaining Mining Enterprises Amidst the Covid-19 Pandemic and Beyond"* evaluates the measures implemented to protect employees and business from the adverse effects pandemics such the COVID-19.
Enjoy the reading

Prof. Thomas A. Senaji, PhD., PE
Editor in Chief

JOURNAL OF RESEARCH IN HUMANITIES, SCIENCES AND MANAGEMENT (JRHSM)

2023

Volume 1, Issue 3

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Commercialization Models of University Research Output and Patenting Policy Practices in Kenya

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ABSTRACT

Commercialization of research output and patenting is a topic that has triggered the broad interest ofboth academics and practitioners globally. In Kenya for instance, universities have faced criticism fornot undertaking (relevant) research or for focusing on 'blue-sky' research, which is often seen as lessaligned with the needs of the people. The present research study explores the extent and intensity of models of commercialization of university research output and the challenges bedeviling researchersin Kenya. The study is desktop research and descriptive in nature. Using content analysis, various research ideas and views about the commercialization of university research output and patenting Policy practices were reviewed and drawn inferences. Firstly, there is evidence indicating that a numerous research innovations have been developed; however, very few are protected or commercialized. Secondly, the number of patents filed at the Kenya Industrial Property Institute (KIPI) falls far below the investments in the research and innovation system. The study identifies funding of research activities in Kenyan universities as the biggest challenge. The study recommendsthat the Government of Kenya adopt a 2% GDP research funding policy as stipulated in the Science,Technology, and Innovation Act 2013, (ST&I Act, 2013) to enhance and promote more research activities, commercialization, and patenting process in Kenya.

Keywords: Intellectual Property Rights, Copyrights, Commercialization, Research output, and Technology transfer

BACKGROUND

Globally, Universities are known for being recognized as ivory towers and as the centers of the knowledge economy with capacities to innovate, and use knowledge and technologies generated to provide homegrown research solutions sustainably to problems in order to thrive economic growth and competitiveness of the economies. A number of studies for instance (Ateka, 2021; Tamrat, 2020;Burg *et al*, 2021) have criticized African Universities for being ivory towers: aloof, unaccountable and disengaged from the research interests of their communities. A report compiled by OECD Directoratefor Science, Technology, and Industry in 2013 on commercializing public research shows that very few Universities are engaged in the Commercialization of inventions from their research efforts. In Europe for instance, a region that represents the majority of Universities in the World, only about 10%of universities account for 85% of the total income generated by inventions (OECD, 2014). Again, despite Government spending on research and development being the highest (about 90%) in developing countries, R&D Institutions including Universities have not been able to show outputs that meet the expectations of industry and society needs (Ukiwoma, Amade, & Moghalu, 2013). The existing stock of knowledge is expected to increase through publication by university research. Publications may be in form of papers published in refereed journals or Academic textbooks. Formalpublications such as books or book chapters, peer-reviewed journals monograph preprint, academic repositories, blogs, and intellectual property (IP) such as utility models, copyright, and patents. A research study conducted by Ayisi, J. G., et al (2016) indicates that the commercialization of research outputs from universities to industry has

become an area of strong policy interest in Africancountries including Kenya. Many universities are taking precursory steps to incentivize and encourageentrepreneurial activities among their academic staff and students, even though the level of resourcesdevoted to them is low. Many Kenyan universities like their counterparts in developing countries arecharacterized by low research funding, most of which is foreign-funded. Increased enrolment and courses without specialization in their key competent areas, lack of research facilities, poor university-industry linkages, poor remuneration of researchers, which has led to brain drain and poor support from industry, and multinational companies in their research endeavor. Implementation of their research findings is wanting and research is treated like academic research. The researchers also lack incentivesto engage in research. The mandate of these institutions of applying knowledge to the production of goods, services, and technology, has been given little attention and has remained underdeveloped (WIPO, 2000). This is in line with the Economic Survey (2021) report which indicates that the numberof research license applications in Kenya reduced by 8.2 percent to 6,077 in 2019/20 from 6,623 in 2018/19. The decline is partly attributed to the closure of various learning institutions and COVID-19pandemic constraints (KNBS, 2021).

The economic justification for university patenting is to facilitate the exploitation of scientific discoveries by industry through the provision of proprietary rights over inventions (Montobbio, 2009).Intellectual property as a product of research can promote technology transfer from University to Industry. In addition, Rodriguez-Pose and Hardy (2014) emphasize the creation of conditions that areconducive to innovation and successful technology transfer through an imperative policy direction foruniversities of the world. Research is thus, a vital component of the mission of universities, and indeed academic institutions are required to conduct a substantial volume of research that is funded by government, industry, and philanthropic agencies (Vanderford & Marcinkowski, 2015). Development or the commercialization of research innovations should also be a key component of the universities research mission. For instance, novel ideas, knowledge, skills, innovation, technological advances, and products, particularly so in the enabling technologies such as information and communications technologies, biotechnology, and nanotechnology that can enter the marketplace for the benefit of a variety of stakeholders including inventors, universities and society.

Traditionally, teaching and research have been the university's main roles. However, commercialization of research results or entrepreneurial science also referred to as, "technology/knowledge transfer", "third stream" "third mission" or "engagement", has emerged as anadditional role for universities as stimulators and facilitators of knowledge transfer (Perkmann et al., 2012). The "third stream" is about the interactions between universities, industry, and the rest of society, and can be said to be "the stimulation and direct application and exploitation of knowledge for the benefit of the social, cultural and economic development of society" - i.e., community outreach (Molas-Gallart et al., 2002), making technology available to end-users (Tahvanainen & Nikulainen, 2010).

Focus of the Study

The motivation of the study focuses on the current global challenges and socio-economic issues that require homegrown research solutions by research institutions and universities. While looking internally and externally Kenya is surrounded by a couple of challenges, issues, and problems: climatechange challenges, fast technological changes, the Covid-19 pandemic, and many other issues in the 21st century. The questions that arise are "what are Kenyan universities and research institutions doing to provide home-grown solutions to those

problems? What is the current status in terms of research output, commercialization, and patenting policy practices in Kenyan Universities to address those challenges? Finally, where would the world be without inventions and innovations?

To address these pertinent research questions, the study keeps in view the assumption that innovation activity is central to economic modernization. Innovation is a key driving force for economic development and competitiveness in the 21st century. Patents provide incentives for innovation, knowledge creation, and transfer. The patent system has long been used as a policy instrument to spur economic growth and competitiveness. In Vision 2030, Kenya aspires to become globally competitive and a knowledge-led economy. The patent system is therefore an important policy tool that can be harnessed for wealth creation, poverty reduction, and job creation. This is because increased innovativeness will boost productivity in all sectors of the economy (KIPPRA, 2012).

The Kenya Industrial Property Act 2001 defines an invention as a solution to a specific problem in the field of technology. Invention means a solution to a specific problem in the field of technology.It is; a new and useful art (whether producing a physical effect or not), process, machine, manufactureor composition of matter which is not obvious, or any new and useful improvement thereof which is not obvious, capable of being used or applied in trade or industry and includes an alleged invention. An invention may be, or may relate to, a product, or a process (KIPI, 2022)

The term commercialization according to Fakour, (2009), refers to a process in which ideas or products resulting from academic departments, products, services and processes will become availablein the market through which research findings are brought to market and finding new ideas or sale ofnew products and services. In other words, it is the process of bringing an idea, product, or service tothe mass market and making monetary benefits from it. Its process follows a chain of steps namely idea generation, research, development, licensing, marketing, and monitoring. On the other hand, JockGammon, (2017) defines research commercialization as the process through which ideas or research are transformed into marketable products, capital gains, income from licenses, and/or revenue from the sale of a new product. World Intellectual Property Organization (WIPO) refers to Intellectual property (IP) as creations of the mind, such as inventions; literary and artistic works; designs; symbols,names, and images used in commerce. IP is protected in law by, for example, patents, copyright, and trademarks, which enable people to earn recognition or financial benefit from what they invent or create. By striking the right balance between the interests of innovators and the wider public interest, the IP system aims to foster an environment in which creativity and innovation can flourish. (WIPO, 2022)

A patent in particular, is an exclusive right granted for an invention, which is a product or a process that provides, in general, a new way of doing something, or offers a new technical solution toa problem. To get a patent, technical information about the invention must be disclosed to the public in a patent application. Patents have two purposes: awarding rights to the inventor and preventing others from claiming ownership. In research, patents encourage innovation by ensuring that work focuses on new ideas. Patent searching can help researchers to avoid wasting valuable time and moneyon unoriginal work (WIPO, 2022).

The Government of Kenya established a critical institution namely Kenya Industrial Property

Institute (KIPI) to handle the matter of patenting registration and protection of inventions in the country. Kenya Industrial Property Institute (KIPI) is a government parastatal under the Ministry of Industrialization, Trade, and Enterprise Development. The Institute was established on 2nd May, 2002 upon the coming into force of the Industrial Property Act 2001. Previously the Institute existed as Kenya Industrial Property Office (KIPO), which was established in February 1990 after the enactmentof the Industrial Property Act, CAP 509 of the Laws of Kenya.

In terms of policy, the Third Medium Term Plan of Vision 2030, (MTP3, 2018-2022), whose focus is on transforming the country; where the Science, Technology, and Innovation sector has an overarching theme, *"Harnessing Science, Technology, and Innovation for Regional and Global Competitiveness"* (GoK, 2018). The third Medium Term Plan of Vision 2030 (MTP III) recommends for intensifying the coordination of technology, innovation, research, development, and commercialization as a flagship program for sustained productivity growth. The Coordination of Technology and Innovation Commercialization Programme will ensure an effective innovation systemto harness the potential offered by modern science and technology for social and economic advancement.

National Science, Technology and Innovation Parks will be established in Konza Techno polis and Dedan Kimathi University of Technology to spur the formation of new ST&I-based businesses and serve as incubation centres for technology and innovations. Phase I activities will be undertaken in the two parks: County Technology and Innovation Delivery Services Programme. The programmewill establish and empower county technology and innovations advisory and prospecting centres to coordinate technology transfer and adoption. The centres will also provide advisory services for the generation and protection of intellectual assets arising from the interplay between indigenous knowledge/technologies and modern science. Biotechnology and Biosciences Programme: The programme will build Kenya's capacity to develop and safely apply biotechnology and biosciences inagriculture, health, mining, industry and environmental conservation (GoK, 2019 MTP III).

Customized into the MTP III is the country's Vision, which includes The Science, Technology and Innovation (ST&I) Policy framework. This framework comprises of the ST&I policy and strategy(2008) and enacted the Science, Technology and Innovation Act in 2013, (ST&I Act, 2013) that emphasize the need for a functional innovation system in which universities (and public research institutes) play a leading role in knowledge and technology generation through research and development (Bolo et al., 2015a; [GoK] 2013b). Thus, the ST&I framework emphasizes the development of an efficient R&D infrastructure; strengthening networks between higher education, academic entrepreneurs, technological institutions, and local industries in support of R&D projects, technology transfer, the provision of risk capital for new innovative companies, university infrastructure, micro-financing for start-ups, seed coaching and stipends for academic entrepreneurs. These institutions are to bridge the "innovation chasm," which describes the gap between knowledgegenerators (universities and research institutions) and the market.

It is against this backdrop that the research paper focuses on the commercialization of research output and patenting policy practices in Kenya. The study is guided by the following specific objectives: establish areas of knowledge gaps and policy strengthening for university research out, commercialization and patenting process in Kenya; review the current status and

conclusively providerecommendations to inform policy direction. The study is organized into various sections. First sectionis the background information, second section is narrative of the focus of the study; third section provide the conceptual framework; the fourth section is the materials and methods; and, the fifty section is the discussion, conclusion and recommendations.

CONCEPTUAL FRAMEWORK MODEL

In this section is a discussion of conceptual understanding of the interplay of critical variables of the study are emphasized, and, how they are linked to commercialization and patenting policy practices in Kenya. The rationale for commercialization and patenting is rooted in the belief that open science is not sufficient to influence industry and generate industrial innovation. The economic justification for university patenting is to facilitate the exploitation of scientific discoveries by industry through theprovision of proprietary rights over inventions (Montobbio, 2009). According to Caulfield and Ogbogu (2015), commercialization can also help build university-industry collaborations that are often necessary for the translation of research into beneficial products and therapies for public use.

This is in line with the Universities Act No. 42 of 2012 as amended in 2016 stipulates that one of the objectives of university education is the advancement of knowledge through teaching, scholarly research and scientific investigation. Changes in the international economic environment have increased the role of knowledge as a driver of competitiveness, and new technologies have opened upnew opportunities for development. In this context, research

Fig 1: Commercialization and Patenting Model
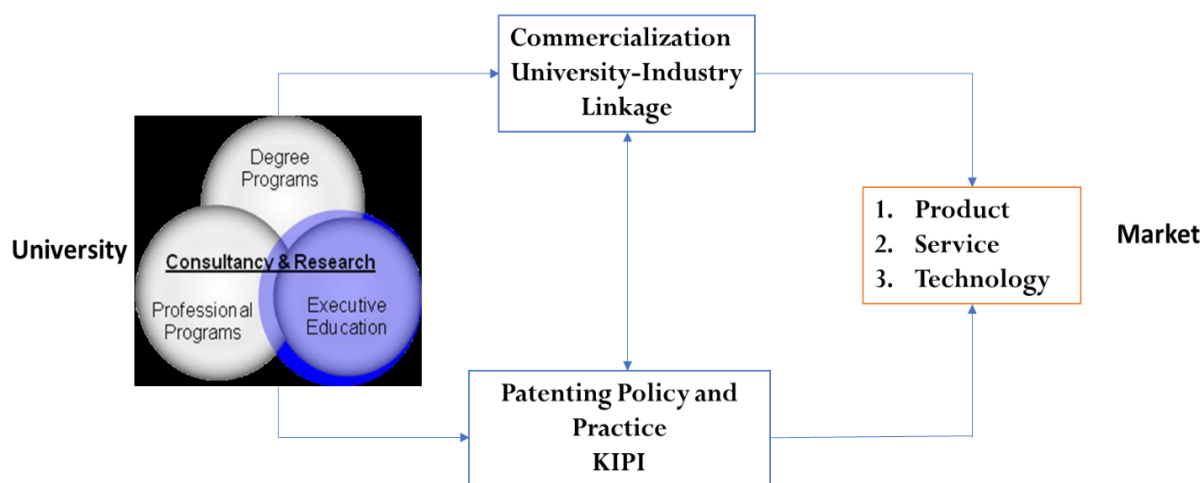
institutions and universities are increasingly required to amplify their impact on the economy and society. Higher Education as a subsector envisions the promotion and coordination of quality education, training, and research; and enhances the integration of Science, Technology, and Innovation into national production systems for sustainable development. Therefore, briefly, part of universities' role is to commercialize and patent their research output.

In our conceptualization model in figure 1, the university stands out as a critical powerhouse institution that creates a new body of knowledge, inventions, and research innovations. Other

functions of the university are highlighted such as new academic programme design and development, teaching,executive and professional training and consultancy as support services to research and development.In the model, we illustrate how the journey of commercialization kicks off when the university adopta deliberate policy measure relating to university–industry linkage or collaborations strategy in her blue print documents. Research Scientists in the university will appreciate the benefits of such collaborations as a critical stage and opportunity to test their innovations in different forms keeping inview rivalries in the market. This process works hand in hand with patenting inventions through registration with the government of Kenya; and, in this case, Kenya Industrial Property Institute (KIPI)for purposes of awarding rights to the inventor and preventing others from claiming ownership

At this stage, the product, service or technology can be rolled out to the market. Commercialization and patenting, therefore, allow technology created during research activities to befurther developed into marketable products for the benefit of the public. This is accomplished throughtechnology transfer, which is the process by which technology, skills, or knowledge developed duringresearch activities at the research institution are applied and used in another place. Technology transferoften refers to transferring technology between a research laboratory and a commercial partner, including industry, academia, and state and local governments (Lenagh, 2012).

The study conceptual model is connected to the Triple Helix Theory, which was first introduced in 1983 by Etzkowitz (1998), Etzkowitz, and Leydesdoff (2000). The Theory highlights the relationship between University, Industry and Governments towards the development of Knowledge societies. The Triple Helix theory (Breznitz & Ram, 2011), has also been referred to as amodel (Etzkowitz, 2003; Etzkowitz & Leydesdorff, 2000; Rieu, 2011) and a concept (Ranga & Etzkowitz, 2013). The Triple Helix theory advocates for increased interaction between three actors; University, Industry and Government (Rieu, 2011) which in the case of University-Industry linkage, leads to changes in culture and values within universities that drive them towards more entrepreneurialtendencies (Mowery & Sampat, 2007).

In the Triple Helix Theory, the Government plays a crucial role as a funder of the Research and Development in Universities. Additionally, it is also the main financier for the technology transfer and commercialization of products, from the funded University Research activities (Rao, Piccaluga, & Meng, 2011) and in 18 formulating relevant policies and institutions to actualize commercializationof the research knowledge (Gorasson & Brundenius, 2011). The University's role in innovation as highlighted by the Triple Helix theory is enhanced especially in light of the emergence of knowledge- based societies; it includes research as well as teaching for socioeconomic development.

MATERIALS AND METHODS

The study is desktop research, which relies heavily on secondary database. The study adopts a contentanalysis approach. Content analysis is a widely used qualitative research technique. Using content analysis, researchers can quantify and analyze the presence, meanings, and relationships of used datato interpret meaning from the content of text data and, hence, adhere to the naturalistic paradigm suchcertain words, themes, or concepts. In this case, the secondary database was collected from diverse sources relating to the topic of the study. This consisted of World Intellectual Property Organization(WIPO) annual reports, African Regional Intellectual Property Organization (ARIPO) annual reports,the Industrial Property Act, patent statistics from the KIPI,

patenting procedures, the cost of patenting,the National IPR audit, the patent law and the regulatory framework in addition to IPR papers that arespecific to Kenya. It is expected that, research results of the study will be useful to inform policy, academia. In addition, it will build on the current body of knowledge in the area of Commercializationand patenting policy practice in Kenya and beyond.

DISCUSSION OF RESEARCH RESULTS

Technological progress and economic strength in any modem nation, Kenya being no exception, depends greatly on the ability of its nationals to be creative and innovative and be aggressive in the promotion of trade both at home and abroad. Commercialization and Patents play a major role in the stimulation of inventive activity (KIPI, 2022). A robust patent system and appropriate enforcement are prerequisites for technology transfer and investment. Without patent protection, no business is comfortable in disclosing its technologies or investing in R&D. Thus, the most fundamental way that patents facilitate technology transfer and investment is the creation of a safe environment in which business and further R&D may be conducted. With such investment and business relations, given theproper structuring of and favorable terms in joint venture agreements, a rich harvest of technology transfer in the form of expertise and human capital development can be reaped.

Kenya's long-term development blueprint, (Vision 2030) endeavor to create a globally competitive and prosperous country. It proposes intensified application of science, technology and innovation to raise productivity in all sectors. This is because it recognizes the critical role played byresearch, development and innovation in accelerating development in all newly industrialized economies of the world (Government of Kenya, 2007). Kenya intends to become a knowledge led economy characterized by creation, adaptation and use of knowledge for rapid economic growth. Thisis to be realized through intensification of innovation in priority sectors, transforming research into inventions, which should be protected by IPR (Government of Kenya, 2007).

Among the challenges identified in this endeavor is low capacity for IPR, which is a disincentive to innovation and an inappropriate and unresponsive IPR regime. It has also been noted (Government of Kenya, 2008) that the Kenyan economy exhibits limited levels of innovation requiredto foster increased output and productivity necessary for employment and wealth creation. These challenges are key considerations for policy makers that should be addressed to stimulate growth andcompetitiveness of the nation to realize Vision 2030.

Sessional Paper No. 2 of 1996 on Industrial Transformation to the Year 2020 envisaged Kenya becoming a Newly Industrialized Country (NIC) by the year 2020. It proposes putting in place appropriate technology policies to spur industrial transformation, while emphasizing acquisition of technology by accessing patent documents. For effective industrialization, it is necessary for Kenya to identify its natural resources and products through branding and patenting. Simultaneously, the 9th National Development Plan (2002-2008) has also stressed the need to strengthen Kenya Industrial Property Institute (KIPI) to enhance patenting of new technologies as a way of enhancing the role of technology, research and development in industrial growth. This reflects how important patenting is to achieving development

Patenting Policy Practices in Kenya and the Region

Intellectual property (IP) rights aim to stimulate innovation by enabling inventors to appropriate the returns on their investments. IP also plays an important role in the creation, dissemination, and use of new knowledge for further innovation, as contained in the inventions disclosed in patent documents. The Republic of Kenya has embraced the patent system and the cycle of creation Theory. Kenya has several legislative instruments on Intellectual Property Rights (IPR), which comply with international standards (including the Agreement on Trade-Related Aspects of Intellectual Property (TRIPS)).

IPRs such as Patents, trademarks, industrial designs, and copyright are protected. Such legislations include the Anti-Counterfeit Act (2008); Copyright Act No. 12 of 2001; Industrial Property Act (IPA) No. 3 of 2001; Trade Marks Act Cap 506 (as last amended by the Trade Marks Act, 2002), and the Seed and Plant Varieties Act, Cap 326. Three different institutions with separate and distinct parent ministries administer these acts. The Kenya Industrial Property Institute (KIPI) in the Ministry of Trade administers the IPA and the Trademarks Act. The Kenya Copyright Board under the Attorney General administers the Copyright Act, and the Kenya Plant and Health Inspectorate in charge of seeds and variety is under the Ministry of Agriculture.

In the past, the biggest challenge for the institutions was been the lack of a clear government policy on IPR (Ogada et al., 2004). However, there has been a relief in the recent time following the establishment of the Kenya Industrial Property Institute (KIPI), which is responsible for examining and granting patents in Kenya, and the African Regional Intellectual Property Organization (ARIPO), which is a regional intergovernmental organization mandated to grant patents on behalf of its member states. KIPI operates under the Industrial Property Act 2001. KIPI works with a range of institutions and government ministries to ensure that IP is incorporated into their strategic plans. KIPI, with its partners in government, has also played a key role in establishing the Kenya National Innovation Agency and the National Research Fund, both of which are designed to further strengthen Kenya's innovation ecosystem. Kenya is a member state of the World Intellectual Property Organization (WIPO) since 1971 and the African Regional Intellectual Property Organization (ARIPO) since 1978. The African Regional Intellectual Property Organization (ARIPO) is governed through various organs. These organs are the Council of Ministers, Administrative Council, Board of Appeal and the Secretariat. The Administrative Council has subsidiary committees that come under two broad categories, namely, Administrative Committees as well as Technical Committees. The Council of Ministers comprises Ministers of governments of the ARIPO Member States who are responsible for the administration of intellectual property laws in their respective countries. It is the supreme organ of the Organization.

ARIPO was established under the Lusaka Agreement, which was signed in Lusaka, Zambia, on 9 December 1976. The objectives are, inter alia, to promote, harmonize and develop intellectual property systems in Africa. To carry out its functions, ARIPO administers four Protocols. These are the Harare Protocol, the Banjul Protocol, the Swakopmund Protocol and the Arusha Protocol. The Protocol on Patents and Industrial Designs (the Harare Protocol) was adopted in 1984 empowering ARIPO to grant patents and register industrial designs as well as utility models on behalf of the protocol's Contracting States. Currently, the Protocol is in force in all the Member States except Somalia and Mauritius.

Banjul protocol adopted in 1993, this protocol empowers ARIPO to register marks on behalf of the Contracting States. Eleven countries are currently party to the Protocol. These are Botswana, Kingdom of Eswatini, Kingdom of Lesotho, Liberia, Malawi, Mozambique, Namibia, São Tomé & Príncipe, Tanzania, Uganda and Zimbabwe.

The Swakopmund Protocol on the Protection of Traditional Knowledge and Expressions of Folklore was adopted in 2010 and entered into force in 2015. The Protocol aims to protect the traditional knowledge and expressions of folklore of Africa and to ensure that it is properly utilized for the welfare of her people. Eight Member States have ratified the Protocol. These are Botswana, The Gambia, Liberia, Malawi, Namibia, Rwanda, Zambia and Zimbabwe. The Arusha Protocol for the Protection of New Varieties of Plants was adopted in Arusha, Tanzania in July 2015. It aims to provide the Member States with a regional plant protection system that recognizes the need to provide growers and farmers with improved varieties of plants to ensure sustainable agricultural production. The Protocol has received five signatures from The Gambia, Ghana, Mozambique, São Tomé & Príncipe, and the United Republic of Tanzania. So far, Rwanda and São Tomé & Príncipe have ratifiedthe Protocol. The Protocol will only enter into force after four States have ratified it (AGRIPO, 2020)

Kenya has four intellectual property protection bodies: the Kenya Industrial Property Institute (KIPI), the Kenya Copyright Board (KECOBO), Kenya Plant Health Inspectorate Services (KEPHIS) and the Anti-Counterfeit Agency (ACA). Other bodies such as the Kenya National Innovation Agency (KENIA) and the National Research Fund support the broader development of Kenya's innovation landscape by, for example, strengthening linkages between academia and business (Mbuimwe, 2016).

Briefly, Kenya's national legal framework for IP has evolved quite considerably over the past 10 years. The Kenya patent law has five objectives: to promote inventive and innovative activity, to facilitate the acquisition of technology through the grant and regulation of patents, to screen technology transfer agreements and licenses, to provide information to the public in Kenya, and to repeal the law. In the next section, we provide the statistical trends of patent registration in the region

A Model Procedure for commercialization and Patenting Practices

Kenya Vision 2030 captures the essence of science technology and innovation in promoting national development. Kenya also subscribes to the African Union Agenda 2063, which advocates for the application of at least 2 percent of GDP in research and development by governments in Africa. Though this has not been attained, in Kenya the government has made progress by creating a KSh. 3 billion research fund. Other actors in the private and development sectors complement this effort greatly. Suffice it to say, as far as research and innovation is concerned, the policy is now in tandem with action. Investments in research and development lead to novel creations most of which are recognized as IPRs. IP protection is therefore synonymous with investment in R&D a role well-articulated by the Industrial Property Act No. 3 of 2001.

Conceptualization of research ideas at university is a critical stage. Students, teachers, and researchers involve themselves in the intellectual process of developing a research idea with a realistic and appropriate research design. The concept paper is transformed into a project proposal that is funded by either the university, development partners, donors, or the Government. A funded research project outcome normally results in research output in form of innovations such as

product prototypes, services, or, innovative technology. It should be noted that, universities in Kenya today have created offices within their top management ranks such as deputy vice-chancellors and directorates in charge of innovation, entrepreneurship, extension, and community outreach programs. Further, nearly all public universities have some form of technology transfer office (TTO) or intellectual property management office (IPMO), to facilitate the spillover of knowledge by commercializing research undertaken at the universities.

Figure 2 provides an elaborate illustration of the systematic Model for IP Protection, commercialization, and technology transfer of university research output. The figure demonstrates a model process of technology transfer that commences right from invention disclosures by the university, patent protection, negotiations on commercialization agreements, transfer and licensing to the industry; and, a number of spin-off companies generated, among others. According to KIPI's Guidelines for the examination of Patents, Utility Models, and Industrial Designs, an application for the grant and registration of a Kenyan patent, the inventor or any other person to whom she has transferred the right may file utility model, or industrial the design. It is presumed that, a legal entity does not have the ability to invent or create but rather it is the natural persons working for the legal entity. It is on this basis that it is necessary when a legal entity is filing the application, that the application be accompanied by a statement justifying the applicant's right to a patent (S34 (3); r12 (8)). Such statement is furnished on Form IP 4 or assignment documents. If the application does not fulfill these requirements the examiner is required to invite the applicant, within 14 days from the date of the examination, to submit the required correction. The invitation should indicate that the applicant has 60 days to comply. If the applicant does not comply with the invitation and, as a result, the examiner treats the application as if it had not been filed, the examiner should within fourteen days, inform the applicant in writing. Where an application meets the aforementioned requirements, the receiving date becomes the filing date and the same must be so communicated to the applicant in writing (KIPI, 2007).

By granting universities and public research organizations (PROs) the rights to their own intellectual property (IP) – patents, copyrights, trademarks, utility models, and industrial designs – derived from state-financed research, and allowing them to commercialize their results, governments seek to accelerate the transformation of scientific discoveries into industrial applications and to strengthen collaborative ties between the universities and industries. In addition, transforming research ideas and outcomes into commercial products or services requires special competencies and skills, as well as special infrastructure and eco-systemic conditions. Early networks with the industry give greater chance that the invention will be exploited. The industry could advise and monitor the project according to the market needs. Personal contacts are an effective way to attract companies to the universities' technologies. Universities' technologies are unproven and normally need further investment before any product can really sell in a market. In addition, due to the technology being in its early stage, it is a very high risk. The invention that receive early funding from established companies and involve collaborative efforts between the inventors and industry teams, have a higher likelihood of being licensed by those companies. However, the study puts a heavy emphasis on University Management to negotiate commercialization and technology transfer and licensing through a transparent, and accountable legal procedure to clear doubts on the contracts the university signs with the industry.

Fig 2: Model for IP Protection and Commercialization of University Research Output

The concept for research funding
1. Student
2. Teachers
3. Researchers

Source of Funding for Research,
1. Grant
2. Joint Ventures
3. Contracts
4. Venture Capital

University Research Discovery Submitted to KIPI for evaluation and subsequent Patenting

University

Degree Programs

Consultancy & Research

Professional Programs

Executive Education

IP Protection by KIPI
1. Patent
2. Copy right
3. Certificates
4. Trademarks,
5. knowhow

Negotiation on:
1. License for innovative technology
2. Commercialization Agreements,
3. Loyalties, and stakes

University Innovations
1. Product
2. Service
3. Technology

Source: Modified from expanded Model for Commercialization and transfer by Vladislav Bogovin, and Evgeniya Vidishcheva (2021)

Status of Patenting and commercialization trends in Kenya and the Region
The history of patent protection in Kenya dates back to 1914 when the Patents and Designs Ordinance 1913 was enacted, and the first patent was registered on 23 December 1914 in the name of Marconi's Wireless Telegraph Co of the United Kingdom. Kenya's patent system continued to depend on the United Kingdom system until 1989 when the Industrial Property Act CAP 509 was enacted. According to Mbote et al. (2009), before the enactment of the Industrial Property Act Cap. 509 in 1989, patents and designs that were granted in England were locally registered without going through the examination process. The enactment of the Industrial Property Act in 1989 gave birth to the Kenya Industrial Property Office (KIPO1), which was given the mandate to examine, grant and register patents, utility models and industrial designs.

To correctly understand and interpret the potential role that patents play in fostering technology commercialization in developing countries, it is necessary to look at the prevailing research capabilities and national innovation environments at large. Technological commercialization (and more broadly technology transfer) from public research and the channels through which it develops, depend on several factors (OECD, 2007; World Bank, 2010). It is briefly summarized as follows (i) research capabilities and relevance, and human capital; (ii) the legal and regulatory framework; (iii) the institutional setting of research institutions (structure and governance); iv) access to finance and

intermediary structures, for example technology transfer intermediaries; and (v) firms' absorption capacity. Other factors influence the intensity and scope of linkages between universities and PROs, such as firms and society. For instance, both the economic structure and social needs of a country influence the funding and direction of research.

The importance of patenting in Kenya is reflected in various government development strategies and in the enactment of a new patent law embodied in the Industrial Property Act 2001. The patent law was to enable Kenya to use its patent policy to foster national developmental needs. However, an analysis of statistical information on patents reveals no significant change in patent applications and grants, with the enactment of this law. There is need to find out why growth in patenting in Kenya has not been experienced. Despite the recognition and acknowledgement of the importance of IPR and patents in the government development agenda, statistics on registered patents in Kenya indicate a very low patent application compared to that of developed and newly industrialized countries (WIPO, 2008). Furthermore, despite growing awareness about patents, Kenya has not experienced growth in patenting contrary to the global trend. Patent grant is also very low with a success rate of 31 per cent average for the ten-year period (Ogada et al., 2004).

This negates the acknowledged importance of IPR/patents in spurring innovation and economic development. Low patenting and IPR is a challenge to the economic development and achievement of Vision 2030. In Kenya, previous studies (Bolo et al, 2014) have shown that 65% of innovators have not protected their inventions, 53% have reported low awareness of intellectual property and according to the Kenya Innovation Survey (2012), only 12.9% of firms had secured patents in Kenya and of these just 7% reported having used their patents. A study by Bolo et al (2015) indicates that patent applications in Kenya still has negligible contribution to the growth of worldwide patent applications as it accounted for approximately 0.011 percent of the patent applications worldwide in 2012, which stood at 2.35 million.

The patent application and registration statistics in Kenya for the period years 2010 to 2019 provided Kenya Industrial Property Institute (KIPI) indicate that the volumes of registration of patents are still low in Kenya (KIPI, 2021).

See Figures 3 and 4.

Fig 3: Number of patent applications in Kenya 2010-2019
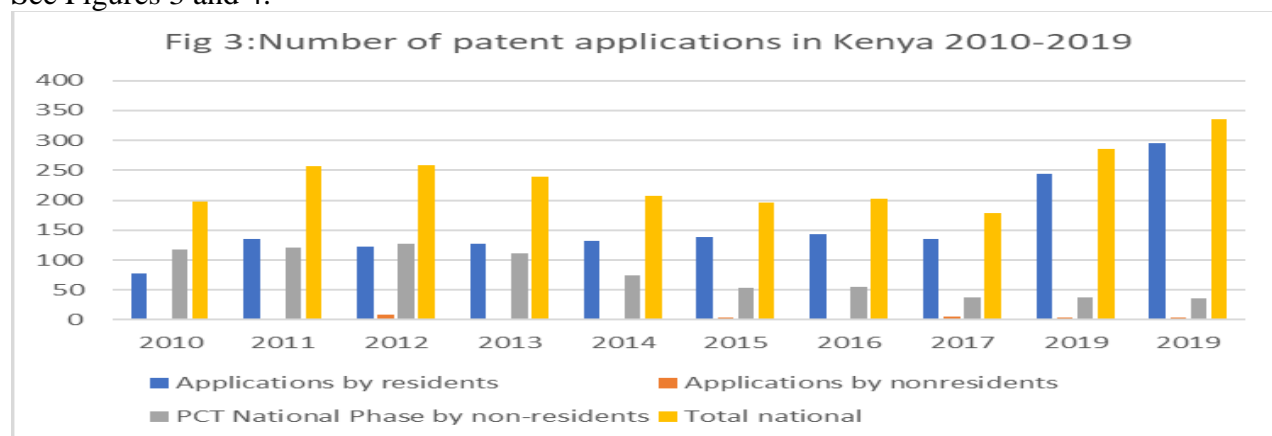
Source: Kenya Industrial Property Institute (2021)

According to African Regional Intellectual Property Organization (ARIPO) annual report (2020), the year 2020 witnessed a drop in industrial property filings in patents, trademarks, and utility

models. There was however, a 13% increase in the number of industrial design applications received by the office compared to the previous year. Patents registered a 13% drop in applications compared to 2019. Utility models registered a sharp drop of 39%. Trademark applications fell by 16% when compared to 2019. The number of classes for the trademark applications filed during the reporting period declined by 11%. There was however, a 45% increase in the number of patents that were granted in 2020 compared to those granted in 2019.

According to the Kenya Industrial Property Institute (KIPI), by mid-2016, Kenya's higher education institutions had four patents only and seven utility model certificates, a form of intellectual property protection that is a step down from a patent. Only one government research center had an active patent while corporates accounted for 22 patents. The Jomo Kenyatta University of Agriculture and Technology (JKUAT) had four patents to its name in November 2017, meaning that these numbers may have improved since mid-2016. The failure by research institutions and the private sector to protect intellectual property is a "very unusual" trend that is attributed partly to a lack of incentives in universities for researchers to develop innovations. A study conducted by Bolo et al., (2015) reveals that, a number of reasons are given for this poor performance. This includes the incentives and rewards systems that are skewed in favor of publications as a yardstick for promotions, the cultural orientation that views knowledge as public goods and does not encourage intellectual property protection and lack of clear policy guidelines on the commercialization of research outputs.

A study conducted by KIPPRA (2012) entitled Patenting in Kenya: Status and challenges indicates patent applicants from universities were extremely low contrary to expectations. Despite the low patenting levels, 80 percent of respondents reported they had innovations that were not protected. Only 20 percent of respondents had commercialized their patents. Outstanding challenges/obstacles to patenting are the long and tedious patenting process, difficult patent drafting, limited IP knowledge, lack of IP professionals, limited R&D funds, and a weak IPR regime. The study recommends that significant factors for the promotion of patenting are creating IP awareness, recognizing and honoring inventors, and availing opportunities for patent exploitation, reducing infringement, and the availability of IP professionals.

Fig 4: Number of patents granted by KIPI in Kenya 2010 - 2019
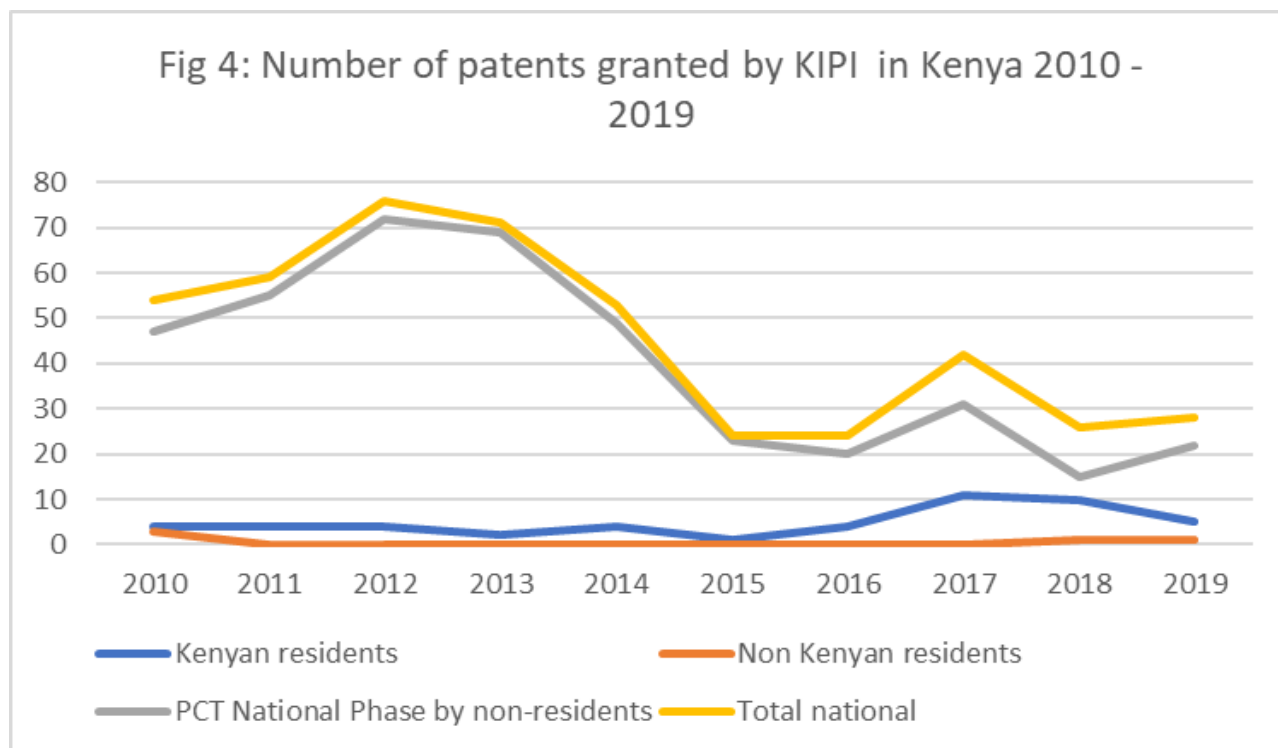
Source: Kenya Industrial Property Institute (2021)

CONCLUSION

The present study focuses on the models of commercialization of university research output and patenting policy practices in Kenya. The study was guided by the following specific objectives: to establish areas of knowledge gaps and policy strengthening for university research output, commercialization, and patenting processes in Kenya and conclusively provide recommendations to inform policy direction. In the study, we have indicated that development or the commercialization of research should also be a key component of universities research mission. This consist of novel ideas, knowledge, skills, innovation, technological advances and products, particularly so in the enabling technologies such as information and communications technologies, biotechnology and nanotechnology that can enter the marketplace for the benefit of a variety of stakeholders including inventors, universities and society.

Thus, the production, distribution and use of knowledge and information will increasingly be a distinguishing factor of strong economies and robust societies in the 21st century. Intellectual property (IP) rights are supposed to promote industrial investment in activities aimed at developing new technologies and improved products and processes. IP rights give university innovators and creators time-bound rights allowing them to benefit from their technological advances and original work, and to obtain a return on their investment. In Kenya, KIPI plays a critical role in IPs registration.

Further, the study established that in Kenya, most universities are now aware of how to identify and protect their intellectual property (IP) assets arising from their research base. The study indicates that most universities have well-established intellectual Property Rights Offices (IPROs)

for maintaining IPs data and analysis as well as policy frameworks that help inform and shed light on decisions related to specific science and technology developments, R&D and innovation, entrepreneurship and enterprise dynamics. The study has also highlighted challenges faced by Kenyan universities and the need to have the capacity to create an overall strategy for managing their IP in line with their mission and vision. For this purpose, the study provides a number of recommendations to improve and strengthen the commercialization and transfer of technology to industry. These recommendations include:

- Adoption of a 2% GDP research funding policy as stipulated in the Science, Technology, and Innovation Act 2013, (ST&I Act, 2013) for purposes of increasing R&D funding to universities by Governement. This policy change expectation is that the universities could contribute more directly to industrial development.
- Provision of incentives in form of tax rebates on R&D expenditure to the private sector to encourage R&D.
- Strengthening of capacity building and training on IPR knowledge to enhance drafting patents capacities of academic staff
- Promotion of compensation research policy for researchers' inventions and innovations efforts.
- Promotion of collaborative research and linkage between universities and industry

REFERENCES

African Regional Intellectual Property Organization. (2020). Annual Report. file:///C:/Users/user/Documents/Nazarene%202022%20conference/ARIPO-Annual-Report-2020- 2.pdf.

Ateka, E. M. (2021). Commercialization of Agricultural Innovations in Kenyan Universities: The case of Jomo Kenyatta University of Agriculture and Technology and Busia County.

Ayisi, j.G., et al., (2016). Initiatives to Promote Commercialization of Research Outputs by Kenyan Universities. Elixir Edu. Journal, 100, 43517-43529%20(1).pdf file:///C:/Users/user/Downloads/100201643517-4329%20 (1).pdf.

Bolo, M., Odongo, D., & Awino, V. (2015). Industrial Property Rights Acquisition in Kenya: Facts, figures and trends. Scinnovent Centre Discussion Paper. https://ww.researchgate.net/profile/Maurice-Bolo/publication/275340459-industrial-property Rights-Acquisition-in-Kenya-Facts-figures-and-trend/iink/5538cffb0cf226723ab641c2/ Industrial Property- Rights-Acquisition_in_Kenya_fcats_figures_and_trends.pdf? Origin=publication detail

Caulfield, T., & Ogbogu, U. (2015). The commercialization of university-based research: Balancing risks and benefits. BMC Medical Ethics, 16, 70. https://doi.org/10.1186/s12910-015-0064-2. https://bmcedethics.biomedcentral.com/track/pdf/10.1186/s12910-015-0064-2.pdf.

Fakour, B. (2009). Conditions predisposing to promote commercialization of research results in academic departments. Approach, (40), 35-39.

Government of Kenya. (2007). Kenya Vision 2030. Nairobi: Ministry of Planning and National Development and the National Economic and Social Council (NESC).

Government of Kenya. (2008a). First Medium-Term Plan, 2008-2012, Kenya Vision 2030. Nairobi: Ministry of State for Planning, National Development and Vision 2030.

Government of Kenya. (2019). Third Medium Term Plan of Vision 2030 (MTP3, 2018-2022). https://vision20230.go.ke/publication/third_medium_term_plan_2018_2022/.

Mbote, K. P., Boadi, R., Muraguri, L., Opati, L. M., Sihanya, B., Sikinyi, E., et al. (2009). Intellectual Property Rights in Kenya (B. Sihanya & M. Wekesa, Eds.).

Kenya Industrial Property Institute. (2021). Patent, trademark, industrial design, and utility model statistics (2000-2019).

Kenya Industrial Property Institute. (2022). Patents. https://www.kipi.go.ke/index.php/patents Kenya National Bureau of Statistics. (2021). Economics Survey Report 2021. https://www.knbs.or.ke/wp_content/uploads/2021/09/Economic-suvey-2021.pdf.

KIPI. (2007). KIPI's Guidelines for the examination of Patents, Utility Models, and Industrial Designs. http://www.kipi.go.ke/images/docs/guidelines%20to%20patenting.pdf.

Kiveu, M. (2012). Patenting in Kenya: Status and Challenges. Kenya Institute for Public Policy Research and Analysis 141, 2012. KIPPRA https://repository.kippra.or.ke/bitstream/handle/123456789/2504/DP141.PDF?SEQUEN CE+1&isAl lowed=y.

Lenagh, A. (2012). Technology transfer 101: Defining research commercialization. https://www.unemed.com/blog/technology-transfer-101-defining-research-commercialization.

Mbuimwe, F. (2016). Strengthening Kenya's IP Landscape. WIPO Magazine. https://www.wipo.int/wipo_magazine/en/2016/04/article_0007.html.

Molas- Gallart, .j. et al., (2002). Measuring Third Stream Activities. Research Gate https://www.researchgate.net.

Montobbio, F. (2009). Intellectual property rights and knowledge transfer from public research to industry in the US and Europe: Which lessons for innovation systems in developing countries? Suggestions for Further Research in Developing Countries and Countries with Economies in Transition. Geneva: World Intellectual Property Organization.

OECD. (2007). OECD Review of Innovation: China. Paris: OECD.

OECD. (2022). Intellectual property (IP) statistics and analysis. https://www.oecd.org/sti/intellectual-property-statistics-and-analysis.html.

Ogada, T., Nyangun K., Njuguna D., Mwasi M., Sange S., & Gituku B. (2004). Report on National Intellectual Property Audit. World Intellectual Property Organization (WIPO).

Perkmann, M., et al. (2012). Academic engagement and commercialization: A review of the literature on university-industry relations. Research Policy, 42, 423–442. http://dx.doi.org/10.1016/j.respol.2012.09.007.

Republic of Kenya. (2019). Ministry of education sessional paper no. 1 of 2019 on A Policy Framework for Reforming Education and Training for Sustainable Development in Kenya Towards Realizing Quality, Relevant and Inclusive Education and Training for Sustainable Development. Government printer- Nairobi.

Rodriguez-Pose, A., & Hardy, D. (2014). Technology and Industrial Parks in Emerging Countries. https://link.springer.com/book/10.1007/978-3-319-07992-9
Section 21(1) Kenya Industrial Property Act 2001 [hereinafter IPA 2001].

Tahvanainen, A., & Nikulainen, T. (2010). Towards Demand Based Innovation Policy? The Introduction of SHOKs as Innovation Policy Instrument. file:///C:/Users/user/Downloads/dp1182.pdf.

Tamrat, W. (2020). Defying the notion of ivory tower in aftermath of COVID-19. In Higher Education in Ethiopia: Themes and Issues from an African Perspective (Edited Book). Brill. https://brill.com/view/book/9789004513488/BP000085.xml.

Ukwuoma, P. O., Amade, B., & Moghalu, E. I. (2013, January-February). The Management of Research and Development (R&D) for Commercialization in Nigeria. International Journal of Advanced Scientific and Technical Research, 1(3).

Van Burg, E., Du, J., & Kers, J. G. (2021). When do academics patent outside their university? An in-depth case study.

Vanderford, N. L., & Marcinkowski, E. (2015). A Case Study of the Impediments to the Commercialization of Research at the University of Kentucky (Version 2; referees: 2 approved, 1 approved with reservations). F1000Research, 4, 133. doi: 10.12688/f1000research.6487.2.

World Bank. (2010). Innovation Policy: A Guide for Developing Countries. Washington, D.C.: The World Bank.

World Intellectual Property Organization (WIPO). (2022). What is Intellectual Property? https://www.wipo.int/about-ip/en/.

World Intellectual Property Organization. (2000). Universities, Research and Development, Organization and Intellectual Property: General Overview of the Links between Education, Research, Public Interest and IPR. www.wipo.int/edocs/mdocs/innovation/en/.../wipo-ip-dar-00-inf-1.

World Intellectual Property Organization. (2008). World Patent Report: Statistical Review.

Re- Positioning Research in Turbulent Times: Embracing Change in Innovation Science, Technology, Education and Business Perspectives

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ABSTRACT

The world is currently experiencing times of turbulence, occasioned by the Covid-19 pandemic and this has created disruption across economic sectors including education and business. This came with major disruptions and disorder across the sectors hampering economic growth and development while in some sense it brought restructuring and shifting of economic systems and a new world order. However, there has been witnessed transformation in terms of the virtual world development to cope with the rapidly emerging new normal and this has seen new innovations and emerging trends in science, technology, education and business among other economic sectors. Studies have shown that so far there is relatively low impact of innovation, science and technology in transforming education and business norms and practices especially in low-income countries. As such, there is need to integrate important aspects of science, technology and innovation (STI) into education and business systems because they have played a key role in responding to the COVID-19 pandemic and are essential for effective response to and recovery from the pandemic effects in low and middle-income settings and the unprecedented socio-economic crisis it has triggered. Re-thinking of an inclusive and empowering approach should become part of the mainstream across the sectors, both as a means of addressing the urgent turbulence and instabilities and as a way of re-orienting the development of Innovation and technology into business and education sector to curb the future challenges

Key Words: *Innovation science, Technology, Education, Business, Turbulent times*

INTRODUCTION

The world is currently experiencing a period of considerable economic turbulence and political uncertainty, occasioned by the Covid-19 pandemic, greenhouse effect occasioned by global warming and depletion of ozone layer and locust invasion among others (Goldfrank; the World Bank, 2020). International alliances and trading blocs are beginning to fracture; there is evident instability and civil war in the Middle East, which seems insoluble. Growth engines of developing economies have begun to show signs of stuttering. The disruptions and disorder witnessed across the sectors has hampered economic growth and development while in some sense it has brought restructuring and shifting of economic systems and a new world order. However, there has been witnessed transformation in terms of the virtual world development to cope with the rapidly emerging new normal and this has seen new innovations and emerging trends in science, technology, education and business among other economic sectors. Studies have shown that so far there is relatively low impact of innovation, science and technology in transforming education and business norms and practices especially in low-income countries.

As such, there is need to integrate important aspects of science, technology and innovation (STI) into education and business systems because they have played a key role in responding to the COVID-19 pandemic and are essential for effective response to and recovery from the pandemic effects in low and middle-income settings and the unprecedented socio-economic crisis it has triggered. The key question is: *what should be done in helping future managers learn how to deal with turbulent and post turbulent times?* Therefore, re-thinking and re-positioning research and innovation science, technology, education and business during and post turbulent times is the only inclusive and empowering approach which should be as a means of addressing the urgent turbulence and instabilities faced as well as, a way of re-orienting the development innovation and technology in order to curb the anticipated challenges.

The Covid 19 Pandemic Turbulence
The Corona Virus 2019 pandemic christened by the World Health Organization (WHO) as covid-19 is a worldwide calamity. The disease has resulted in many deaths as well as necessitating restrictions of movement and lockdown in many countries. Most importantly, it has affected the education sector in such a way that, important activities in the institutions cannot continue to be carried out in the usual way. As a result, some people have adopted the use of the word new normal to describe how things are now done in the society. Therefore, just like educational processes of teaching and learning were been affected, so the science, innovation and research activities are done would have to attract a new approach. The pandemic is believed to be caused by a virus called severe acute respiratory syndrome corona virus - 2019 or SARS-CoV-2. Although its origin has not been definitively ascertained but it may possibly have originated from the wet animal market in Wuhan in Hubei province, China, in December 2019.

There are opinions that, it is contacted when it enters the body through the nose, mouth, or eyes, attaches itself to cells in the respiratory tract (airways from nose to vocal chords), and can spread to lungs and if not cured in good time, it can lead to death. It is also known that the elderly people and others with low immunity are more vulnerable to the attack by Covid-19. This explains why precautionary measures such as use of sanitizer, hand washing, quarantine, isolation and social/physical distancing have been widely adopted by the WHO and the Government of various countries. Some countries even went to the extent of declaring total lockdown while in other countries, dusk till dawn curfew and restrictive movement to prevent spread of the disease was declared. Rather than to disbelieve its existence, people have not only recognized it but they are as well concerned about how to prevent contracting it as well as developing coping strategies to mitigate its impact in all areas of human endeavor including the education sector. The purpose of this research is to focus on rethinking education, science and innovation as well as technological changes in the present turbulence and beyond the Covid 19 pandemic era. However, addressing these issues require openness to non-traditional approaches in management of all the interrelated aspects in the education, entrepreneurial and technological world.

Using management theories to characterize and understand the nature of turbulence:
In order to characterize, address and understand the nature of turbulence and its effect on the current state of innovation and technological affairs, there is need to explore the contingency theory (Bradley & Heller, 2014). A contingency theory is an organizational theory that claims that there is no best way to organize a corporation, to lead a company, or to make decisions. Instead, the optimal course of action will depend on the internal and external situations. According to

Karim, Carroll & Long (2016), technological and environmental uncertainties and responses are based on resource dependency and intra networks as a basis for organizational innovation in crisis circumstances (Lundberg, Andresen & Törnroos, 2016). In education sector, development new curricula, content alongside enhancing remote learning has been a global trend in an effort to fit the changing times.

Management educators have already given some thought to the content and processes, in and out of the classroom, that are appropriate for changing times. Interesting recent examples include re-examination of the case method and the legitimacy of business schools (Bridgman, Cummings & Mc Laughlin; 2016), integrating sustainability issues and study abroad experiences in the curriculum in order to develop globally aware and responsible managers (Sroufe, Sivasubramaniam, Ramos & Saiia, 2015). Contingency theory in itself focuses on developing new management approaches to emerging global trends caused by the current turbulence (Kark, Preser & Zion-Waldoks, 2016).

Covid- 19 and Technology in Educational Management
There may be a need for all the global stakeholders to develop resilience in turbulent times in as much as it can take many forms. Practically, organizational and personal resilience are argued to be related, and rely on 'soft skills' as well as adequate resources to enable change (Richtnér & Löfsten, 2014). However, there needs to be some concern for how this feeds into moral decision making in responses to turbulence. Ethical resilience builds on critically reflexive understandings of the existential, relational and moral character of leadership and management (Cunliffe, 2016), so that one is aware of the need to change while remaining aware of the consequences and effects of change on others.

Focusing these insights more clearly on management education may require developments of critical pedagogies and multidisciplinary approaches, especially if we expect all the sectors to be adaptive and creative in the face of complex challenges and, perhaps agents of positive social change (Welsh & Dehler, 2013). There is considerable scope for new work in this area.
Among the emerging questions as we characterize and understand the nature of turbulence would be;
- What kinds of (emerging) theories better describe or predict the effects of turbulence – and how can we adopt them effectively?
- How should the emerging global turbulent trends be perceived? Are there useful cases, exercises and simulations that address turbulence and its effects on scientific innovations, business and educational management and organizations? How should this be best addressed?
- How should the stakeholders be educated to be able to adapt themselves and their sectors and organizations in turbulent times?
- What kinds of leadership are important in what may feel like a 'post fact' climate that disconnects evidence and influence?
- As part of stakeholders, how can we thrive and survive in such difficult times presently and in future?

Addressing these questions is likely to bring benefits from thoughtful, high-quality contributions in many perspectives with a thought of improving mechanisms, which could be directed towards coping up with turbulent trends and emerging issues.

The most recent turbulence, Covid 19 pandemic affected the operation of educational institutions in the most abrupt and disruptive manner. Kenya is one of these countries that shut down its schools, colleges and Universities through a presidential directive in mid-March 2020. Since then, over 10 million school going children and 7 million tertiary level students stayed home due to the pandemic. The aspect of school going children sitting idle in the countryside was socially disruptive and risky, not to mention the mess on the scheduled school and college academic activities and calendar. It also brought about uncertainties on when to open educational institutions and the scheduling of national examinations, UNESCO (2020). It is a common knowledge that the education sector was badly affected with the close down of schools/institutions of learning. Arising from the close down of schools, there has been a need to reshape the education system since learners could not access their institutions. The disruption however paved way for embracing and development of remote/online learning in an effort to strengthen innovation and technological advancement in education.

According to the United Nations assessment as at March 15, 2020, more than 400 million learners in Africa were affected by school and university closures all over the world as a result of Covid - 19. With this unexpected turn of events, there is therefore a monumental issue regarding what to do with these normally restless students that are stuck at home with their parents for hours and days on end. From indications, when schools are closed down, many students will have to remain at home for the remainder of the academic year. The only alternative left for learners therefore is 'home-schooling' or online learning.

The unexpected shut down of educational institutions and the consequences experienced during and in post COVID-19 era might not be isolated from the rest of the communities in which these schools exist and are part of. Whereas the government and other institutions have intervened into the schooling system to provide educational technology (EdTech) solutions to have learning continue through remote teaching and learning, communities are yet to come to terms on how to respond to the pandemic which has disrupted key aspects of their way of life, especially in the socio-cultural and economic realm. In particular, the realities of coping with the use of educational technology in learning of children at the home rather than school, managing the sick and dead, and breaking the social closeness to social distancing (Specifically, the reality of changing some cultural lifestyles that communities were accustomed to).

Universities play a very important role as leaders in teaching and learning, in education, research and technology through which they create prosperity, promote new cultural values, building new institutions of civil society and training and socializing people into a new social era (Ngware, 2020). These roles are important to all sectors and as agents of change and socio-economic transformation, as pointed out by Kaba & Lewis (Eds) (1990) who described education for Africa as, a process of liberation and emancipation of the mind. A rising of the consciousness, the growth of the African personality and the acquisition of new skills for proper dominion and the improvement of society and self-.

The kind of research universities undertake enables critical diagnosis and evaluation of the level of community development and, based on relevant theoretical models created as a result of such research, suggest strategies for further community development. University as a bank of knowledge often performs the role of initiator of new ideas which when shared with communities bring about the desired social transformation, Clark (1998). With the advent of COVID-19, and the resultant expectations of changes in behavior, relationships and activities, communities are delegated with new tasks and are therefore, expected to adjust and review their cultural values and modes of operation.

This implies that community members are expected to transform themselves through acquisition of new value systems, knowledge and skills to be able to cope with the current impact of the COVID-19 pandemic and its subsequent ramifications in the future. The mission of the University and its recognition in society suggest that in addition to offering formal education, training and research, it should also be called upon to enhance its services in community outreach geared towards improving skills and competencies and transforming its cultures and value systems. In recognition of this, I propose that stakeholders need to mitigate the Effects of the COVID-19 Pandemic on Teaching/Learning process and environment. In addition, it is necessary to ensure the safety of education stakeholders through prevention, control and management process. My key question therefore is as educators, ***what should we be doing, and helping future managers learn how to do, to deal with turbulent times?***

Innovation in Distance Education
An innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption. Innovation is therefore considered central in ODL because of the following reasons:
- Need to acquire and adopt the use of solar panel to power computer and phones in the rural areas
- Use of satellite to ensure internet access for users in the rural communities
- Changing needs of the learners in the 21st century
- Dynamism and the rate of the technological development across the world
- Era of Mass Open Online Courses and Open Educational Resources
- Era of the need to create job and promotion of self-employment
- Era of the use of social media for learning like in skype, WhatsApp, Facebook, Hang out, twitter, Instagram etc.
- Need to cope with the world challenges such as era of Covid 19 pandemic

Business and Economics in Turbulent times

Turbulences are becoming common phenomena in today's business world. Within the entrepreneurial space, business organizations faced a great challenge because of Covid-19. First, the formal way of trading was interfered with as countries were urged to embrace online orders and deliveries. The turbulences hit the businesses sector in uneven ways, leading to global disconnectedness and economic destabilization. There is no gain saying in the fact that, Education managers will have to seriously consider how to change the way and type of research, which are carried out. In addition, in the circumstance of today, it is obvious that institutions of learning will have to re-introduce and emphasize the innovative research that is driven by information and communication technology.

A study by Omeltchenka and Armitage (2006) emphasizes on the importance of changing leadership practices and tactics, in the changing economic times so as to fit in the new global approaches, which are more appropriate for the market-orientated environment. In as much as the business world is struggling with resource scarcity, the resource-based approach as viewed by Klimanov & Tretyak (2019) on linking the business model research and marketing in a new network-based approach to business model analysis, stresses on the fact that it is first important to make the most effective use of those resources available. This is because, it is vital in determining the way in which the company or individual is able to use its resources. Thus, in turbulent times, countries are forced to make strict choices between alternative investment plans.

For instance, during the Covid 19 pandemic, business managers in the Sub-Saharan Africa often depended on the formal business education, skills and technology in order to guide in employing managerial tools in order to cope up with the development of their companies and organizations, (Nakpodia et al., 2018). Resource scarcity is also seen as the low level of managerial knowledge though this does not necessarily mean low business performance but the competitiveness in the business world.

Therefore, the role of research and innovative technology has radically changed the manufacturing processes carried out by most companies during the pandemic and other occasional turbulences in order to save businesses by investing in a machine rather than a workforce of people. Other than protecting financial data, helping in making business decisions and other information, businesses, which have embraced technology, have been enabled *businesses t*o reach more customers in less time than usual. This means that with the new technological development of online platform trading and business transactions, many businesses will be able to reach and serve more customers than before.

Developing Adaptive and Sustainable Approaches to Education, Business and Science Innovation

Educators work in complex situations when it comes to culture, relationships, and decision-making processes including navigating the system while dealing with constant changes and challenges both in school and system levels (Clarke & Dempster, 2020; Tintoré et al., 2020). No one expected the level of educational disruption and turbulence caused by COVID-19, which goes far beyond previous challenges, circumstances, emergencies and crises (Arar, 2020; Macklin, 2019; Mutch, 2015; Tipler et al., 2018). However, schools and higher education were affected deeply by COVID-19 pandemic, many voices requested educational leaders to develop plans to continue with education/ schooling during the period of necessary physical isolation and system disruption. Governments' responses varied from closing schools, to selecting online teaching, and reaching to blend learning (Alhouti, 2020; Anderson & Hira, 2020; Netolicky, 2020; Pollock, 2020).

The current pandemic era caused a huge pressure to use technological means not only for teaching and delivery, but also for leading and managing schools virtually. This generation of school leaders has been forced to confront a number of significant crises. For example, over the last two decades, school leaders have been called to navigate the tragic circumstances surrounding school shootings

(e.g., Sandy Hook, Parkland, and Santa Fe), the devastating effects of hurricanes e.g. Katrina, Harvey, and Sandy, and the general upheaval caused by societal turmoil like teacher walkouts, racial injustices, and school closures. Yet, because of the severity and nuance of these crises, leaders might benefit from specialized preparation to traverse the sundry conditions associated with leading a school and school community during a pandemic. Nevertheless, during the COVID – 19 pandemics, schools would not physically reopen and some transitioned to online platforms to reduce the rapid spread of the virus. As schools were asked to close, principals were tasked with serving a diverse range of roles such as chief communicator to school communities, provider of technology, launcher of an online learning platform, logistics manager for food distribution, tracer of the virus, and emotional support for anxious staff, students, and caregivers.

The abrupt interruption of school quickly shifted to the "new normal," where the stressors associated with school principal ship increased dramatically. This is particularly significant, as even before the pandemic, scholars had drawn attention to the rising number of principals leaving the profession due to professional burnout attributed to increasingly demanding working conditions (Darmody and Smyth, 2016; Wang et al., 2018; Carpenter and Poerschke, 2020).
The COVID-19 pandemic led to the need in the preparation of today's school principal ship to enable them navigate extreme crises and how they look after themselves and their wellbeing in ways that may curb the chronic stress that often leads to professional burnout. It is critical to understand how school principals can successfully practice their new day to- day practices after experiencing turmoil under the COVID- 19 pandemic.

Kenya's Response to COVID-19 among other Turbulences

Was the government's initiative successful? It was a bold step though accompanied by several challenges. Firstly, the learning gap increased since most of the learners were excluded from online education due to a lack of accessibility to the internet and reliable electricity. Additionally, most parents were not able to foot the school-related expenses such as learning materials and daily bundles. This further widened the gap in that they were disadvantaged as compared to their counterparts who could afford it. Even in the areas where electricity and technology do exist, the cost of the internet is inhibitive (MOE, 2020).

The Kenya Institute of Curriculum Development geared its resources in centralizing teaching and learning resources making them more accessible to learners. This was a bold step though of course hampered by the lack of enough resources to meet the cost of the internet. This resulted in the students who had the accessibility to prioritize the materials to download which limited them. The private schools engaged their learners in virtual learning but of course, just to keep them busy because they could not be admitted to the next class.

In the business sector, it was reported that approximately 41.3% of businesses reported that they were temporarily closed because of COVID-19. A far smaller number—1.8%—reported that they were permanently closed because of the pandemic. Online trading was advocated for, in order to minimize physical contacts. Imports and exports were carried on but with strict adherence to stringent hygiene and strict adherence to health guidelines and measures. Food businesses needed to ensure that adequate sanitary facilities are provided and that the food workers thoroughly and frequently wash their hands. Soap and water is adequate for hand washing. In the annual report by

the ministry of tourism and wildlife (GoK, 2020), the government was forced to set aside ksh.500 million (USD 4.7 million) to help and shield the tourism sector from the adverse effects of COVID-19. There was provision of soft loans and to hotels and related establishments through the Tourism Finance Corporation (TFC) in order to promote their operations as well as restructuring of business operations. In addition, the government through the Central Bank of Kenya announced the suspension for a period of twelve months, of the listing of negative credit information for borrowers with loans below Ksh. 5 million, whose loans were performing previously, this, came with a heavy impact on the revenue collection and interest accumulation by the lending institutions, especially during the turbulent times when the rate of cash flow was hampered (Noor, 2020).

Rethinking the Type of Research Now and in the Future

Globally, the kind of challenges, which human beings face in the society coupled with the aspirations and influence of ICT in all areas of human needs, are the determinants of the kind of innovation that are undertaken. It is therefore expected that higher education institutions should take up leadership to introduce innovative research. The kind of innovation should also encompass the following:

- Technology that would ease communication and interaction
- Promote lifelong learning
- Enhance the acquisition of functional skills to secure or create employment in the society
- Explore the knowledge of theories to facilitate practice
- Be all-inclusive to be able to address the issues of gender equality with concerns for the migrant population, the displaced people, prison inmates and women in the isolation.
- Promote networking among scholars to ensure that there is quality in the delivery services that will promote use of valid information and prevent plagiarism since learners will be aware of what is done in other parts of the world.

CONCLUSION

In line with the turbulence times facing the current world, this library-based paper found out that integration of distance learning into the conventional face-to-face mode so as to reduce resistance to open and distance learning (ODL) innovation. In as much as there is need to channel more resources to innovative science and technology, organizations that need to develop their resources must consider enhancing research and use of relevant findings for effective policy implementation that favor minimizing effects caused by the turbulent aspects. In fact, by developing guidelines on innovative research and prioritizing areas of relevance, collaborative efforts are most likely to save the world from some of the turbulences. Rethinking education and research are indeed important now and in the future after the era of Covid 19 pandemic and it is noteworthy to state that ODL has emerged as a redeeming feature. This is evident considering the various stages in the development of ODL from correspondence model to the present stage when technology has intensively been utilized. It is however, incumbent on the managers and practitioners in the education sector to possess useful characteristics of leadership to be well focused and to ensure that their energy is directed to what would enhance the development of ODL today and in the future. It is also obvious that, for many years to come, ODL may have to continue to steer the ship of leadership in the dissemination of knowledge with the use of innovative research so that teaching and learning can continue and thereby make the world a secured and better place.

REFERENCES

Alhouti, I. (2020). Education during the pandemic: the case of Kuwait. *Journal of Professional Capital and Community*, 5(3–4), 213–225. https://doi.org/10.1108/JPCC-06-2020-0050

Arar, K. (2020). Understanding The Educational Administrator's Role in a Turbulent Ethnic Education System., 00(00), 1–16. https://doi.org/10.1080/15700763.2020.1757723

Bridgman, T., Cummings, S. & Mc Laughlin, C. 2016. Re-stating the case: How revisiting the development of the case method can help us think differently about the future of the business school. *Academy of Management Learning and Education, online early,* doi: 10.5465/amle.2015.0291

Burch, G., Burch, J., Bradley, T. & Heller, A. 2014. Identifying and overcoming threshold concepts and conceptions: introducing a conception-focused curriculum to course design. *Journal of Management Education*, 39(4): 476-496.

Clark, B, R. (1998). Creating Entrepreneurial Universities: Organizational Pathways of Transformation. IAU Press.

Cunliffe, A.L. 2016. "On becoming a critically reflexive practitioner" redux: what does it mean to be reflexive? *Journal of Management Education*, 28(4): 407-426.

GoK (2020). Impact of Covid-19 on Tourism in Kenya: Measures Taken and Recovery Pathways. National Tourism Risk and Crisis Management Committee

Goldfrank, B. (2020). The World Bank and the globalization of participatory budgeting. *Journal of Deliberative Democracy*, 8(2).

Kaba, B.K. and Lewis, C.A.R. (Eds) (1990). Relevant Education for Africa. Younde: Professors World Peace Academy (PWPA).

Karim, S., Carroll, T. & Long, C. 2016. Delaying change: examining how industry and managerial turbulence impact structural realignment. *Academy of Management Journal*, 59(3): 791-817.

Kark, R., Preser, R. & Zion-Waldoks, T. 2016. From a politics of dilemmas to a politics of paradoxes: feminism, pedagogy, and women's leadership for social change. *Journal of Management Education*, 40(3): 293-320.

Clarke, S., & Dempster, N. (2020). Leadership learning: the pessimism of complexity and the optimism of personal agency. *Professional Development in Education*, 00(00), 1–17. https://doi.org/10.1080/19415257.2020.1787196

Klimanov, D., & Tretyak, O. (2019). Linking business model research and marketing: new network-based approach to business model analysis. *Journal of Business & Industrial Marketing*.

Macklin, J. (2019). Turbulence, dilemmas and leadership: A case study of an English School after academisation.

Ministry of Education (2020). Education Reports on School Re-opening and Containing Measures of Covid 19 Pandemic

Mutch, C. (2015). Leadership in times of crisis: Dispositional, relational and contextual factors influencing school principals' actions. *International Journal of Disaster Risk Reduction*, 14(September 2010), 186–194. https://doi.org/10.1016/j.ijdrr.2015.06.005

Nakpodia, F., Adegbite, E., Amaeshi, K., & Owolabi, A. (2018). Neither principles nor rules: Making corporate governance work in Sub-Saharan Africa. *Journal of Business Ethics*, *151*(2), 391-408.

Netolicky, D. M. (2020). School leadership during a pandemic: navigating tensions. *Journal of Professional Capital and Community*. https://doi.org/10.1108/JPCC-05-2020-0017

Ngware, M (2020). What we can do to enhance learning during this crisis. The Standard, Saturday, May 9, 2020. Page 24 Scott, D and Usher, R (1996). Understanding Educational Research.Psychology Press, London. UK

Omeltchenka, A. E.; Armitage, A. 2006. Leadership prototypes: a Russian perspective, *Baltic Journal of Management.* 1(3): 315–338.

Pollock, K. (2020). School Leaders' Work during the COVID-19 Pandemic: A Two-Pronged Approach. ISEA, 48(3), 38–45.

Richtnér A. & Löfsten, H. 2014. Managing in turbulence: how the capacity for resilience influences creativity. *R&D Management*, 44(2): 137-151.

Sroufe, R., Sivasubramaniam, N., Ramos, D. & Saiia, D. 2015. Aligning the PRME: how study abroad nurtures responsible leadership. *Journal of Management Education*, 39(2): 244-275.

Tipler, K., Tarrant, R., Tuffin, K., & Johnston, D. (2018). Learning from experience: emergency response in schools. Natural Hazards, 90(3), 1237–1257. https://doi.org/10.1007/s11069-017-3094-x

UNESCO (2020). UNESCO Covid – 19 Education response: Education sector issue notes No. 8.1 April 2020. Paris: UNESCO

Welsh, A. & Dehler, G. 2013. Combining critical reflection and design thinking to develop integrative learners. *Journal of Management Education*, 37(6):771-802

E-Strategy Implementation and Future Learning Outcomes in Universities in Kenya

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ABSTRACT

Advancement of e-technology brought about opportunities for learning institutions to deliver education regardless of the time and physical location. The focus on the use of e-technology strategies greatly increased as universities continues to operate in a very dynamic and competitive environment. Universities deal with an increasingly competitive market forces because of the diverse student categories, their changing needs and expectations as well as heightened demand for new and different programs and services. Despite many initiatives to support successful e-technology strategy implementation, most of them are not fully realized, they completely or partially fail due to various implementation barriers. The purpose of this concept paper is to establish barriers to e- strategy implementation and propose possible solutions for improvement of future e learning outcome. An in-depth review of theoretical and empirical literature on e-strategy implementationbarrier factors was conducted from papers published between 1990 and 2020. This timeline was appropriate since the existence of the World Wide Web which became pervasive within this period was deemed essential to most modern e-learning solutions. A conceptual model comprising successful solutions to e-learning strategyimplementation is proposed to help e-learning managers to successfully implement e-learning in the universities. Propositions are made to motivate further research to enhance the body of knowledge on e- strategy implementation for the achievement of future learning goals of students in universities.

Key words*: e-learning strategies, implementation barriers, e-learning outcomes*

INTRODUCTION

Background

Advancement of e-technology has brought about opportunities for learning institutions to deliver education regardless of the time and physical location. Universities deal with an increasingly competitive market forces because of the diverse student categories, their changing needs and expectations as well as heightened demand for new and different programs and services. The focus on the use of e-technology strategies has greatly increased as universities continue to operate in a very dynamic and competitive environment to achieve e-learning outcomes.

According to Gyambrah (2007), Njenga(2011), Kasse and Balunywa(2013), and Kituyi and Tusubira (2013),e-learning technologies encompass various tools such as the internet, computers, World Wide Web (WW),television, radio, Compact Discs (CDs),Digital Versatile Discs(DVDs), video conferencing, mobile technologies, web-based technologies, and electronic learning platforms. Therefore, for the purpose of this paper, e learning refers to the utilization of new e-technologies, including synchronous, asynchronous, and learning management systems (LMS), in order to facilitate learning and provide support for learners.

It includes the delivery of content via the Internet, intranet, audio and videotapes, satellite broadcast, interactive TV and CD-ROM to ensure successful blended e learning for successful learning outcome in Kenyan universities. E-strategy implementation therefore, refers to deliberate identification and implementation of plans identified through SWOT analysis, which could be

short term, below five years or long term, above five years to set programs that will be used by a university to achieve predetermined learner goals achievement.

The way in which teaching, learning, and administration of education undertakings are being conducted in universities has changed (Tossy, 2012; Lwoga & Komba, 2015). For example, (Pappas, 2013) observed that e-learning cuts down instruction time by up to 60%). Furthermore, it was estimated that about 46% college students are taking at least one course online in Middle East countries (Shivaraji et al., 2013). Additionally, a study conducted by Britain's Open University has found that e-learning consumes 90% less work in teaching and learning than traditional courses (Zhu & Mugenyi, 2015). e-learning offers flexibility in terms of space and time of delivering or receiving learning materials, (Al-adwan & Smedley 2012). Moreover, Allen and Seaman (2008) point out in their 2007 survey of US universities that a 12.9% growth rate for online enrollments compared with 1.2% of the overall student population. According to Pappas, (2013), a report released by IBM, utilization of e-learning tools and strategies in UK universities has potentially boosted productivity by up to 50%. In Africa context, the extent of uptake of e- learning in learning in HEIs in South Africa only 2.15% learners never or rarely used a computer to undertake any of the 18 computers-based learning activities (Bagarukayo & Kalema, 2015). Additionally, Kasse and Balunywa (2013) in their study conducted in Uganda, the results indicated that e-learning had facilitated delivery of learning materials by 80/% compared to traditional method. However, the study further indicates that e-learning is not fully implemented and utilized effectively in developing countries.

Vershitskaya, Mikhaylova, Gilmanshina, Dorozhkin, and Epaneshnikov (2020) emphasizes that despite the potential of a learning management system to support e-learning, most e-learning strategies are not fully realized, they completely or partially fail. E-Learning strategies if well implemented help in the achievement of future learning outcomes such as enhancing students critical thinking, provide flexible learning, timely course completion, reduce costs, perceived learner satisfaction and increase efficiency of institutions. There is inadequate coverage of factors in various existing models for successful implementation of e-learning strategies in developing countries (Bourlova and Bullen, 2018). Therefore, there are still concerns however, regarding the way e-learning strategies have been implemented as evident in universities, precisely in Kenya (Van der Klink &Jochems, 2004; Munguatosha et al., 2011).

Thus, understanding the strategic role, benefits, barriers of e-strategy implementation, their effect on future learning outcomes and how to turn around barriers into successful e-strategy implementation barriers forms the basis of this study. Therefore, Factors of e-strategy implementation, those focused on in this study; technology characteristics, user characteristics, pedagogical attributes, institutional characteristics, social attributes, environmental attributes and technical support (Kisanjara, 2020) pose either as successful factors of implementation or as barriers depends on the potential adopters, their unique context of application and the type of innovation. Accordingly, the study focuses on the investigation of factors that influence e-strategy implementation and its effect on future learning outcomes in the Kenyan Universities. Additionally, an e-strategy implementation model has been proposed, to help e-learning managers to implement e-learning strategies successfully in the universities. The model has been borrowed from the existing model for e-implementation, (Kisanjara, 2020) and improved by adding technical support factors to make it more insightful to the institutions.

The focus on the use of e-technology strategies has greatly increased as universities continue to operate in a very dynamic and competitive environment. Universities deal with an increasingly competitive market forces because of the diverse student categories, their changing needs and expectations as well as heightened demand for new and different programs and services.Despite the many e-learning strategies that have been introduced in the universities in developingcountries, learning outcome has become a major challenge, which could be attributed to inadequate or unsustainable e-strategies implementation and or poor change management during the implementation process (Makokha & Mutisya, 2016; Chawinga, 2016). Furthermore, Mukirae, (2020) agrees that key institutional challenges facing the e-learning programs are delayed delivery of study materials and inadequate learner support services that include inadequate academic support due to lecturers failing to facilitate units online and poorly designed course materials. He recommends that universities need to come up with e-strategies that will strengthen learner support mechanisms. Inadequate ICT and e-learning infrastructure, poor internet bandwidth, lack of skills and human capacity, insufficient change management, inadequate content design and delivery hinder successful e-strategy implementation (Tarus et al., 2015). Most change processes fail and failure rates may be as high as 93% and one of the most commonly cited reasons for failure of institutional change resistance of employees to organizational change (Decker et al. (2012), Without successful e-strategy implementation programs, universities may be faced with decreasing market share and unsuccessful learner outcome. Accordingly, the study focuses on the investigation of e-strategy implementation factors; technology characteristics, user characteristics, pedagogical attributes, institutional characteristics, social attributes, environmental attributes and technical support and its effect on future learning outcomes in the Kenyan Universities.

The purpose of the study will be to establish the impact of e-strategies implementation factors on future learning outcomes in the Kenyan universities. The study has proposed a conceptual model linking e-strategy implementation and learning outcomes, to help e-learning managers to successfully implement e-learning strategies in the universities in future recommendations for future empirical testing of the propositions in the paper has been suggestedand the finding used to help e-managers in successful e-strategy implementation.

THEORY AND CONCEPTUALIZATION

E-Learning Technologies are technologies, which are based on the backbone of ICT infrastructure. For this reason, the ICT adoption models are useful in explaining E-Learning Technologies adoption. Two models which explain and predict user behaviors and intentions to adopt technologies have been discussed and appropriate factors that determines successful e-strategy implementation derived, (Kituyi, & Tusubira, 2013; Njenga, 2011). They include: technology acceptance model (TAM) Davis (1989) and the TOE framework (Tornatzky & Fleischer, (1990)

Technology Acceptance Model

Technology Acceptance Model (TAM) theory is a model that resulted from the theory of reasoned action by Fishbein & Ajzen (1975) in psychology research. It suggests that when users are presented with a new technology, anumber of factors influence their decision about how and when they will use it, namely: PerceivedUsefulness (PU) and Perceived Ease of use (PEOU (Legris, Ingham, & Collerette, 2003). In TAMPerceived usefulness (PU) is conceptualized as the degree to which a user believes that using a particular innovation would enhance his or her job performance while perceived ease of use (PEOU) is the degree to which a user believes that using a particular innovation would be free of physical and mental effort (Davis, 1989).). Many studies show that

TAM has been modified and extended extensively and has proven to be strong in the areas of management information systems, information systems and information technologies adoption (Mao & Palvia, 2006; Abbad et al., 2009; Munguatosha, 2011). Asianzu (2012) reported that several studies found significant statistical results for the high influence of perceived usefulness on behavioral intention to use a specific system.

ICT adoption and diffusion has been studied in detail lately by researchers in the information systems area. The Technology Acceptance Model The technology acceptance model (TAM) is one of the most famous model of innovation acceptance used to test user acceptance of information technologies for example; the adoption of Microsoft offices like word processing, spreadsheet, PowerPoint, (Maslin, 2007) and other technologies email , e-commerce , e- collaboration, and blackboard (Maslin,2007). One of the outstanding weaknesses reported about TAM is its inability to reveal determinants of its independent variables (perceived usefulness and perceived ease-of-use) Chuttur, (2009). It can be studied at two levels: organizational level and at the individual level. If the unit analysis is an individual, emphasis is on the acceptance of technology. (Koohang & Du Plessis, 2004).

Technology-Organization-Environment Framework

Based on Contingency Theory of Organizations, Tornatzky and Fleischer (1990) developed a framework called Technology-Organization-Environment (TOE) framework. According to Technology Organization Environment theory, an organization functions along three dimensions of Technology, Organization, and Environment (TOE), which influence the organization's ability to adopt or reject new technology (Lee, Wang, Lim, & Peng, 2009). The Technology dimension includes the factors of cost, reliability, compatibility, complexity, and performance expectancy. Human and financial resources, innovativeness, and competitiveness are factors in the organizational dimension. The Environment dimension encompasses the factors of industry, competition, government, suppliers, and customers. These factors may negatively or positively influence the decision to adopt a technological innovation. In this paper, the main challenges to implementation of E-strategy from Technology point of view will include cost, reliability compatibility, complexity, and performance expectancy. The TOE framework has been utilized for studying different types of technological innovations. More broadly, it has been tested in the context of information technologies Thong, (2002); electronic data interchange (EDI), E-business, HRIS, KMS, Mobile-commerce, E-commerce, ERPand Lu, 2010.

Based on the reviewed theoretical and empirical literature, the following conceptual model (Figure 1) isproposed for empirical testing.
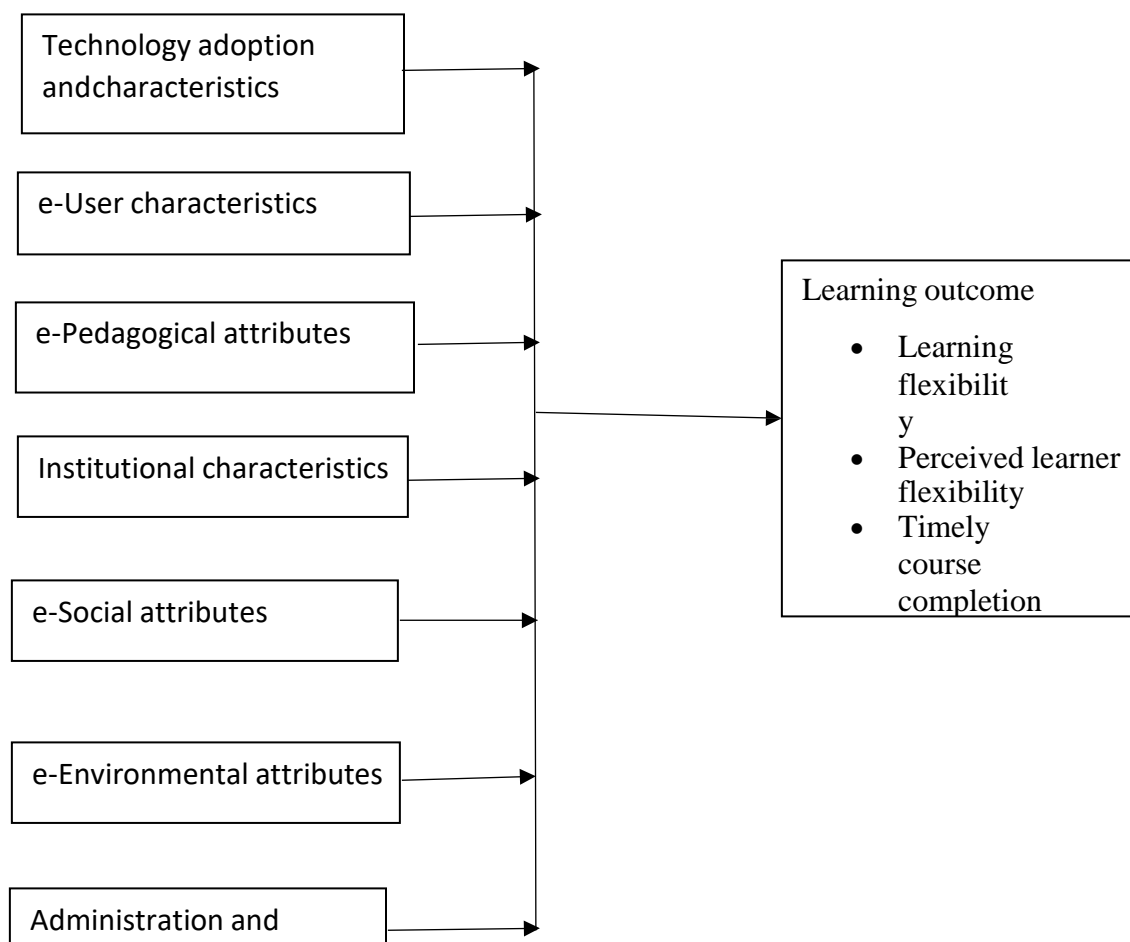
Figure 1 Conceptual model

E-Strategies and Learning Outcomes

Various scholars have cited factors that influence e-strategy implementation within education setting. They include technological characteristics (Njenga, 2011 and Munguatosha et al., 2011), user characteristics (Taha, 2014: Ordonez, 2014). Pedagogical attributes (Anderson & Gro̎nlund 2009: Mtebe and Raisamo, 2014), institutional characteristics (Tarus and Gichayo, 2015; Madar and Wills, 2014; Khan, 2005; Dabbagh, 2005), social attributes (Fresen, 2010; Busaka et al., 2016) and environmental characteristics (Teo, 2011; Zhu and Mugenyi, 2015; Yew and Jambligan, 2015 and technical support. The applicability and its positive or negative influence on e-learning strategy implementation depend on the potential adopters, their unique context of application and the type of innovation.

Technology characteristics

According to a study conducted by Njenga (2011) on e-learning employing the theory of DOI and UTAUT. The findings revealed that factors such as perceived usefulness, self-efficacy, demonstrability, perceived ease of use complexity, compatibility were factors influencing e-strategy implementation positively. Additionally, Munguatosha et al. (2011) studied social networked learning adoption in universities in Tanzania employing Vygotsky's socialdevelopment theory. The findings indicated that those ICT infrastructures and system interactivitywere among

the technological characteristics that were found to affect the social networked learning adoption and implementation. However, there are no common technological characteristics in literature to influence e-strategy implementation (Njenga, 2011). Therefore, e- learning as one of educational technology need to be effectively implemented and not relatively complex to avoid users 'resistance to use. A study conducted by Ndonje (2013) on e-learning adoption in Tanzania argued that the technological characteristics includes complexity; compatibility and relative advantage. These factors may negatively or positively influence the decision to adopt a technological innovation.

> P_1: There is a significant relationship between technology characteristics and students' learning outcome in the Kenyan universities

User Characteristics

It is widely accepted that user characteristics influence the way e-learning strategy is implemented, perceived, and used in educational perspective. Taha (2014) conducted a study to investigate the factors for e-learning implementation in secondary school in the Kingdom of Bahrain employing DOI theory. The study revealed that student characteristics (computer skills, motivations, and self-efficacy), teachers characteristics (attitudes, control of technology and pedagogy, and teaching style), technological (quality and effectiveness of infrastructure), design and content (perceived ease of use, quality content) influence significantly e-strategy implementation. Ordenez (2014) conducted a study on predicting international critical success of e-learning by comparing in four countries including China, Spain USA, and Mexico. The finding reveals that from learner's perspective, course design, learning content, prior knowledge are significant predictors in learner's success in using e-learning. He further emphasized that from the instuctor's view course design, instruction, learning platform, learning interaction, and learning content are factors affecting an effective online teaching and learning process. Park (2009) argues that user attitudes towards e-learning significantly influence e-learning strategy adoption and implementation. Likewise, Zewayed (2012) studied users' adoption of e-learning among 926 secondary schools in Bahrain and found that self-efficacy and motivation were critical factor of e-learning strategy implementation.

> P_2: There is a significant relationship between user characteristics and students' learning outcome in the Kenyan Universities

Pedagogical Attributes

Pedagogical attributes play crucial role in influencing implementation of e-strategy to improve accessibility, efficiency and quality of teaching and learning. Tarus and Gichayo (2015) confirmed that users' skills on e-learning, adequate and quality e-learning content are important pedagogical attributes, which significantly influence successful e-learning strategy implementation. Mtebe and Raisamo (2014) highlighted that quality and appropriate course contents are determinants of the e-learning implementation. Pertinent training provided to the e-learning users particularly lecturers, enables them to develop quality e-learning content, which has positive effect on students' satisfaction towards the e-learning system use. E learning involves teaching by considering course curricular, contents and teaching strategies as these are pedagogical attributes. Ndonje (2013) argues that since e-learning is quite different from traditional settings, pedagogical attributes need to be designed specifically to fit the e-learning in order to influence e-strategy implementation significantly. (Njenga & Fourie, 2010) points out that one of the causes of failure of many e-learning projects in educational context is due to resistance to change among e-learning users.

This is attributed to inadequacy in considering pedagogical issues when implementing e-learning. In this regard, pedagogical attributes in teaching and learning are inevitable when planning to integrate any e-technology in educational setting.

> P_3: There is a significant relationship between pedagogy attributes and students' learning outcome in the Kenyan universities

Institutional Characteristics.

Institutional characteristics often are major factors for successful implementation of e-strategy implementations if clearly defined. Studies (Tarus and Gichayo, 2015; Njenga, 2011; Madar and Wills, 2014; Khan, 2005; Dabbagh, 2005) agrees on theoretical and empirical facts of a significant influence of institutional characteristics in the success of e-learning implementation. For instance, Tarus and Gichayo (2015) studied influence of pre-condition factors on e-learning implementation among 525 respondents in Kenya universities and found that institutional characteristics had significant influence on e-leaning implementation. (Njenga, 2011) investigated factors influencing e-learning adoption and use in Eastern and Western using exploratory design. The findings revealed that institutional characteristics had significant contribution to e-learning implementation. Khan (2005) revealed that institutional characteristics such as budget, commitment, constructive communication and management support have significant influence in e-learning strategy implementation. Equally, Rogers (2003) revealed that constructive communication between the various stakeholders within institutions significantly influence on adoption and implementation of any innovation. Munguatosha et al. (2011) elaborated through their findings that self-efficacy, reliable technical and administrative support, infrastructure, system interactivity, adequate budget, accountability and flexible institutional structure were the factors found to affect the e-learning strategy implementation. These findings demonstrates that with inadequate institutional characteristics, the e-learning strategy implementation in education remain elusive and vise-versa. Thus, the institutional characteristics have the potential to improve formal and informal activities related to e-learning strategies implementation to support future e-learning outcomes.

> P_4: There is a significant relationship between institutional characteristics and students' learning outcome in the Kenyan universities

Social attributes.

E-learning through social attributes has a great potential to facilitate not only education activities but also social networks. Findings from scholars explained the influence of social factors in e-strategy implementation (Khan, 2005; Fresen, 2010; Busaka et al., 2016). Khan (2005) emphasizes that availability of social interaction; cultural interaction and increased motivation influence the e-learning implementation particularly the use of e-learning in teaching and learning. Application of social networking sites like twitter, blogs and provides opportunities for users to socialize chat and exchange their ideas while learning. Munguatosha et al. (2011). This then increases positive attitude towards e-learning adoption and use (Sridharan et al., 2008). Khan (2005) and Ghinea, (2013) argue that lack of consideration of social factors leads to a great challenge that influence negatively e-strategy implementation. Nunes and McPherson, (2007) argued that e-learning implementation in relation to social attributes have two views; student's interaction with learning materials and technologies and the social activity of exchanging and generating ideas. Thus, these views should be considered prior to implementation of e-learning through e-learning training and workshops.

P₅: There is a significant relationship between social attributes and students' learning outcomein the Kenyan universities

Environmental Characteristics.

Environmental characteristics influences e-strategy implementation differently, as general factor as well as specific factor. For instance, Yew and Jumbligan (2015) conducted a review of studies and discussed critical factors on e-learning implementation in Malaysia. They argue that environmental factor includes e-learning characteristics such as hardware and software necessary required for the operationalization of e-strategy implementation. In addition, Zhu and Mugenyi (2015) conducted a study employing SWOT analysis methodology on the integration of e-learning in Ugandan and Tanzanian universities. The findings revealed that internet connectivity, bandwidth, sustainable electricity are general environmental characteristics significantly influence e-learning implementation.

P₆ : There is a significant relationship between environmental attributes and students' learning outcome in the Kenyan universities

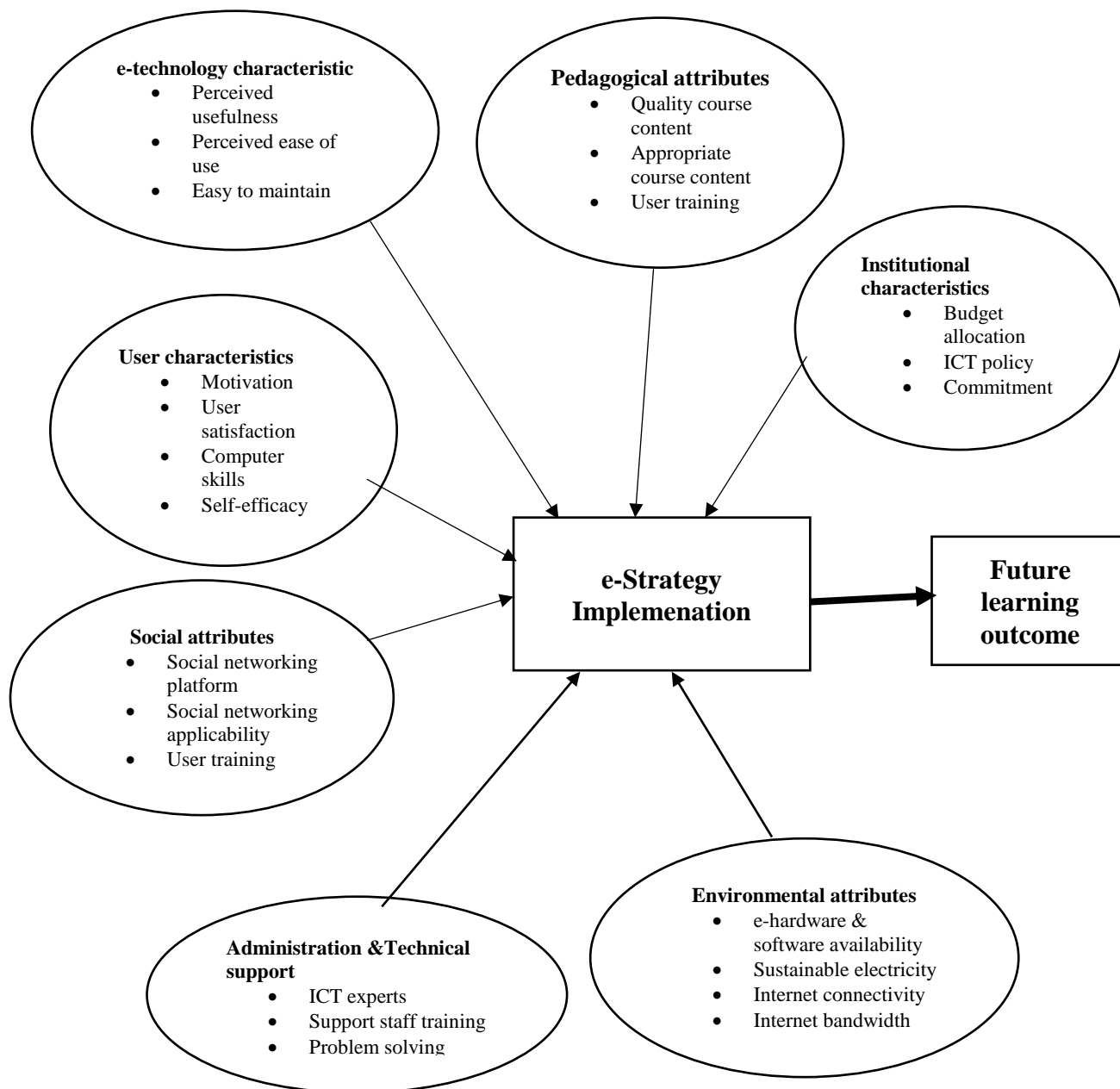### *Administrative and technical support.*

Mukirae (2020) carried out a study to establish the obstacles that hinder the success of Open and Distance Learning programmes at Kenyatta University. It was found out that key institutional challenges facing the programme are delayed delivery of study materials and inadequate learner support services that included inadequate academic support due to lecturers failing to facilitate units on-line and poorly designed course materials. The study recommended come up with strategies that will strengthen learner support mechanisms to address the institutional challenge. Teo (2011) argue further that inadequacy of technical support contributes significantly to failure of e-strategy implementation; the findings revealed that training skills and administrative support are specific important factors in influencing e-strategy implementation by surpassing lecturers to use the technology effectively. According to Yew and Jambulingan (2015), ICT support department significantly helps the lecturers to effectively use the e-learning. Hence, administration and technical support to both students and instructors is necessary to e-learning users for successful e-strategy implementation.

Thus, factors influencing e-strategy implementation are not unified globally as each studyhas conducted in different contexts, using different methodologies to investigate the e-strategy implementation. Njenga (2011), Painter-Marland et al. (2003) and Rogers (2003) conclude that although studies on implementation of e-learning strategies explain various factors, it is revealed that these factors vary depending on the type of innovation, the potential adopters, users, and their unique context of implementation. Besides, these factors are mainly limited on technology and institutional dimensions. Further, there are still unnoticeable empirical evidences in most recent studies in universities regarding factors influencing e-strategy implementation especially on administration and technical support (Nagunwa & Lwoga 2012; Sanga et al., 2013; Kisanga & Ireson, 2015). To cover the knowledge gap, this study determined factors influencing e-strategy implementation from wide dimensions; technology characteristics, technology adoption, users, pedagogical, institutional, social, environmental, and administration and technical support and how they influence future learning goals in the Kenyan universities.

P₇: There is a significant relationship between administration and technical support andstudents' learning outcome in the Kenyan universities

Consistent with the foregoing propositions, the model for proposed relationship between e-strategy implementation and e-learning outcomes is presented in Figure 2.

e-technology characteristic
- Perceived usefulness
- Perceived ease of use
- Easy to maintain

Pedagogical attributes
- Quality course content
- Appropriate course content
- User training

Institutional characteristics
- Budget allocation
- ICT policy
- Commitment

User characteristics
- Motivation
- User satisfaction
- Computer skills
- Self-efficacy

Social attributes
- Social networking platform
- Social networking applicability
- User training

e-Strategy Implemenation

Future learning outcome

Administration &Technical support
- ICT experts
- Support staff training
- Problem solving

Environmental attributes
- e-hardware & software availability
- Sustainable electricity
- Internet connectivity
- Internet bandwidth

Figure 2. Proposed conceptual e-strategy implementation model

Operational meaning of terms

Technology adoption and characteristics; the context has been borrowed from TOE and refers to the nature of the technology adopted after the institution's SWOT analysis. Technology dimension includes the factors of cost, reliability, compatibility, complexity, and performance

expectancy. Human and financial resources, innovativeness, and competitiveness are factors in the Organizational dimension. Environment dimension comprises of the factors of industry, competition, government, suppliers, and customers. These factors may negatively or positively influence the decision to adopt e-technological innovation.

Institutional factors include an organization's attributes such as its size, centralization, formalization, the quality of human resources, the complexity of the organization's managerial structure, and the number of resources available internally.

Environmental factors include the industry an organization is in, its competitors, its accessibility to the resources supplied by others and dealings with government. Depending on how well the institution adopts them, they can influence e-strategy implementation positively to achieve or otherwise.

Social attributes emphasizes that availability of social interaction, cultural interaction and increased motivation influence the e-strategy implementation particularly the use of e-learning in teaching and learning. Application of social networking sites like twitter, blogs and provides opportunities for users to socialize chat and exchange their ideas while learning. This then increases positive attitude towards e-learning adoption and use hence successful e-strategy implementation for achievement of goals outcome.

Pedagogical attributes need to be designed specifically to fit the e-learning to avoid resistance to change, in order to influence e-strategy implementation significantly. E-learning involves teaching by considering course curricular, contents and teaching strategies. Therefore, attributes such as user skills on e-learning and adequate and quality of e-learning are key for the achievement of goals outcome

User characteristics have been discussed at students' level, which includes computer skill, self-efficacy and motivation, and at teachers' level, that includes attitude towards e-strategy implementation, control of technological and pedagogical characteristics. If well implemented they can help to achieve positive goals outcome.

Administration and technical support factors focus on the plans by the university to ensure the availability of e-learning technical support specialists that have e-technological skills and capacity to handle students' queries and financial resource allocation for the tasks. An e-learning administrative support staff with strong technology and problem-solving skills understands the learning management system and the course development technologies should be able to take calls and emails from learners and either answers them or sends them to appropriate subject matter experts. An e-Learning System Administrator must have strong administrative skills and solid computer skills to assign user Ids and passwords, load courses into the LMS, review learner progress and send reminder emails and generate learning usage and progress reports or at least one of the performing both roles

Learning outcome

e-learning course flexibility whereby they can learn from anywhere, anytime and at their own pace, perceived learner satisfaction, timely course completion and cost reduction facilitated by the integration of all the e-strategies implementation factors.

CONCLUSION

Based on the theoretical and empirical review from various scholars, it is evident that e-strategy implementation factors; technology adoption and characteristics, user characteristics, pedagogical

attributes, institutional characteristics, social attributes, environmental attributes and technical support focused on in the paper have a direct influence on future learner outcome. The applicability of these factors to either positively or negatively influence on e-strategy implementation depend on the potential adopters, their unique context of application and the typeof innovation. The study has proposed a potential model that will be used by e-managers to improve the e-strategy implementation in Kenyan universities. On further research, empirical research should be done to test the propositions and the findings used to confirm whether the relationships are true or false which will help universities to make informed decision during e- strategy implementation process.

REFERENCES

Al-Adwan, A., and Smedley, J. (2012). Implementing e-learning in the Jordanian Higher Education System: Factors affecting effect. *International Journal of Education and Development using Information and Communication Technology (IJEDICT), l, 8*(1), pp. 121-135

Abbad, M. M., Morris, D., & de Nahlik, C. (2009). A systematic review of e-learning research in the Arab World. *International Review of Research in Open and Distributed Learning, 10*(3), 1-22.

Andersson, A. & Grönlund, Å. (2009). A conceptual framework for elearning in developing countries: A critical review of research challenges. *The Electronic Journal on Information Systems in Developing Countries, 38*(8), 1–16

Asianzu, L. (2012). Perceived Usefulness and Ease of Use of E-Learning Management System Among Business Education Tutors in Colleges of Education in Rivers State. *Journal of Education and Practice, 3*(5), 124-130.

Asianzu, L. S. (2012). Factors influencing students' intention to adopt e-learning: A case of Tanzanian higher learning institutions. *International Journal of Education and Research, 1*(7), 1-16.

Bagarukayo, E. and Kalema, B. (2015). Evaluation of elearning usage in South African universities: A critical review. *International Journal of Education and Development using Information and Communication Technology (IJEDICT), 11*(2), 168-183

Chawinga, W. D. (2016). Taking social media to a university classroom: Teaching and learning using Twitter and blogs. *International Journal of Educational Technology in Higher Education, 13*(1), 42.

Chuttur, M. Y. (2009). Overview of the technology acceptance model: Origins, developments and future directions. *Working Papers on Information Systems, 9*(37), 1-23.

Dabbagh, N. (2005). Pedagogical models for E-Learning: A theory-based design framework. *International Journal of Technology in Teaching and Learning, 1*(1), 25-44

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319-340.

Decker, C., Ensley, M. D., & Hoss, M. A. (2012). Change management: A critical perspective. *Journal of Change Management, 12*(4), 369-380.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research.* Addison-Wesley.

Fresen, (2010). *Critical factors for effective eLearning,* Goteburg University.

Ghinea, G. (2013). Social factors and their impact on e-strategy implementation success: A critical analysis. *International Journal of E-Strategy Implementation, 6*(1), 32-46.

Gyambrah, M. K. (2007). *E-Learning Technologies and Its Application in Higher Education: A Descriptive Comparison of Germany, United Kingdom and United States.* (Doctoral dissertation). Munich, Germany: Ludwig Maximilians University.

Kasse, & Balunywa. (2013). *An assessment of e-learning utilization by a section of Ugandan universities: challenges, success factors and way forward.* "International Conference on ICT for Africa, 2013, February 20 -23, Harare, Zimbabwe".

Khan, B. H. (2005). *Managing e-learning: Design, delivery, implementation, and evaluation.* Hershey, PA: Information Science Publishing: pp. 22-33.

Kisanga, D., & Ireson, G. (2015). Exploring factors influencing successful e-strategy implementation in Kenyan universities. *International Journal of Education and Development using Information and Communication Technology, 11*(1), 84-99.

Kisanjara, S. (2020). Factors influencing e-learning implementation in tanzanian universities. *The Online Journal of Distance Education and e-Learning, 8*(1), 37 - 54

Kituyi, G., & Tusubira, T. (2013). A framework for the integration of e-learning in higher education institutions in developing countries. *Journal of Education and Development using Information and Communication Technology (IJEDICT), 2013, Vol. '9*, Issue 2, pp. 19-36. Makerere University Business School, Uganda.

Koohang, A., & Du Plessis, M. (2004). A survey of information technologies in small businesses. *Information Technology and Management, 5*(4), 181-202.

Lee, J. N., Wang, Y., Lim, K. H., & Peng, G. C. (2009). Information systems innovation adoption in small businesses: An empirical analysis. *MIS Quarterly, 33*(1), 47-78.

Legris, P., Ingham, J., & Collerette, P. (2003). Why do people use information technology? A critical review of the technology acceptance model. *Information & Management, 40*(3), 191-204.

Legris, P., Ingham, J., & Collerette, P. (2003). Why do people use information technology? A critical review of the technology acceptance model. *Information & Management, 40*(3), 191-204.

Lu, Y. (2010). Impact of individual differences on e-commerce adoption. *Journal of Management Information Systems, 27*(1), 213-246.

Lwoga, E. T. (2012). *Making learning and Web 2.0 technologies work for higher learning institutions in Africa. Campus-Wide Information Systems,* Paper presented at the ELearn (2002) World Conference. Available online at http://dx.doi.org/10.1108/ET02-2014- 0014 accessed on 12/8/2023

Madar, J.M. and Willis, O. (2014). Strategic Model of Implementing E-Learning: *International Journal of Scientific & Technology Research Volume* 3, Issue, ISSN 2277-8616; pp. 235-238. Availabl online ahttps://www.google.com/#q=wills+model+in+2014+paper+in+e-learning.

Makokha, G. L., & Mutisya, D. N. (2016, May 16). Status of E-Learning in Public Universities in Kenya. *The International Review of Research in Open and Distributed Learning, 17*(3). https://doi.org/10.19173/irrodl.v17i3.2235

Mao, E., & Palvia, P. (2006). The Role of Expertise in the Diffusion of Innovations Theory. *Journal of Computer Information Systems, 46*(2), 67-73.

Maslin, J. (2007). Using the technology acceptance model in the introduction of computer-aided learning. *British Journal of Educational Technology, 38*(2), 352-366.

Mtebe, J. S. and Raisamo, R. (2014). Investigating students' behavioural intention to adopt and use mobile learning in higher education in East Africa: *The International Journal of Education and Development Using Information and Communication Technology (IJEDICT), 10*(3), 4– 20 Multidisciplinary Environment, pp. 231–238: Cape Town, South Africa;New York, ACM. Available online at http://doi:0.1145/2072221.2072248. Accessed on 16/2/2015

Mukirae, M. N. (2020). Challenges facing e-learning programs in Kenyan universities. *International Journal of Educational Technology in Higher Education, 17*(1), 1-17.

Munguatosha, G.M. et al. (2011). A social networked learning adoption model for higher education institutions in developing countries: *On the Horizon, 19* (4) 307 – 320.available online at http://dx.doi.org/10.1108/10748121111179439. Accessed on 12/12/2016

Munguatosha, I. (2011). Technology acceptance model in education: A review of the literature. *Contemporary Issues in Education Research, 4*(3), 9-16.

Nagunwa, T., & Lwoga, E. T. (2012). E-strategy implementation challenges in Kenyan universities: A case study approach. *International Journal of Education and Development using Information and Communication Technology, 8*(1), 75-91.

Njenga, J. K. (2011). E-learning in Kenya: The impact of ICT on the quality of education. *International Journal of Education and Development using ICT, 7*(1), 67-81.

Nunes, M. B., & McPherson, M. (2007). Social attributes and e-learning implementation: Perspectives on student interaction and knowledge exchange. *Educational Technology Research and Development, 55*(5), 487-506.

Ordonez, K. (2014). *Predicting International Critical Success Factors in E-learning:* A thesis Submitted in Partial Fulfillment of the Requirements for the degree of Doctor of Philosophy: pp. 1-274.

Painter-Marland, T., et al. (2003). Factors influencing the implementation of e-learning strategies in higher education institutions. *Journal of Educational Technology & Society, 6*(4), 35-42.

Pappas C. (2013). *Top 10 e-Learning Statistics for 2014 You Need To Know.* Available: http://elearningindustry.com/top-10-e-learningstatistics- for-2014-you-need-to- know

Rogers, E. M. (2003). *Diffusion of Innovations* (5th ed.). Free Press.

Sanga, C., et al. (2013). Factors influencing the implementation of e-learning strategies in higher education institutions: A case study of selected Kenyan universities. International *Journal of Education and Development using Information and Communication Technology, 9*(2), 4-19.

Shivaraj, O. et al. (2013). Students' Attitude towards the Uses of Internet: *Indian Journal of Library and Information Science, 7*(1), 13-23.

Taha M. (2014). *Investigating the Success of E-Learning in Secondary Schools: The Case of the Kingdom of Bahrain:* A thesis submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the department of Computer Science. pp. 1-125.

Tarus, J. K. and Gichoya, D. (2015). *E-Learning In Kenyan Universities: Preconditions For Successful Implementation.* The Electronic Journal of Information Systems in Developing Countries: PP.1-14 Available online at htt://www.ejisdc.org. accessed on 17/ 3/2015

Teo, T. et al., (2011). Assessing e-learning acceptance by university students in Thailand. *Australasian Journal of Educational Technology, 27* (8), 1356-1368

Thong, J. Y. (2002). An integrated model of information systems adoption in small businesses. *Journal of Management Information Systems, 19*(1), 255-278.

Tornatzky, L. G., & Fleischer, M. (1990). *The processes of technological innovation.* Lexington Books.

Tossy, T. (2012). *Cultivating Recognition: A Classic Grounded Theory of E-Learning Providers Working in East Africa*: pp.1-381. Available online at http://www.elearningcouncil.com. Accessed on 7/8/2023

Van der Klink, M., & Jochems, W. (2004). *Management and organisation of integrated e- learning (Eds.),* Integrated e-learning: Implications for pedagogy, technology and organisation (pp. 151–163). London: RoutledgeFalmer

Vershitskaya, E.R., Mikhaylova, A. V., Gilmanshina, S. I., Dorozhkin, E. M., Epaneshnikov, V. V. (2020). Present-day management of universities in Russia: Prospects and challenges of e-learning. *Education and Information Technologies, 25*(1):611–621.

Zhu, C. et al. (2009). Chinese students' perceptions of a collaborative e-learning environment and factors affecting their performance: implementing a Flemish e- learning course in a Chinese educational context. *Asia Pacific Educ. Rev. 10*. 225–235. [Online] accessed at: DOI 10.1007/s12564-009-9021- 4 Springer

Strategic Conflict Handling and Customer Satisfaction among Tier One Supermarkets in Nairobi County

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ABSTRACT

Application of strategic leadership through relationship marketing construct of strategic conflict handling has emerged as one of the main pillars of enhancing relationships with consumers. Groundedon practice theory, Rahim Organizational Conflict Inventory Model and Expectation Disconfirmation Theory, the study sought to establish the effect of strategic conflict handling on customer satisfaction. From the attained coefficients of determination (R^2) of 0.32.4, as well as the t statistics results, B of 0.579 and calculated t value of 12.505, which was greater than t critical, the study rejected the H0 and revealing that strategic conflict handling was significant in affecting customer satisfaction among tier one supermarkets in Nairobi County. A moderate positive correlation r of 0.569 was also found based on the correlation analysis results. The study recommends that supermarket management should focus on enhancing strategic conflict handling systems through training of staff on the same as a means of sustaining customer satisfaction. The study filled a knowledge gap concerning relationship-marketing practices by theorizing relationship-marketing practices based on practice theory in addition to contributing to existing literature by in strategic conflict handling. The study findings shall also be used to improve customer management policy decisions by retail organizations and marketing practitioners.

Keywords: Strategic conflict handling, Relationship marketing, Customer satisfaction

INTRODUCTION

Background information

The retail sector in the world is characterized by fierce competition owing to among other factors same product offerings that have created little differentiation factors. This has necessitated the need to be proactive and prioritize customer retention. The same competitive trend has been experienced in Africa where foreign companies have been increasing their footprint through foreign direct investments, mergers, and acquisitions (Catherine, Kamau, & Mbithi, 2019). Research firm Deloitte in their African powers of retailing report of 2015 indicate that East Africa's shopping environment is also undergoing an evolution as supermarket firms and private equity firms appear eager to cash in on the region's consumer markets by investing in multibillion malls and centers thereby increasing competition (Muturi, 2018). Consequently, this has necessitated the adoption of relationship building strategies advocated in relationship marketing literature like strategic conflict handling for service differentiation.

Tier one supermarkets in Nairobi County

Kenya's supermarket sector consists of three tiers (Makori, Magutu, Omai, & Akello, 2016). The supermarkets in the third tier consist of independent (single-store) supermarkets and small chains. Those in the second tier consist of supermarkets competing for the shilling vote of the middle to low-income urban consumers. Lastly, tier one supermarkets are large multilane supermarkets that offer a variety of high-quality goods and services sourced mainly directly from producers or manufacturers. Some of them target high end consumers while others target consumers from all socio-economic classes (Josphat, 2019; Neven et al., 2006; Njenga, 2012; Solarmart, 2012). Among the big tier one supermarket in Nairobi which are of interest for this study include, Tuskys, Naivas, Carrefour and Tumaini/Quick mart.

Research objective and Hypothesis

To establish the effect of strategic conflict handling on customer satisfaction among tier one supermarkets in Nairobi County;

H0: Conflict handling has no significant effect on customer satisfaction among tier one supermarkets in Nairobi County.

Justification of the study

The study filled marketing knowledge gap and literature concerning relationship-marketing practice by theorizing relationship-marketing practice of strategic conflict handling based on practice theory. The study findings are also useful in improving customer management policy decisions by retail organizations and marketing practitioners. The findings and recommendations form a basis for future research by scholars and researchers even in other sectors of the economy.

LITERATURE REVIEW/ THEORETICAL FUNDAMENTALS
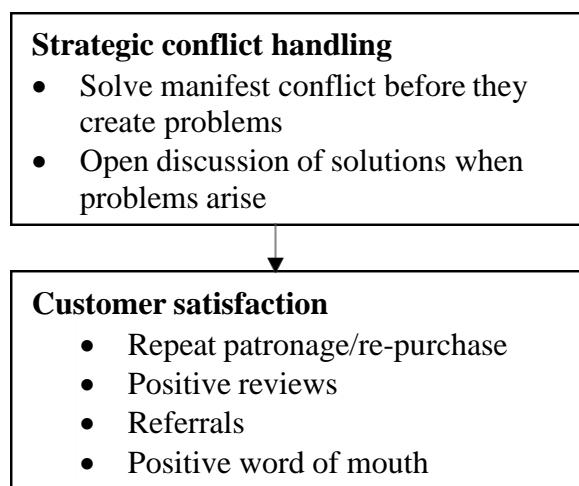
Theoretical review

The choice of strategic conflict handling as an important construct in relationship building model was informed by deductions from two theories; practice theory and Rahim organizational conflict model. From practice theory perspective which according to Bourdieu (1977) and Giddens (1984) states that human beings are social beings with diverse motives and intentions which make and transform the world which they live in, and in doing so, they develop actions which if linked together form more and less persistent social practices or agglomeration of practices. Relationship marketing practice is viewed as an integrative practice under the marketing field while strategic conflict handling is viewed as a dispersed practice under relationship marketing. Integrative practices are 'the more complex practices found in and constitutive of particular domains of social life' (Schatzki, 2016), while dispersed practices, are part of the components of saying and doing which allow the understanding of, say, relationship marketing practice (integrative), along with the ability to follow the rules governing the practice and its particular 'structure' (Ameer & Halinen, 2019; Bueger & Gadinger, 2018).

Rahim organizational conflict inventory model was developed by Rahim (1983) and looks at various styles of handling interpersonal conflicts. The same was expanded by Rahim (1985) when he developed strategies for managing conflicts in complex organizations. The model's uniqueness and importance is brought about by its emphasis on individual predispositions, the use of communication explicitly as a set of tactics for equalizing any amount of business to customer conflict and its belief in maintaining a balance in the amount of conflict between the organizational staff and customers, and its effectiveness in managing conflict (Weide' Hatfield, 1988). The model

is designed to measure five independent dimensions of the styles of handling interpersonal conflict each with several items: Integrating, obliging, dominating, avoiding, and compromising (Chen, Hou, & Wu, 2016; Rahim, 2017). The model also enhances the conflict handling resolutions propagated by Thomas and Kilmann (1974).

The expectancy disconfirmation theory was used to explain the customer satisfaction constructs. The model was developed by Oliver (1977) and explains post purchase or post adoption as a function of expectations, perceived performance, and disconfirmation of beliefs. When customers perceive that the performance is worse than what they expected or desired about the quality of specific products or services, negative disconfirmation will happen (Gillison & Reynolds, 2018). Positive disconfirmation leads to the customer's satisfaction and negative disconfirmation means perceived performance of products or services could not attract the customer satisfaction (Sharma & Srivastava, 2018).

Conceptual framework

Strategic conflict handling
• Solve manifest conflict before they create problems • Open discussion of solutions when problems arise

↓

Customer satisfaction
• Repeat patronage/re-purchase • Positive reviews • Referrals • Positive word of mouth

Source: Developed for this research, 2020

Strategic Conflict handling

Conflict, recognized as an inevitable everyday phenomenon, has recently become one of the main areas of research interest for the organizational sciences (Abdullah, 2018; Choudhary, 2018). The occurrence of conflict in business relationships is considered un avoidable and natural by many researchers due to the interdependence among business parties and the complexities of such existing relationships (Bojei & Abu, 2014). At different levels, its impact may have positive and negative consequences, associated either with improved relationships between the actors involved, or with disrupted cooperation among individuals, groups or organizations and reduced effectiveness (Naseer & Fazal, 2019). According to De Wit, Greer, and Jehn (2012) relationship conflict tends to be associated with negative effects. Concerning conflict management strategies in relationship marketing and the circumstances that lead to their differentiated use, there are many dispositional and situational variables considered relevant (De Wit et al., 2012; Naseer & Fazal, 2019).

As a relationship building construct, several reasons justify the inclusion of strategic conflict handling in the study. To start with, the selection is justified by its appearance to several business studies and relationship marketing studies (e.g., Ndubisi (2011); Narteh, Agbemabiese, Kodua,

and Braimah (2013); Chakiso (2015)), a clear indication that it is a valid measure of relationship marketing. Secondly its utilization by several scholars in understanding service marketing (e.g., Chang and Gotcher (2010); Husnain and Akhtar (2016)), means that it can effectively measure relationship marketing in a retail service set up like a supermarket which is the context of this study.

Mornay (2011) while analyzing the work of Phillip Kotler and Kevin Keller noted that the importance of conflict handling emanates from the fact that only about 5% of all unsatisfied customers complain. In addition, only about 50% of those who raise complains will eventually report a satisfactory problem resolution. Furthermore, he also observed that approximately 34% of customers who register a major complaint and the same resolved satisfactorily would continue purchasing from the company. Finally, he concluded by acknowledging that organizations that have put in place a system that encourages dissatisfied customers to raise complains and at the same time empower their employees to try and remedy the situation as soon as possible have a higher probability of registering higher revenues and posting greater profits. To highlight the importance of conflict handling especially in retailing, Karadeniz and Cdr (2010) indicated that it lies at the highest level of relationship building by offering structural solutions to problems encountered by customer in the transaction process.

This study looks at two relationship marketing conflict-handling strategies explained by (Ndubisi, 2007). These help to solve manifest conflict before they create problems and to open discussions for solutions, when problems arise. The suitability of the various strategies of conflict handling depends on the type of conflict and the situation (De Wit et al., 2012; Hunt, 1977; Suhaniya & Thusyanthy, 2016).

Customer satisfaction. Satisfaction can be defined as the post purchase evaluation of the overall service or product experience by consumers where the needs and expectations have been met or exceeded (Solate, 2018). Other definitions have also been given. For example, Vesel and Zabkar (2010) define customer satisfaction as an emotional state of mind that a customer attains when his or her expectations are met. It is also a measure of relationship quality (RQ) (Kwan & Carlson, 2017). From the work of Hennig-Thurau and Klee (1997), scholars noted that RQ reflect the degree of appropriateness of a relationship to fulfill the needs of the customers (Pervan, Bove, Johnson, & Lin, 2011). Customer satisfaction is a very important concept that has been analyzed extensively in marketing research (Koklic, Kukar-Kinney, & Vegelj, 2017). According to Suhaniya and Thusyanthy (2016) while looking at the work of Hunt (1977) noted that more than 500 studies on the subject were conducted in the 1970s. The EDT theory helps to understand several elements of satisfaction (Au & Tse, 2019; Richard, Felix, Innocent, & Sylvie, 2018). Through the work of Moraru and Duhnea (2018) we observe that some marketing researchers view customer satisfaction as a process while others consider it an outcome. In recent time, customer satisfaction has gained attention within the context of the paradigm shift from transaction marketing to relationship marketing (Honer, Griffith, & White, 2015).

Customer satisfaction is also a dimension of multiple items evaluated as satisfaction measurement, which can vary from business to business (Adikaram & Khatibi, 2016). Business success and profitability is also determined by improving customer satisfaction (Luu, 2019; Ryu & Lee, 2017). Satisfied customers will most likely re-purchase the product or service, engage in positive referrals

and above all enhance brand loyalty (Lee, Johnson, & Tang, 2012; Liu, Deligonul, Cavusgil, & Chiou, 2018). Despite the effort to give constructs that can truly measure customer satisfaction, it should be noted that there is also a problem with how questions are asked. Different results can be achieved with the same satisfaction survey dependent on how it was operationalized (Joan & Joseph, 2000). In retailing, it is believed that the success of an organization or business entity like a supermarket is pegged on customer satisfaction (Al-Ali, Bazin, & Shamsuddin, 2015). There are several indices that are used to measure customer satisfaction (Banwari, 2016). The ones adopted for this study were derived from Lee et al. (2012) and Liu et al. (2018) and reflect a shift from the traditional constructs which scholars like Linda and Judith (2015) criticized for reporting overly positive results. In the study, the researcher operationalized customer satisfaction by looking at its four facets. Thus, repeat patronage or product repurchases positive reviews, referrals, and positive word of mouth.

RESEARCH METHODOLOGY

Research Paradigm and Philosophy

The study follows a Positivists or the scientific paradigm or philosophy, which views reality as being objective and knowable (Mack, 2010). It therefore means that the effect of relationship marketing practices on customer satisfaction among tier one supermarkets in Nairobi County is knowable. The purpose of research in this paradigm is to prove or disprove a hypothesis (Aliyu, Bello, Kasim, & Martin, 2014; Mack, 2010).

Research Design

The research design adopted by this study was descriptive research design because the design describes things, character and state of affairs as they exist at a particular point in time (Dawson, 2019). Cooper and Schindler (2014) on their part postulated that descriptive research study is concerned with finding out who, what, where, when, how much or how often is the problem situation. The study also employed a survey research strategy since it supports descriptive research design as it allows the researcher to collect quantitative data, using questionnaires that can then be analyzed quantitatively using descriptive and inferential statistics (Saunders, Lewis, Thornhill,& Bristow, 2015).

Target population and sample size

The target population of the study are tier one supermarket customers in Nairobi County. Based on the 2019 Kenya population and housing census results that put the Nairobi County resident population at 4,397,073 million people, we project the target population to be 30% of 4,397,073 million residents of Nairobi County. This gives approximately 1,319,122 presumed supermarket customers. In addition, 2019 market insight reports by Asoko Insight indicates that tier one supermarkets constitute 80% of the market share in Nairobi County led by Tuskys and Naivas. This in terms of customers means that they constitute 80% of total shoppers from formal retail outlets in Nairobi County. This gives approximately (1,319,122*0.8) = 1,055,298 tier one supermarket customers.By applying the formula as proposed by Daniel and Cross (2018) for attaining sample sizes from large population sizes, a sample size of 384 people was attained and proportionately allocated to the tier one supermarkets.

RESULTS AND DISCUSSION

Response rate

Mugenda and Mugenda (2003) opines that a response rate of 50% is considered adequate, 60% is considered good while any value above 70% is considered to be very good.

Table 1: Response rate

Response	Frequency
Number of distributed questionnaires	384
Returned questionnaires	336
Correctly completed questionnaires	329
Response rate of correct questionnaires	85.68%

Reliability test

George and Mallery (2016), recommended that each of the constructs is supposed to have Cronbach's Alpha greater than 0.7 in order to be unquestionable and highly reliable. The results as presented in table 2 affirm that the scale of constructs were reliable.

Table 2: Reliability test results

Variable	Cronbach's Alpha	Number of items
Strategic conflict handling	0.864	7
Customer satisfaction	0.874	9
Overall questionnaire	0.936	16

Source: Author, 2020

Test on assumptions of classical linear regression model

Though not all assumptions are relevant to the study model scope (univariate model and not time series), the following assumptions were tested for the linear regression model in order to ensure no violation: Normality test, Linearity test, and Heteroscedasticity test. The summary of results is presented in table 3 below

Table 3: Assumptions of classical linear regression model

Assumption	Test used	Remarks
Normality	Normal Probability Plots	Data normally distributed
Linearity	Residual scatter plots	Independent variable scatterplots provedexistence oflinear relationship
Heteroscedasticity	Used scatter plot of residuals	Data points were scattered with noclear pattern(homoscedastic)

Regression analysis and testing of research hypothesis

H0: Strategic conflict handling has no significant effect on customer satisfaction among tier onesupermarkets in Nairobi County.

Study model: $\gamma = \alpha + \beta_1 V_1 + e$, Where

γ = Customer satisfaction; α =Constant; βi = variable coefficients; e = Error term; V1= strategic conflict handling.

The focus of test regression was to determine the influence of conflict handling on customer satisfaction among tier one supermarkets in Nairobi County. To test the regression, the index of strategic conflict handling was regressed against customer satisfaction among tier one supermarkets in Nairobi County.

The regression model summary results indicated that, the model had a coefficient of determination (R^2) of 0.324, which implied that 32.4% of the variations on customer satisfaction among tier one supermarkets in Nairobi County are explained by conflict handling. The R^2 attained is sufficient as a measure of goodness of fit and hence can be used for future forecasts. The results concur with the findings of Ndubisi and Wah (2005) who observed that effective conflict handling in retailing increases customer satisfaction**.** Kyei and Narteh (2016) in their study also observed that there was enough evidence indicating that variations in customer satisfaction are also generated by conflict handling strategies employed.

In addition, from the analysis of variance (ANOVA) statistics, the study established the regression model had a significance level of 0.000, a value that was less than the p-value of 5%. This is an indication that the model fit and significant and the data was ideal for making a conclusion on the population parameters. Furthermore, the calculated F value was greater than the critical value (156.376>3.8415) hence the decision to reject the null hypothesis and infer that strategic conflict handling has a significant effect on customer satisfaction among tier one supermarkets in Nairobi County.

The results prove the findings attained by Senasu (2012) who reported that conflict handling have positive effect to customer satisfaction. In addition, Mahmoud, Hinson, and Adika(2018) also observed that conflict handling had a direct significant effect on customer satisfaction and

recommended that for effective customer satisfaction and retention, managers should strive to resolve customer complaints.

The findings of the coefficient of regression for strategic conflict handling meant that the resultant regression model is $Y = 1.58 + 0.579V1 + e$. implying that a unit increase in strategic conflict handling while holding the other factors constant at zero, customer satisfaction among tier one supermarkets in Nairobi County would be increased by a factor of 0.579. In addition, the results of the t statistics from the coefficient of regression were compared with the t critical from the t distribution table at $\alpha = 5\%$. The calculated t value of 12.505 obtained was greater than the t-critical (1.96) and therefore the study rejected the null hypothesis and affirmed the alternative hypothesis. Similar results in the telecommunication industry were attained by Mahmoud et al.,(2018) whose alternative hypothesis concluded that conflict handling has a significant effect on customer satisfaction. The results are also in concurrence with Nauroozi and Moghadam, (2015) who observed that that if a supplier has the ability to resolve actual conflicts even before they become a problem, and also finding solutions when a problem arises shall lead to customer satisfaction.

Relationship between strategic conflict handling and customer satisfaction

Karl Pearson's correlation coefficient (r) of linear association between study variables was employed where the P value was compared to the appropriate level of significance (0.01). The study adopted the work of Mukaka (2012) in interpreting the sizes of correlation attained.

Table 4: Correlation coefficients

Variable	1	2
1. Customer satisfaction		
2.Strategic conflict handling	0.569**	

**. Correlation is significant at the 0.01 level(2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

The results of correlation test analysis between the customer satisfaction and strategic conflict handling revealed that the association was a moderately positive correlation as indicated by a statistically significant correlation coefficient of0.569. The results were however slightly different from a lower correlation coefficient of 0.226 that Nyameino (2016) attained implying that the relationship was negligible. In another related study attained by Kyei and Narteh (2016), the results were found to be consistent with this study finding even though their scope was in the Ghanaian banking sector. Nonetheless, most of the studies have reported a positive Pearson correlation between conflict handling and customer satisfaction.

CONCLUSION AND RECOMMENDATIONS

This study reported a significant relationship between strategic conflict handling and customer satisfaction, a clear indication of its importance especially in the study context of supermarkets in Nairobi County. In addition, with a 32.4% of the variations on customer satisfaction among tier one supermarkets in Nairobi County explained by strategic conflict handling as indicated in the model summery results, this puts its importance very high in relationship marketing constructs.

Based on study findings, the researcher recommends training staff on strategic conflict handling initiatives. For instance, solving manifest conflict before they create problems and open discussion of solutions when problems arise. These were found to be most effective in enhancing emotional attachment and social exchange, which can be translated to more purchases and loyalty.

In further recommendations, the researcher looks at the limitation of the study where it concentrated on the effect of strategic conflict handling on customer satisfaction among tier one supermarkets in Nairobi County. Though its findings have added meaningful contribution to knowledge, practice and theory in management and marketing, the unique nature of supermarkets, it cannot allow the study results to be generalized to other service-oriented organizations. Furthermore, through empirical review it was unearthed that there were very few studies on the cottage industry and the manufacturing sector and this should be considered in future.

REFERENCES

Abdullah, N.A. (2018). How Emotional Intelligence Relates to Conflict Management Style in Selangor. *e-Bangi, 14*(3).

Adikaram, C. N. K., & Khatibi, A. (2016). The relationship between customer relationship management and customer satisfaction: A study on private higher education institutions in Sri Lanka. *International Journal of Arts and Commerce, 5*(2), 69-95.

Al-Ali, M., Bazin, N. E. N., & Shamsuddin, S. (2015). Key Determinants of Customer Satisfaction: Evidence from Malaysia Grocery Stores. *Journal of Theoretical & Alied Information Technology, 74*(3).

Aliyu, A. A., Bello, M. U., Kasim, R., & Martin, D. (2014). Positivist and non-positivist paradigm in social science research: Conflicting paradigms or perfect partners. *Journal of Management & Sustainability, 4*, 79.

Ameer, I., & Halinen, A. (2019). Moving beyond ethical decision-making: a practice-based view to study unethical sales behavior. *Journal of Personal Selling & Sales Management*, 1-20.

Au, A. K. M., & Tse, A. C. B. (2019). Expectancy disconfirmation: effects of deviation from expected delay duration on service evaluation in the airline industry. *Asia Pacific Journal of Marketing and Logistics, 31*(1), 291-300.

Banwari, M. (2016). Retrospective: why do customers switch? The dynamics of satisfaction versus loyalty. *Journal of Services Marketing, 30*(6), 569-575.

Bojei, J., & Abu, M. L. (2014). The underlying dimensions of relationship marketing in the Malaysian mobile service sector. *Journal of Relationship Marketing, 13*(3), 169-190.

Bourdieu, P. (1977). *Outline of a Theory of Practice* (Vol. 16): Cambridge university press.Bruner, G. C., Hensel, P. J., & James, K. E. (2005). *Marketing scales handbook*.

Bueger, C., & Gadinger, F. (2018). Situating Practice in Social Theory and International Relations *International Practice Theory* (. 13-33): Springer.

Chakiso, C. B. (2015). The effect of relationship marketing on customers' loyalty (Evidence from Zemen Bank). *EMAJ: Emerging Markets Journal, 5*(2), 58-70.

Chang, K.-H., & Gotcher, D. F. (2010). Conflict-coordination learning in marketing channel relationships: The distributor view. *Industrial Marketing Management, 39*(2), 287-297.

Chen, A. S.-y., Hou, Y.-h., & Wu, I.-h. (2016). Handling conflict at work–the impact of active and agreeable conflict styles. *International Journal of Conflict Management, 27*(1), 50-61.

Choudhary, L. (2018). Educational strategies for conflict management. *Nursing2020, 48*(12), 14-15.

Cooper, D. R., & Schindler, P. S. (2014). Business research methods: McGraw-Hill/Irwin (New York).

Daniel, W. W., & Cross, C. L. (2018). *Biostatistics: a foundation for analysis in the health sciences (11th ed.).* John Wiley *and Sons*, Inc.

Dawson, C. (2019). *Introduction to Research Methods 5th Edition: A Practical Guide for Anyone Undertaking a Research Project*: Hachette UK.

De Wit, F. R., Greer, L. L., & Jehn, K. A. (2012). The paradox of intragroup conflict: a meta-analysis. *Journal of Alied Psychology, 97*(2), 360.

Gillison, S. T., & Reynolds, K. E. (2018). Satisfaction While Shoing for Another Person: How Others' Product Evaluation Influence Shoer Satisfaction. *Journal of Marketing Theory and Practice, 26*(3), 211-229.

Hennig-Thurau, T., & Klee, A. (1997). The impact of customer satisfaction and relationship quality on customer retention: A critical reassessment and model development. *Psychology & Marketing, 14*(8), 737-764.

Honer, J. J., Griffith, D. A., & White, R. C. (2015). Reciprocity in relationship marketing: A cross-cultural examination of the effects of equivalence and immediacy on relationship quality and satisfaction with performance. *Journal of International Marketing, 23*(4), 64-83.

Hunt, H. K. (1977). *Conceptualization and measurement of consumer satisfaction and dissatisfaction*: Marketing Science Institute.

Husnain, M., & Akhtar, W. (2016). Relationship marketing and customer loyalty: Evidence from banking sector in Pakistan. *Global Journal of Management And Business Research*.

Joan, G., & Joseph, C. (2000). Defining consumer satisfaction. *Academy of marketing science review, 1*(1), 1-22.

Karadeniz, M., & Cdr, N. (2010). The relationship marketing aroach and strategies in retailing management to constitute customer and brand loyalty. *Journal of Naval Science and Engineering, 6*(1), 15-26.

Koklic, M. K., Kukar-Kinney, M., & Vegelj, S. (2017). An investigation of customer satisfaction with low-cost and full-service airline companies. *Journal of Business Research, 80*, 188-196.

Kwan, R., & Carlson, J. L. (2017). The ties that bind us: Examining relationship marketing orientation and its impact on firm performance in the information systems outsourcing services sector. *Journal of Strategic Marketing, 25*(5-6), 495-510.

Kyei, D. A., & Narteh, B. (2016). Relationship Marketing Practices and Customer Satisfaction in the Ghanaian Banking Sector. *European Journal of Business and Management, 8*(16).

Lee, R. P., Johnson, J. L., & Tang, X. (2012). An investigation into the role of IT integration, relationship predictability and routinization in interfirm relationships: from the structuration perspective. *Industrial Marketing Management, 41*(2), 368-377.

Linda, N., & Judith, W. (2015). *Marketing Research Firm Performance and Antecedents to Client Satisfaction.* Paper presented at the Proceedings of the 1997 Academy of Marketing Science (AMS) Annual Conference.

Liu, Y.-H. S., Deligonul, S., Cavusgil, E., & Chiou, J.-S. (2018). Always trust in old friends? Effects of reciprocity in bilateral asset specificity on trust in international B2B partnerships. *Journal of Business Research, 90*, 171-185.

Luu, T. T. (2019). CSR and customer value co-creation behavior: The moderation mechanisms of servant leadership and relationship marketing orientation. *Journal of Business Ethics, 155*(2), 379-398.

Mack, L. (2010). The philosophical underpinnings of educational research: Polyglossia.

Mahmoud, M. A., Hinson, R. E., & Adika, M. K. (2018). The effect of trust, commitment, and conflict handling on customer retention: The mediating role of customer satisfaction. *Journal of Relationship Marketing, 17*(4), 257-276.

Moraru, A.-D., & Duhnea, C. (2018). E-banking and customer satisfaction with banking services. *Strategic Management, 23*(3), 3-9.

Mornay, R. L. (2011). Customer retention through customer relationship management: The exploration of two-way communication and conflict handling.

Mugenda, O. M., & Mugenda, A. G. (2003). *Research methods: Quantitative and qualitative approaches*: Acts press.

Mukaka, M. M. (2012). A guide to aropriate use of correlation coefficient in medical research. *Malawi Medical Journal, 24*(3), 69-71.

Muturi, F. M. (2018). *Determinants of brand loyalty in leading supermarket chains in Kenya*.JKUAT-COHRED.

Narteh, B., Agbemabiese, G. C., Kodua, P., & Braimah, M. (2013). Relationship marketing and customer loyalty: Evidence from the Ghanaian luxury hotel industry. *Journal of Hospitality Marketing & Management, 22*(4), 407-436.

Naseer, M., & Fazal, H. (2019). On the relationship between intra group conflict and group performance: Evidence from Telecom Sector of Pakistan. *HOLISTICA–Journal of Business and Public Administration, 10*(1), 78-87.

Nauroozi, S. E., & Moghadam, S. K. (2015). The Study of Relationship Marketing with Customer Satisfaction and Loyalty. *International Journal of Innovation and Research in Educational Sciences, 2*(2), 95-101.

Ndubisi, N. (2007). Relationship marketing and customer loyalty. *Marketing Intelligence & Planning, 25*(1), 98-106.

Ndubisi, N. O. (2011). Conflict handling, trust and commitment in outsourcing relationship: A Chinese and Indian study. *Industrial Marketing Management, 40*(1), 109-117.

Ndubisi, N. O., & Wah, C. K. (2005). Factorial and discriminant analyses of the underpinnings of

relationship marketing and customer satisfaction. *International Journal of Bank Marketing*

Nyameino, B. C. (2016). *Effect of Relationship Marketing Practices and Information Communication Technology on Customer Satisfaction Among Classified Star Hotels in Nairobi-Kenya.* Doctoral Dissertation, Moi University, Eldoret - Kenya.

Oliver, R. L. (1977). Effect of expectation and disconfirmation on postexposure product evaluations: An alternative interpretation. *Journal of Alied Psychology, 62*(4), 480.

Pervan, S. J., Bove, L. L., Johnson, L. W., & Lin, C.-H. (2011). Effect of reciprocity on well-being in interpersonal marketing relationships: An interview study. *International Journal of Management, 28*(1), 185.

Rahim, M. A. (1983). A measure of styles of handling interpersonal conflict. *Academy of Management Journal, 26*(2), 368-376.

Rahim, M. A. (1985). A strategy for managing conflict in complex organizations. *Human Relations, 38*(1), 81-89.

Rahim, M. A. (2017). *Managing conflict in organizations*: Routledge.

Ramsbotham, O., Miall, H., & Woodhouse, T. (2011). *Contemporary conflict resolution*: Polity.

Richard, N. N., Felix, N., Innocent, E., & Sylvie, F. (2018). The role of service attributes in customer satisfaction: An analysis of classified hotels in Cameroon. *African Journal of Business Management, 12*(4), 66-77.

Ryu, K., & Lee, J.-S. (2017). Examination of restaurant quality, relationship benefits, and customer reciprocity from the perspective of relationship marketing investments. *Journal of Hospitality & Tourism Research, 41*(1), 66-92.

Saunders, M. N., Lewis, P., Thornhill, A., & Bristow, A. (2015). Understanding research philosophy and approaches to theory development.

Schatzki, T. (2016). Practice theory as flat ontology *Practice Theory and Research* (. 44-58): Routledge.

Senasu, P. (2012). *The effect of commitment, trust, competence, communication, conflict handling on relationship quality, customer satisfaction, customer loyalty.* University of the Thai Chamber of Commerce.

Sharma, S., & Srivastava, S. (2018). Relationship between Service Quality and Customer Satisfaction in Hotel Industry. *TRJ (Tourism Research Journal), 2*(1), 42-49.

Solate, A. O. (2018). Customer satisfaction on supermarket retail shopping using web-based participatory GIS. *The Business & Management Review, 9*(3), 35-42.

Suhaniya, A., & Thusyanthy, V. (2016). A review on the relationship variables to customer satisfaction. *Global Journal of Management and Business Research: E Marketing, 16*(5), 87-91.

Thomas, K. W., & Kilmann, R. H. (1974). *Thomas-Kilmann conflict mode instrument*. Tuxedo, NewYork: XICOM, Inc.

Vesel, P., & Zabkar, V. (2010). Relationship quality evaluation in retailers' relationships with consumers. *European Journal of Marketing, 44*(9/10), 1334-1365.

Weide' Hatfield, D. (1988). Assessing the Rahim Organizational Conflict Inventory-II (ROCI-II). *Management Communication Quarterly, 1*, 350 - 366.

Utilization of Information Systems for Effective Service Delivery in Academic Libraries: Threats and Challenges

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ABSTRACT

Achievement of Kenya's National Vision 2030 depends on embracing innovative technologies in various sectors of economy including the higher education sub-sector. The use of Information Systems has been widely accepted and proven to increase effective service delivery in most organizations. Academic libraries optimize their operations by using Information systems for educational and research ecosystem. Providing access to information resources, supporting effective service delivery including for scholarly communication, promoting information literacy and developing a culture of sharing and imparting knowledge to fulfil the mission and objective of the parent higher education institution. This paper explores the utilization of information system for effective service delivery inacademic libraries, focusing on the various types of systems used and their impact on staff who utilize Information Systems in the academic libraries service delivery; barriers to optimal use of these systems are also identified. Interviews and questionnaires survey were used to collect data from three academic libraries one each in Kenya, Uganda and Rwanda namely; The East African University, Kampala University and EastAfrican University, Rwanda respectively, which were purposively selected. Data was analyzed and results presented comprising percentages and frequencies as well as the mean score. Technical challenges such as inadequate server storage and system failure, limited financial resources and human resources issues such as inadequate staff training as some of the major barriers to optimal utilization of Information Systems for effective service delivery in academic libraries. Adequate funding enhanced staff training and better management practices need to be ensured for optimal use of information systems for service delivery in academic libraries. In addition, strategies need to be developed to overcome challenges and maximize utilization of these systems in academic libraries service delivery.

Keywords: Information systems, Academic Libraries, Library Information Systems, Kenya, Uganda, Rwanda, Service Delivery.

INTRODUCTION

Information professionals are working in very complex but interesting times. They provide effective service by use of various information systems. In today's digital era, sustainability of academic libraries in their respective academic communities is achievable only if they continue to replace their erstwhile traditional physical modes of providing service to clients with ICT-driven modes especially the use of Information Systems (ISs). ISs involve a variety of information technologies (IT) such as computers, software, databases, communication systems, the internet, mobile devices and much more to perform specific tasks, interact with and inform various actors in different organizational or social contexts.

Academic libraries use variety of ISs to support their operations and services such as integrated

library systems, Digital Assets management systems, Security systems such as 3M security system and CCTVs. The ISs enable academic libraries to streamline their operations, automate routine tasks and provide users with easy access to a wide range of information resources.

ISs such as Integrated Library Management System (ILMS) has been widely accepted by most academic libraries in Africa as the most effective means for effective library service delivery through managing their collection, tracking circulation and providing online access to resources. Digital Assets Management Systems (DAMs) such as Institutional Repository (Dspace) system enable libraries to preserve and provide access to scholarly works provided by their faculty and resources while security systems provide security for library collection.

Recent research has focused on the potential benefits of ISs in enhancing service delivery, improving user experience, and promoting scholarly communication. Fu, Wang, & Wu (2021, p.102-345) identified potential benefits of ISs such as improved service delivery and user experience. In addition, they opined, academic libraries need to prioritize information system utilization to meet the evolving needs of their users and adapt to changes in the information landscape. However, one of the thorny issues is that of existing gap in literature regarding optimal utilization of ISs for effective service delivery in academic libraries.

Moreover, despite the adoption and usage of information systems in academic libraries, most academic libraries in Africa can't still boast of having them fully utilized in provision of academic library services, this is due to a lot of factors posing as threats and challenges to its optimal utilization in the area of service delivery. Therefore, this research paper sought to investigate the existing gap in literature by studying the threats and challenges in utilization of information systems in academic libraries for effective service delivery: a case study from three university libraries in Africa with intentions of making recommendations on addressing the threats and challenges.

Objective of the study

The four objectives of this study were:

i. To identify the types of information system being used in the academic libraries under study;

ii. To determine personal impact on utilization of information systems in academic library service delivery;

iii. To identify the barriers to optimal utilization of information systems by the users in academic library;

iv. To make recommendations based on the findings of the study.

LITERATURE REVIEW

The use of Information Systems (ISs) are inevitable in the digital age in every field. To provide effective services, academic libraries rely on ISs. In recent years, utilization of ISs has become increasingly important for academic libraries to effectively deliver services to their users. Community based cooperative society to a multinational corporation use ISs. Computerized IS play a major role in any organization because they are always aimed at lowering operational costs, increase profit, improve decision making skills, improve service by satisfying customer needs or gain competitive advantage so as to achieve organizational goals (Stair & Reynolds, 2018; Trivedi & Verma ,2020).

According to Saravanan et al., (2021), academic libraries need to embrace ISs to provide effective services; they recommended that, ISs could assist libraries in enhancing the quality and speed of

service delivery, as well as reducing costs. They further argue that, IS enables libraries to manage their resources efficiently, provide quick and accurate access to information and improve user satisfaction.

Laudon and Laudon (2018, P.44) technically defined Information Systems as a set of interrelated components that collect (or retrieve), process, store, and distribute information to support decision-making and control in an organization. In addition to supporting decision- making, coordination, and control, ISs may also help managers and workers analyze problems, visualize complex subjects, and create new products.

Information systems involve a variety of information technologies (IT) such as computers, software, databases, communication systems, the internet, mobile devices and much more to perform specific tasks, interact with and inform various actors in different organizational or social contexts. It is necessary to note that, though major industries – including libraries - have invested much capital into the development and acquisition of ISs to transform service provision Ashish Rao et al. (2018). With studies even looking at the application of artificial intelligence in libraries (Bagchi, (2020), a number of them have failed (Marnewick, (2017).

Recent studies have also explored potential of emerging technologies such as artificial intelligence, machine learning and block chain in transforming academic libraries services and operations. To perform the function of a knowledge convergence center and thereby respond effectively to a wide range of information demands. Fu, Wang, & Wu (2021) recommends that, academic libraries need to prioritize information system utilization to meet the evolving needs of their users and increase the quality of services provided with the IS as confirmed by Rafique et al. (2021) and Izuagbe (2021) that the quality and usefulness of online systems use in libraries positively affect their use. This gives an indication that information professionals and IT personnel should focus on effective service delivery in libraries and information centers ensuring that IS are of good quality, well managed and used effectively. According to Mills and Rayner (2022), academic libraries should invest in robust information systems to support effective service delivery. They suggested that, libraries should prioritize user needs and user experience in the design and implementation of information systems as well as engage in ongoing evaluation and assessment to ensure that these systems meet user needs over time. In the same thought, Mehra and Brahmi (2022) opined that libraries should invest in robust information systems that can support a wide range of services, such as circulation, reference, and research support.

Currently, many academic libraries have adopted the use of ISs in provision of library services such as library automation, library website management, knowledge management, digital library management. Achieved using ISs such as KOHA integrated library management system, Digital Asset Management System such as Digital space, Remote Access and MyLibrary on Finger Tips (MYLOFT) for off campus access and Security Systems such as CCTV and 3M security systems. To ensure optimal utilization of this system, Baker (2008) argues that, there is need for technology for strategic information management and for libraries to be able to manage the vast information resources in the digital age. Technology management must consider trends, trajectories and capabilities to track the development of IS to ensure effective service delivery.

Ocloo (2021) recommends that, staff should be equipped with adequate information and training on ISs before and after the installation. This will enable library staff appreciate and use the ISS for specific library Functions. It is imperative that a library adopt ISs as a key asset in order to sustain its role as the hub of research and learning in any academic institution.

Despite the many evidence that exist in the literature on the impact of ISs utilization and

management in academic libraries leading to its success, in a study in Nigeria, Tella, Edward, Akanbi-Ademolake, and Akande (2021) noted the challenges faced by libraries in implementing open-source library system to include; lack of trained personnel, erratic power supply and lack of finance. Tella, Edward et al. (2021) identified these as some of the challenges and threats in optimal utilization of ISs for effective service delivery in libraries.

Review of this literature shows that, there is need to ensure optimal utilization of ISs in academic libraries thus decision to study the threats and challenges in using ISs for effective service delivery in academic libraries in The East African University Kenya, East African University Rwanda and Kampala University Uganda.

METHODOLOGY

The study employed mixed methods to investigate optimal utilization of ISs for effective service delivery in academic libraries. The researchers purposely selected three university libraries in Kenya, Uganda and Rwanda. This is due to the fact that, the universities are related to each other the universities are ; Kampala University in Uganda being the mother institution to The East African University in Kenya and East African University in Rwanda.

The researchers used questionnaire as the data collection tool to elicit responses from other staff who use electronic system in all the three libraries selected. On the other hand, interviews were used as a qualitative tool to obtain relevant information from IT personnel and Librarians from the selected universities to determine the use of ISs for effective service delivery.

A total 180 staff were targeted as respondents to collect quantitative data, the 180 questionnaires that were distributed, 160 were returned resulting in a response rate of 88.9% from the three libraries studied. Furthermore, 10 librarians and 10 IT staff were interviewed during data collection.

DATA ANALYSIS

Descriptive statistics were used to analyze data: - frequency tables, simple percentage and mean was used to present the results. For questions with two options, percentage were used to analyze the data responses that had a percentage of 50 % and above were rated positive and accepted. The percentages were decided using the following formula:

Percentage = f/N $\times$100/1

For Likert scale responses, analyzes of data using arithmetic means with the use of data values of 4,3,2,1 for (SD) Strongly Agree, (A) Agree, (D) Disagree and (SD) Strongly Disagree was assigned to responses respectively.

The formula for calculating the mean is:

$$\text{Mean } x = \sum fx/f$$

Where, x= scores;

$\sum$=sum of scores F= frequency; and

N= number of scores

The researcher considered average mean of 2.5 and above acceptable, while rejected mean was the mean below 2.5.

This was calculated using the weighing attached to response options of Strongly Agree SA (4), Agree A (3), Disagree D (2), Strongly Disagree SD (1).

Hence $\frac{4+3+2+1}{4} = 10 = 2.5$

FINDINGS

Table 1. Response on the main Information Systems used by staff in academic libraries under study

Type of ISs	Yes	No	%
Library Management System (LMS) e.g., KOHA	80	-	50%
Digital Asset Management (DAM) e.g., Dspace, Lib guide	40	-	25%
Electronic Security System (e.g., 3M system, CCTVs)	20	-	12.5%
Office suite	20	-	12.5%
Total	160	-	100%

The result in Table 1 indicates staff in academic libraries under study use the response on the main. Analyzed data shows that, majority 50% use Library Management System specifically KOHA for effective library service delivery. A number of forty being 25% respondents also accepted the use of Digital Asset Management Systems Precisely Digital space. On the other hand, 12.5% respondents accepted use of 3M Security System and other 12.5% respondent use office suite for service delivery, this implies that majority of academic libraries utilize LMS for effective library servicedelivery.

Table 2. Response on personal impact on utilization of Information Systems in academic library service delivery

Impact measures	SA	A	D	SD	TOTAL	MEAN
The IS increases my productivity	80	60	20	0	160	**3.37**
	(50%)	(37.5%)	(12.5)	(0%)	(100%)	
The IS enhances effectiveness on the job	100	50	10	0	160	**3.56**
	(62.5%)	(31.25%)	(6.25%)	(0%)	(100%)	
I have learnt much through the presence of IS in service delivery	68	85	7	0	160	**3.38**
	(42.5 %)	(53.1 %)	(4.4%)	(0%)	(100%)	
The IS enhances awareness and recall of job-related information	40	90	20	10	160	**3.0**
	(25%)	(56.25%)	(12.5%)	(6.25%)	(100%)	
The information system is easy to use and learn	60	80	15	5	160	**3.22**
	(37.5%)	(50%)	(9.4%)	(3.1%)	(100%)	
The IS includes necessary features and functions	30	90	40	0	160	**2.94**
	(18.75%)	(56.25%)	(25%)	(0%)	(100%)	

The result in Table 2 reflects the respondent's opinion on personal impact on utilization of ISs in academic libraries service delivery. All the items on the table recorded a high response score with mean of <2.5. Library staff response shows a high mean of 3.56 on information systemenhancing their effectiveness on the job, followed by 3.38 mean on IS enabling library staff to learn much in providing effective service delivery. Additionally, increasing staff productivity had a mean of 3.37. Other IS impact included easy use of ISs with 3.22 mean, is enhancingstaff awareness and recall of job-related information with 3.0 mean and lastly, is including necessary features and function with a mean of 2.94(M=2.94). This indicates that utilization of information systems has positively influenced staff working in academic libraries under study. The implication of this finding is that, staff embraces utilization of information systems for effective service delivery in academic libraries.

Table 3: Response on the threats and challenges encountered in optimal utilization of ISs in academic library service delivery

Impact measures	SA	A	D	SD	TOTAL	MEAN
We have insufficient bandwidth	135 (84.38%)	24 (15%)	1 (0.62%)	0 (0%)	160 (100%)	**3.84**
We experience regular Power outages/surges	115 (71.88%)	20 (12.5%)	15 (9.38%)	10 (6.24%)	160 (100%)	**3.5**
The library experiences regular system downtime or failure	130 (81.25%)	25 (15.63%)	5 (3.12%)	0 (0%)	160 (100%)	**3.78**
I have inadequate IT skills and this hinders my efficient use of the IS	125 (78.13%)	10 (6.24%)	25 (15.63%)	0 (0%)	160 (100%)	**3.63**
There is inadequate server storage to store library data	112 (70%)	45 (28.13%)	3 (1.87%)	0 (0%)	160 (100%)	**3.68**
I received insufficient training on the use of the IS and this hinders my efficient use of the IS	140 (93.75%)	20 (6.25%)	0 (0%)	0 (0%)	160 (100%)	**3.87**

Key: **SA = Strongly Agree; A= Agree; D = Disagree and SD = Strongly Disagree**

Table 3 results reveals that the major threats hindering utilization of IS in academic libraries as identified by the respondents are insufficient staff training and insufficient bandwidthwith mean of 3.87 and 3.84 respectively. Most respondents also pinpointed slowness of the system /System failure with a mean of 3.79 and libraries staff experiencing system downtime with3.78 mean. Another set of challenges was the inadequate server storage with 3.68 mean, regular downtime from internet service provider with 3.66 mean. In addition, respondents pinpointed inadequate IT skills as a major challenge with 3.63. The inadequate qualified IT staff to provide support was also a challenge with 3.60 mean, regular power surge with 3.5 mean and finally, the major challenge was lackof modern IT equipment with 3.03 mean.

DISCUSSION ON FINDINGS

Types of ISs used in academic libraries service delivery.

The findings of the study show that, information systems majorly used for effective service delivery in academic libraries, LMS such as KOHA and DAM such as Institutional Repository (Digital space). Other systems included, 3M security systems, CCTVs and office suite for library security management and information repackaging respectively. Libraries should focus on ensuring the usability and accessibility of these systems, in order to enhance user satisfaction and encourage increased usage (Mehra and Brahm, (2022). Academic libraries should prioritize investment in IS and collaborate with other institutions to share resources and knowledge and should engage in continuous evaluation and improvement of their ISs to ensure they remain effective Liu, Q., Wang, L., & Cheng, J. (2021).

Staff impact on the use of IS in academic libraries service delivery

Findings reveals that utilization of IS has positively influenced librarians and information professionals working in academic libraries. This is evident through increase of staff productivity, enhanced information awareness, ease use of IS and promotion of information literacy in academic library service delivery. This implies that, IS have been utilized foe effective service delivery in academic libraries.

Furthermore, a study carried out by Uche-Ibeabuchi and Okolie-Osemene (2021) on "challenges and opportunities of implementing an Integrated Library System in university library" explored benefit of the system in enhancing service delivery, user experience, and promoting scholarly communication.

Threats and challenges encountered in optimal utilization of ISs in academic libraries service delivery

On the other hand, the analysis of the results reveals that, quite a lot of factors stand as threats and challenges to the optimal utilization of ISs for effective academic library service delivery. The entire population of study accepted inadequate staff training as well as insufficient bandwidth as their major threats and challenges hindering optimal utilization of IS for effective service delivery in the libraries under study. This collaborates with Kuwata and Aghaei (2021) findings in their work on exploring the challenges and opportunities of utilizing IS in academic libraries. This work identified system downtime and lack of staff expertise as the major challenges to effective utilization of ISs in academic libraries. This was also revealed in research by Ocloo and Skyi (2021) on "The challenges and prospects of using ISs in academic libraries where they concluded that inadequate funding as one of the major challenges faced thus implication that, enough funds are not allocated for staff training and system hardware and software upgrading and maintenance.

Additionally, inadequate server storage, regular downtime from internet service provider poses to be some of the major challenges hindering optimal utilization of ISs in academic libraries service delivery. A population of 78.13 % and 6.24% of respondents strongly agreed and agreed respectively that inadequate IT skills hinders efficient use of the IS. The researchers were able to discover that, this is due to inadequate staff training on the use of ISs in the libraries understudy. Some other respondents in the population of 81.25% and 15% attest on the slowness of system as another threat that hinders ISs utilization; this was due to the fact that lack of modern IT equipment as one of the factors that pose as threat and challenges in the utilization of ISs for effective

academic library service delivery.

CONCLUSION AND RECOMMENDATIONS

There is no doubt that ISs are the power-generating house for effective library service delivery in academic libraries. Utilization of ISs is inevitable in the information digital age thus librarians and information professionals should adopt a proactive approach to ensure optimal utilization of ISs for effective and efficient service delivery in their work environment and information rich society. However, it is not surprising that, a lot of factors stand as threats and challenges hindering optimal utilization of ISs for effective academic library service delivery. if academic must live to continually fulfil their crucial role in the provision of quality and effective service delivery through promoting information literacy, supporting research and providing access to information using ISs, the following recommendations should be considered; academic Libraries should invest on storage space on server for library data; alternatively,seek to store data on the cloud. They should also provide adequate funds in library budget to cater for hardware and software upgrade and maintenance as well as funds to increase bandwidth. Additionally, academic libraries should establish information literacy program to curb the issue of inadequate IT skills by teaching user and faculty how to navigate digital resources effectively and find relevant information. With acquisition of modern IT equipment, the challenge of slowness of system can be easily resolved.

Furthermore, Academic libraries should invest in provision of alternate source of power supply to forestall power outage/surge challenges as well as provide adequate training and user support to their staff and user. This will help them to use library information systems effectively and efficiently and overcome system complexity issues.

REFERENCES

Ashish Rao, K., Rao, M., & Shivananda., K. (2018), "Perception of semi-professionals in using ICT in Manipal academy of higher education libraries", DESIDOC *Journal of Library and Information Technology*, *38*(5), 370–375.

Bagchi, M. (2020), "Conceptualising a library chatbot using open-source conversational artificial intelligence", DESIDOC *Journal of Library and Information Technology*, *40* (6), 329–333.

Baker, D. (2008). From needles and haystacks to elephants and fleas: Strategic information management in the information age. *New Review of Academic Librarianship*, 14(1–2), 1–16. doi:10.1080/13614530802518800

Fu, L., Wang, L., & Wu, Z. (2021) Exploring the utilization of information systems in academic libraries: A Systematic Literature review. *Journal of Academic Librarianship*, 47(3), 102345.https://doi.org/10.1016/j.acalib.2021.102345

Kuwata, M., & Aghaei, H. (2021). Exploring the challenges and opportunities of utilizing information systems in academic libraries. *Journal of Academic Librarianship*, 47(3), 102284.doi: 10.1016/j.acalib.2021.102284

Izuagbe, R. (2021). Faculty research performance expectancy of online databases: System design characteristics as facilitating conditions. *Journal of Academic Librarianship*, 47(2), 102318. doi:10.1016/j.acalib.2021.102318

Laudon, K. C., & Laudon, J.P. (2018). Management information systems: Managing the digital firm. (15th ed.). Harlow: Person Educational Limited.

Liu, Q., Wang, L., & Cheng, J. (2021). Analysis of the Utilization of Information Systems in

Academic Libraries for Effective Service Delivery. *International Journal of Emerging Technologies in Learning* (iJET), 16(4), 147-158

Marnewick, C. (2017), "The reality of adherence to best practices for information system initiatives", *International Journal of Managing Projects in Business*, 10(1), 167–184.

Mehra, B., & Brahmi, F.A. (2022). Harnessing the potential of information systems for academic libraries: A review of challenges and solutions. *Library MANAGEMENT*, 43 (1/2), 76-90.

Mills, S., & RAYNER, S. (2022). Information systems and academic libraries: A review of challenges and opportunities. *Journal of Librarianship and Information Science*, 54 (1), 53-68.

Ocloo, S.A. (2021). Challenges and prospects of utilizing information systems in academic libraries: A systematic literature review. *Library Philosophy and Practice*, 2021, 1-21.

Ocloo, P. R., & Sakyi, E. K. (2021). The challenges and prospects of using information systems in academic libraries: A review of the literature. *Journal of Documentation*, 77(1), 158- 177.

Rafique, H., Alroobaea, R., Munawar, B. A., Krichen, M., Rubaiee, S., & Bashir, A. K. (2021). Do digital students show an inclination toward continuous use of academic library applications? A case studies. *Journal of Academic Librarianship*, 47(2), 102298.

Saravanan, T., Subramanian, R., & Sivakumaran, T. (2021). The importance of information systems for library services in academic libraries. *Library Philosophy and Practice*, 2021(1), 1-12.

Stair, R., & Reynolds, G. (2018). Principles of information systems (13th ed.). Cengage Learning.

Tella, A., Edward, I., Akanbi-Ademolake, H. B., & Akande, S. A. (2021). Perception, use and effectiveness of open-source library systems by academic librarians in selected tertiary institutions in Kwara state, Nigeria. *Journal of Academic Librarianship*, 47(2), 102307. doi: 10.1016/j.acalib.2020.102307

Trivedi, M., & Verma, A., (2022). Information systems: Concepts and issues. Springer.

Uche-Ibeabuchi, E., & Okolie-Osemene, G. (2021). Challenges and opportunities of implementing an integrated library system in a university library: A case. *Library Hi Tech*, 39(1), 61-80. https://doi.org/10.1108/LHT-06-2020-01

Strategic Leadership, Repositioning and Sustainability of Mining Enterprises in the Midst of Covid-19 Pandemic and Beyond

Susan Nyegera Laiboni

ABSTRACT

The onset of corona virus found enterprises unawares. As much as the pandemic was unforeseen, business owners and managers were forced to implement radical measures within a very short period. The pandemic forced businesses to enter a crisis mode where some found themselves with dwindling fortunes, while some were bound to close doors and exit the industry. The COVID 19 forced enterprises to deal with the crisis as it advanced with time and it became a major business disruptor. Enterprises implemented measures to protect employees and the business from the adverse effects. Enterprises were destined to forget the ongoing strategic plan and develop short-term plans that suited the current business disruptive phenomenon. Mining enterprises had to establish new strategies to ensure that their enterprises were running without much disruption. Drawing from Crisis Leadership Theory examine how leaders in the mining industry responded to the COVID 19 pandemic. We find that the leadership repositioned their organisations by popularising the "working in shifts" because people had to undertake the mining activities especially with the small-scale miners who use rudimentary tools to extract minerals. This ensured that the mining operations were sustained though on limited scale.

Key words: Corona virus, Enterprise, Leadership

INTRODUCTION

Corona virus is a disease that is transmitted in so many ways. Although medical fraternity as SARS-COV-2 classifies it, it is a new virus to all humanity. It has infected and affected human beings all over the world. The pandemic, which originated from Wuhan, China, was unanticipated, affected human being and spread all over the world within a short time. Enterprises experienced a crisis because of the damage the virus is continuously causing. Businesses lost their employees and others were infected and healed. Lots of money were used and continue to be used to treat people from Covid-19 infections. The disease has a major negative impact both socially and economically. The virus continues to blow most organisations in a new unprecedented direction. This experience forced business leaders to initiate and implement radical measures within a very short period. They had to reposition and refocus their roadmap and move fast by setting priorities that were necessary for survival in a turbulent business environment. Lock-down made most organizations to set up platforms that enabled them to work online. As much as other enterprises could work remotely, mining enterprises used two methods to prevent Covid-19 from spreading, that is working in shifts and wearing masks. Human beings run mining activities, so it is difficult to work remotely. The spread of COVID-19 to countries of the world is a clear indicator that we live in a global village. A crisis can be defined as an occurrence that is unexpected and the associated problem spreads very fast. This is the case of COVID-19; it spread so rapidly and continues to interfere with enterprise performance. The pandemic affected both social and economic spheres of human existence. It became a major threat to all human beings in the world. This occurrence forces enterprise to make decisions that will enable those sail through the pandemic without closing their businesses.

Crisis Leadership Theory
Pearson and Clair (1998) defined "organisational crisis" as a low probability, high-impact event that threatens the viability of the organisation and it is characterized by ambiguity of cause, effect, and means of resolution as well as by a belief that decisions must be made swiftly." Some of the proponents of crisis theory feel that leaders should go beyond crisis and leadership. According to (Cutter et al., (2008); Ungar, 2011; Cohen et al., 2013), "Along with the expansion of leadership, community resilience also consists of collective efficacy, cohesion, place attachment, infrastructure and resources." According to (O' Keefe, 1999; Fairbanks et al., 2007; Cohen et al., 2017). "Along with the expansion of leadership, community resilience also consists of collective efficacy, cohesion, place attachment, infrastructure and resources." Leaders who regularly practice open, two-way communication to build relationships transparency, and decision-making capabilities are more prepared to navigate threats and unfamiliar circumstances." Crisis leadership Theory encourage enterprises to develop plans to guide leadership during and after crisis. The new plans guide a leader to develop a strategy that enables an enterprise to return to normal after the crises. This theory enables leaders to understand the challenges that come with crisis. Crisis leadership inspire leaders to perform well even in times of crisis. What is required is to embrace teamwork, ensure decision-making process is short to ensure that the needed decisions do facilitate the performance of the enterprise. There is need for leaders to ensure all stakeholders are well prepared. Leaders are expected to lead successfully during crisis. A crisis requires that all organisation leaders and its stakeholders to work as a team to protect the same from adverse effect. As much as Crisis Theory of Leadership has many advantages, it also has its limitations. Since crisis are unplanned circumstances, they meet leaders unprepared. There is no available data to guide leaders in most cases. Whatever information that is available could be scantly written or presented with little to learn from the information. Crises present themselves differently. Therefore, it may be difficulty for leaders to use previous crises occurrence information to guide them on a current one. Crisis management involves trial and error defending on the magnitude and uniqueness of a crisis. This is an indication that a leader may have problems in implementing the already crafted plans.

METHODOLOGY

Desktop research was conducted to establish how mining enterprises leaders are undertaking their responsibilities to ensure that they survive through Covid-19 crisis and remain sustainable. The various sources of information are as follows: A publication by Cohen et al., in 2017 emphasised on building resilience during crisis. Wooten (2010), "in times of crisis what is needed is key actions and an impressive leadership".

FINDINGS
Based on the revised literature, a number of approaches are suggested below that if applied, they can enable organisations survive the impact of covid-19

Strategic Resilience
There is need to think about the future of the mining enterprises as they navigate through Covid–19 challenges. Businesses are facing turbulence currently; therefore, it is important for leaders to look ahead because challenges are dynamic as the business environment continues to be shaken by the Covid-19 pandemic. Practising strategic resilience requires leaders to accept the new

normal. Business operating environment is currently fluid and dynamic. Mining enterprises leaders are expected to ensure their business drive through the challenges and ensure its survival through the trials of Covid-19 pandemic.

Organization Resilience

According to Denyer, (2017), "Organisational resilience is the ability of an organisation to anticipate, prepare for response and adapt to incremental change and sudden disruptions in order to survive and prosper." It is an organization's ability to rapidly change or adapt to changes experienced from the external environment. Leaders in the mining industry should ensure that their enterprise has the ability to enhance resilience for them to be able to tackle covid-19 challenges successfully.

Employee Resilience

This is the capacity of employees that is supported by leaders of mining enterprises to positively cope, adapt, and thrive in response to dynamic and challenging environment (Nguyen et al., 2016, Kuntz et al., 2017; Prayag, 2018). Perhaps we can look at employees' resilience at their place of work through the work of Dr Ginsbury a child paediatrician and human development expert; he proposed a model of 7cs that make children resilience. These are competence, confidence, connection, character, contribution, coping and control. These components can be applied in crisis to develop and maintain employee's resilience in times of crisis such as the one covid-19 has caused to businesses. The model includes the following:

Competence: There is need to train organization employees on how to handle stress in this period of Covid-19.

Confidence: According to Dr, Ginsburg, "Confidence is the belief in one's own abilities and is rooted in competence." Encourage employees to enhance self-confidence by motivating each one of them to apply their strengths and enhance self-motivation is important.

Connection: Emphasis the need for communicating to each other so that employees encourage one another.

Character: Encourage your employees to care for each other.

Contribution: Allow employees to contribute their concerns and fears about Covid-19.

Coping: Ensure your employees have developed coping skills, which include social skills and stress reduction skills.

Control: Employees of mining enterprises ought to be told that they have control over their decisions and actions during Covid-19 challenges.

Developing a New Culture in your Enterprise

Changing enterprise culture is not easy but the onset of Covid-19 may push mining enterprises to create a new culture that will help them navigate the challenges caused by Covid-19 pandemic. Enterprise employees are held together by shared values, mindset, and behaviour that encourage conducive environment at the work place. Leaders are out to develop a resilience culture in the organization so that they can be able to handle challenges that come with Covid-19. They encourage all members of the organisation to be strong and optimistic in times of crisis. Leaders are expected to be role models in their organizations. They ought to be honest and show confidence during crisis for them to be able to lead effectively. Establish what the current culture is lacking to cope with the current environmental changes; so that you can build a culture change from the known weaknesses. Leaders should always remind themselves that their followers are observing

how they behave in the times of testing as the challenges unfold. Crisis are very unpredictable; therefore, leaders do not have time to prepare themselves. Additionally, they cannot predict how long Covid-19 pandemic will last. "Internal communication is central to organizational performance, successful change management, and employee engagement and employee well-being." (Ruck, 2020a; Ruck and Welch, 2012, welch, 2011, Vercic et al. 2012). Leaders should focus on internal crisis communication and management during Covid-19.

There is need to carry out reviews of the analysis so that they can come up with informed decisions. They are expected to use all media of communication during Covid-19 to ensure that all employees are informed on a day-to-day basis on issues concerning Covid-19 and performance in the organization. Mission and Vision are the centre point of the organisation that guide and lead them on strategic approach. A wining culture creates a comfortable environment that motivates employees to perform and achieve their goals.

Employees' Health and Security. Employee well-being is important for an enterprise to thrive during COVID 19pandemic. Mining enterprises are based away from the hospitals. Therefore, leaders should develop strategies that are meant to protect their employees from contracting COVID 19.

Transparency and Communication. Mining enterprise leaders need to be transparent as they communicate with the employees and other stakeholders. Communicate regularly what you know about Covid-19 to the employees. Communicate all that you would like your employees to know, even if it is bad news but be careful not to cause panic. Let your employees know that you are in the war concerning Covid-19 together.

Enterprise Agility during Covid-19. There is need for organization to be agile during Covid-19 crisis. Agility is an organization's ability to rapidly change or adapt to changes experienced from the external environment. This enables organizations to survive through business turbulent. Agility can be used as a roadmap, used by organizations to navigate during Covid-19 crisis.

Employee agility. This is the ability to gather and disseminate information about Covid-19 and other environmental changes with speed. Employees have to be open to change and move fast to adapt to the environmental changes and to the new demands. Leaders should develop and encourage employees in their organization to embrace agility. It is the leader's responsibility to enhance the process of change for employees to emulate. Employees are expected to embrace change swiftly and adjust according to the current goals and objectives.

Develop Employee Strengths in Covid-19 period. There is need to develop employees' strengths through encouragement and communication. All members of the enterprise should be encouraged to do what they are assigned, and meet deadlines. This is a very difficult time where employees may put more effort on damage that Covid-19 is causing than concentrating on the work they are assigned to do for the organization.

Road Map of Organisation products and Technology
Mining enterprise leaders undertake internal analysis of their enterprise to come up with a road

map of the products and technology. The road map will be created once they have analysed the processes paths, assets, capabilities and dynamic capabilities. According to ISO 12207, 2008, "organisations are a set of outcomes, the generic activities and tasks needed to achieve the outcomes". This captures what needs to be done to deliver the product within the process." Processes are either functional or administrative. Organisation paths are social processes that are created to set a pattern of the activities undertaken. This ensures a clear process that enables mining enterprises to extract minerals for their customers. Leaders need to analyse both tangible and intangible assets. Tangible assets include machines, money, infrastructure, raw materials and finished products. Intangible assets also known as organisational capabilities. Some of these include: learning, speed, customer base, collaboration, brand identity accountability, collective skills, and expertise. These need to be identified to ascertain whether the organisation do have, enough capabilities to enable it survive in the turbulent environment.

Strategic Repositioning
There is a possibility that most mining enterprises lost their strategic position due to Covid-19. Both internal and external business environments are shaken by Covid-19 crisis. Some enterprises lost their best employees, others lost the owner of the enterprise; others were unable to sell their minerals due to challenges caused by Covid-19. The pandemic has impacted world product consumers in a big way. Consumers spending habits have changed tremendously due to the unforeseen changes that are occasioned by Covid-19 challenges. Mining enterprises should study market trends for them to be able to reposition themselves in the market. Changing consumer habits has to be established by the mining enterprise leader to enable them reposition in the market successfully. Benchmarking is a key tool to enable an organisation to establish what their competitors are doing to reposition themselves in the industry. Leaders should think on how to encourage their employees to embrace and develop innovations as one of the repositioning strategies. Leaders should enhance their dynamic capabilities and competencies, which are important in the current strategic repositioning and in the future business environment.

The more flexible an enterprise is; the more adaptive it is to the environment. It is important that leaders scan the external environment regularly to establish the current trends that will enable them to make informed decisions about the industry. They should also scan the external market to establish new opportunities and threats. The results of the analysis permit the leader to develop short term and long-term objectives. These aids the mining enterprise leaders to align the external demands with the strategy. Scenario analysis approach are used to measure organisation risk. A quantitative tool can be used to assess the impact caused by COVID 19 phenomena. Option analysis will enable the leaders to identify options to drop or take in the external environment. They should also analyse the internal resources and capabilities to establish whether the internal environment of the organisation can cope with the new strategies. In case there are gaps established, leaders are expected to come up with plans and objectives to close the gaps.

Strategic foresight and Innovation
Strategic foresight and innovation are about leaders being able to create radical ideas that enables mining enterprise to develop new ideas, product or services. Leaders are expected to build an enterprise that supports radical ideas. Foresight is defined "as anticipatory thinking which constructively brings an awareness of long-term challenges and opportunities into short-term

decision making (Carleton et al. 2013). William Cockayne and Tamara Carleton in Silicon Valey developed; five planning foresight framework which are perspective, opportunity, solution, team and vision. They assert that *perspective* guide leaders on how to develop a long clear view based on patterns of history of the enterprise.

Leaders explore new promising opportunities. They build a workable prototype for a future solution. Team addresses the talent behind the big idea. Vision focuses on composing and communicating the innovation. System thinkers integrate systems to approach problems as interrelated parts of the overall problem. Leaders should think forward and organise talents that can continuously prepare their enterprises for future crisis. They should invest in talents and nurture them for motivating their employees to continuously succeed in innovation. Leaders need to swiftly shift from Covid-19 crisis management and move to strategic leadership to be able to refocus their enterprise in a competitive approach.

CONCLUSION AND RECOMMENDATIONS

Covid-19 was an anticipated occurrence in the world. The phenomenon has changed our way of thinking and the way we do things. Business leaders are expected to look ahead because Covid-19 has become dynamic, and has affected human beings and businesses. Leaders are expected to practice strategic resilience to win COVID-19 disruption and ensure that the organisation exist in the turbulent times. Employee resilience and agility is required in the midst of Covid-19. The organisation is expected to be resilience and agile too. Organisation culture may be changed to create a new culture that shall thrive in difficult times. Leaders should ensure that their employees are secure and they are protected against Covid-19. Communication and transparency are important to all organisation stakeholders. Encourage and make communication part of the new normal. Leaders are expected to plan for training programs on the new way of working. Organisation leaders should carry internal and external analysis. Examine capabilities, dynamic capabilities and competences to improve on them if necessary. Reposition the organisation to enhance its position in the market. Strategic foresight and innovation to create radical ideas for the organisation to develop new ideas, product or services. Social distancing and wearing a mask should be emphasised in the mining industry. Most of the work is done physically; therefore, employees cannot work remotely as they are discharging their duties.

REFERENCES

Carleton, R.N., Thibodeau M.A., Teale M.J.N., Welch P.G., Abrams Robinson, T., Asumundson J.G. (2013, March 1,). The Center for Epidemiologic Studies Depression Scale.

Cohen, O., Leykin, D., Lahad, M., Goldbey, A., and Alaronson -Daniel, L. (2013). The conjoint community resilience assessment measure as a baseline for profiting and predicting Community resilience for emergencies. *Technol, Forecast. Soc. Change* 80 1732-1741 doi: techfore. 2012.12.009.

Cohen, O., Goldberg, A., lahad, M., and Aharonson-Daniel L. (2017). Building resilience: the relationship between information provided by municipal authorities during emergencies and community resilience. *Technol Forecast. Soc Change* 121, 119-125 doi. 10.2016/j.techfore 2016.11.008.

Denyer, D. (2017). Organizational Resilience. A Summary of academic evidence, business

insights and new thinking' BSI and Cranfield School of Management.

Fairbanks, J., Plowman, K.D., and Rawlins, B.L. (2007). Transparency in government communication. *J. Public Affairs*, 23-37.doi.10.1002/pa. 245.

Kuntz, J.R.C., Malinen, S. and Näswall, K. (2017). Employee resilience; directions for resilience development, Consult, *Pschol. J.*69, 223-242. Doi: 10.1037/<pb0000097.

N, ǎswall, K., Kuntz, J., & Malinen, S. (2015). Employee resilience scale (EMPRES). Measurement properties. *Resilient Organization Research Report* 2015/04. Christ Church; University of Canterbury.

Nguyen, Q., Kuntz, J.R.C., Naswati, K., & Malinen, S. (2016). Employee Resilence and Leadership styles: the Moderating Role of Proactive Personality and Optimism. J. *Psychology*.45. 13-21.

Prayag, G. (2018). Symbiotic relationship or not? Understanding resilience and crisis management in Tourism. *Tour. Manage. Prospect.* 25.133-135.doi: 10.1016/- j.tmp.2017.11.012.

Ruck, K. (2020a). Internal Communication and the associations with organizational purpose, culture and strategy, in Ruck, K. (ed). Exploring internal communication towards informed Employee voice. , Edition Abingdon; Routledge.

Ruck. K., Welch, M. (2012). Valuing internal communication Management and employee perspectives. *Public relations Review.* 38 (2), 294-302.

Ruck, K., Welch, M., Menara, B. (2017), Employee voice: An antecedent to organizational engagement? *Public Relations Review*. (43)5, 904-914.

Ungar, M. (2011). Community resilience for youth and families: facilitate physical and social capital in contexts of adversity, child youth service. Rev. 33.1742-1748. Doi: 10:1016/j. child youth.2011.04.027.

Vercic, A.T, Vercic, D. Sriramesh, K. (2012). Internal communication. Definition, Parameters, and the future. *Public Relations Review* 38 (2), 223-230.

Welch, M. (2011). The evolution of the employee engagement concept: Communication implications, corporate communications: *An international Journal,* 16(4), 328-346

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School of Computer Science & Information Technology Bachelors of Computer Science & Information Technology	81,500	76,500	78,500	76,500	78,500	76,500	78,500	76,500
Bachelors of Business Information Technology (BBT)	78,000	73,000	75,000	73,000	75,000	73,000	75,000	73,000
School of Education Bachelor of Education (BED-Arts) Bachelors of Education (BED – Arts) Regular	62,000	57,000	59,000	57,000	59,000	57,000	59,000	57,000
Bachelor of Education (BED – Arts) (School Based)	32,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000

Post graduate Diplomas (other payment Kshs. 5,000 for postgraduate payable once)

Monitoring and evaluation	Kshs. 40,000/=
Education	Kshs. 40,000/=

Bridging Courses

Mathematics	Kshs. 8,000/=
English	Kshs. 8,000/=

1. DIPLOMA IN VARIOUS DOMAINS - 1 YEAR (3 SEMESTERS)

School of Business Management	1st Sem.	2nd Sem.	3rd Sem.
Accounting	32,000	27,000	29,000
Sales and marketing	32,000	27,000	29,000
Banking And Finance	32,000	27,000	29,000
Human Resource Management	32,000	27,000	29,000
Actuarial Science	37,000	32,000	29,000
Islamic Banking and Finance	34,000	29,000	34,000
Procurement & Supplies Management	34,000	29,000	31,000
Project Planning & Management	34,000	29,000	31,000
Management of NGO's	34,000	29,000	31,000
Credit Management	37,000	32,000	31,000
Governance and ethics	34,000	29,000	34,000
Microfinance	34,000	29,000	31,000
Risk Management and Insurance	34,000	29,000	31,000

2.

Department of Hospitality & Tourism Management	1st Sem.	2nd Sem.	3rd Sem.	4th Sem.	5th Sem.	6th Sem.
Leisure Tourism & Hotel Management	36,000	31,000	33,000			
Food & Beverage Management	36,000	31,000	33,000			
Nutrition and Dietectics	34,000	29,000	31,000	34,000	29,000	31,000

3.

School of Computer Science & information Technology	1st Sem.	2nd Sem.	3rd Sem.
Computer Science & Information Tech.	34,000	29,000	31,000
Business & Information Technology	34,000	29,000	31,000

4.

School of Education	1st Sem.	2nd Sem.	3rd Sem.	4th Sem.
Diploma in education (Arts) School based	18,000	18,000	18,000	18,000
Diploma in education (Arts)	34,000	29,000	31,000	29,000
Special Needs Education	36,000	31,000	33,000	31,000
Early Childhood Development Education	36,000	31,000	33,000	31,000
Sports Science Education.	36,000	31,000	33,000	31,000

5.

Department of Arts & social Science	1st Sem.	2nd Sem.	3rd Sem.
Development Studies	36,000	31,000	33,000
Agriculture	36,000	31,000	33,000
Environ . mgt & Natural Resources	36,000	31,000	33,000
Social work & Comm. Development	36,000	31,000	33,000
Criminology and Criminal Justice	36,000	31,000	33,000
Diplomacy and international Relations	36,000	31,000	33,000
County Resource Management	36,000	31,000	33,000
Event Management	36,000	31,000	33,000
Conflict Management and Peace Studies	36,000	31,000	33,000

Certificates - 8 Months (2 Semesters)

1. School of Business Management	1st Sem.	2nd Sem.
Business Management	22,000	22,000
2. School of Computer Science & Information Technology		
Computer Science & Information Technology	22,000	22,000
Business and Information Technology	22,000	22,000

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3. Department of Arts & Social Sciences	1st Sem.	2nd Sem.
Criminology & Criminal Justice	22,000	22,000
Certificate in Social Work	22,000	22,000
4. Department of Hospitality & Tourism Management		
Leisure, Tourism & Hotel Management	22,000	22,000
Food and Beverage Management	22,000	22,000

Short Courses Available (2 Months)

Pastry and Cake Baking	12,000
Customer Service	10,000
Events Management	12,000
Public Speaking	10,000
Career Coaching Program	10,000
Project Management	12,000
Monitoring and Evaluation	10,000
Advanced Excel	10,000
Digital Marketing	10,000
Leadership and Management	10,000
Communication Skills	10,000
SPSS	10,000
Criminal Psychology	10,000
Forensic Methods and Techniques	10,000
Guiding and Counseling	10,000
COMPUTER DEPARTMENT	
CCNA	15,000
CYBER SECURITY	15,000
ETHICAL HACKING	15,000
ICDL	15,000

Distance learning

Credit transfers & exemptions allowed*
(Applies only in school of business)

Kshs. 40,000/=

Weekend & Part Time Classes Also available