

IMPROVING PERFORMANCE OF PUBLIC UNIVERSITIES IN KENYA: DOES INNOVATIVENESS, RISK-TAKING, PRO- ACTIVENESS, AND SELF-RENEWAL MATTER?

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ABSTRACT

Purpose of Study: The purpose of this study was to investigate the effect of intrapreneurial strategies on performance of public universities in Kenya. The study investigated the effect of innovativeness, risk-taking, pro-activeness, and self-renewal on performance of public universities, and was guided by Schumpeter innovation and the resource-dependency theories.

Statement of the Problem: Over time inadequate funding has adversely affected the performance of Kenyan public universities with only one Kenyan public university ranking among top 200 universities in Africa in 2023 and earlier years, in the Webometrics ranking. Adoption of intrapreneurial strategies has been found to be key to performance in various sectors, including public universities in developed countries.

Methodology: The study used a combination of descriptive and explanatory research designs. The unit of analysis was 36 public universities in Kenya. A total of 400 respondents, chosen using multi-stage sampling was the unit of observation. Data was collected using a semi-structured questionnaire. Multiple regression models were used to test the association between variables.

Result: The study revealed that innovativeness ($\beta=0.146$, $p=0.013<0.05$), risk taking ($\beta=0.065$, $p=0.032<0.05$), pro-activeness ($\beta=0.163$, $p=0.023<0.05$) and self-renewal ($\beta=0.446$, $p=0.000<0.05$) have a positive and significant relationship with performance of public universities in Kenya.

Conclusion: The study concluded that the adoption of intrapreneurial strategies improves performance of public universities. The study, therefore, recommends Vice-Chancellors of public universities to adopt innovativeness, pro-activeness, risk-taking and self-renewal as these have a significant and positive relationship with performance.

Recommendation: The study recommends the Ministry of Education, Government of Kenya and relevant policy makers to institute reforms and organise forums that promote intrapreneurship adoption within public universities, as this promotes overall university performance.

Keywords: *Intrapreneurship, Intrapreneurial Strategy, Organisational Performance, Public University Pro-Activeness, Risk-taking, Self-renewal*

INTRODUCTION

The Kenya Vision 2030, a Government of Kenya (GoK) development blueprint, recognises universities as the engine to drive the production of qualified professionals who will steer the Vision 2030 agenda for development (Mukhwana, Too, Kande & Nandokha, 2020). Universities support development by producing meaningful and relevant human capital, capable of producing prosperity and sustainable employment (Kelechi & Vera, 2020). In Kenya, there are 36 public universities, which rely heavily on state funding. However, in the past few years, there has been a decrease in state funding compared to rates of enrolments, thus undermining the public universities' expansion plans (Shisia, Sang, Matoke & Omwario, 2014). Measures adopted to curb the funding quagmire such as the Maximum Differentiated Unit Cost (DUC) whereby universities are allocated budgets based on the number of undergraduate students they register for the state-funded regular programme, and the kinds of courses they take, are yet to bear fruits. Infact, capitation given to universities by the government have reduced to margins of about 20% every year, since 2019. Consequently, public universities have continued accumulating a huge funding deficit, making it difficult for them to deliver on their mandates (The National Treasury Website, 2022).

The Kenyan government, through the Ministry of Education, has reformed the education sector, thus improving the higher education sector. The recent unveiling of the New Funding Model is an effort towards addressing the myriad of challenges facing public universities, by ensuring that eligible Kenyan students are provided with some form of financial support to fund their education. Through this model, vulnerable and extremely needy students are assured of access to education, because their tuition would be paid for. While the New Funding Model aims to promote equity and access to higher education, every applicant will receive funding depending on their level of need, and degree of vulnerabilities (HELB 2023; MoE, 2023). This new funding model has breathed life to public universities that would otherwise collapse due to financial challenges (MoE, 2023).

The key aim of government interventions in university education is to promote excellence and match international standards as a key driver towards improved performance (Subiyatko, Widyanti & Syaharuddin, 2020). Kenyan universities are lowly ranked in the global market with the first institution, the University of Nairobi, ranking at position 1069 in the 2023 global webometrics

ranking (Web Ranking, 2023). Universities are tasked with the objective of disseminating facts, through education, exploration and extension events. However, like any other type of organisation, challenges are evident. Subiatko et al., (2020) identifies the major challenges facing public universities as there being too lengthy decision-making processes, non-competent graduates, outdated technology and teaching pedagogies, weak administration, lack of novel products, low research development and leadership engagement, and a lack of openness to new ideas. Public universities in Kenya should aim to change from public service organisations to market-driven organisations in a bid to improve their performance (Kiriri, 2022). This can be done through intrapreneurship.

Intrapreneurship is the procedure of developing novel items that create value, by dedicating organisational resources and time. It is an opportunistic, risk-tolerant, value-driven and creative activity that promotes organisational re-birth, growth and transformation (Njiru, 2013). Intrapreneurship provides opportunities that solve the challenges facing organisations. Additionally, the development of novel marketplaces, managerial systems and know-hows for execution of organisational tasks is perceived as intrapreneurship (Njiru, 2013). Intrapreneurs champion new ideas by closely engaging with daily activities in an organisation (Pandey, Gupta & Hassan, 2020). For intrapreneurship to thrive in an organisation, intrapreneurs have to exist; these are the individuals who take risks to change knowledge into an end product. The intrapreneurs identify new thoughts, use creativity and utilise opportunities through the adoption of intrapreneurial strategies (Nagappan, Balakrishnan & Saini, 2019).

Intrapreneurial strategies are embedded in a managerial attitude through risk-taking, pro-activeness, innovativeness, and self-renewal (Okangi, 2019). The strategies are adopted simultaneously and creatively expose opportunities to create value and bring growth in an organisation (Moghaddas, 2019). Innovation, involves generating, development and commercialisation of new ideas and transforming them into useful products as highlighted by Ahuja and Lampert, (2016). Ludeke, (2018) and Almasri and Ahmad, (2020), highlight that public universities are adopting social media branding, blended and digital delivery of content and communication.

The development of new products through innovation needs a forward-looking perspective that anticipates possible future changes in the market. This is through a process regarded as pro-activeness (Lisboa, Silva, Duarte, Ferreira, Andred, Lorpes & Sobral, 2019). The propensity of public universities to anticipate and act towards changes greatly constitutes pro-activeness (Gauthier, Cohen & Meyer, 2021). All intrapreneurial activities exist in an unpredictable risky environment. The public universities engage and willingly commit significant resources to new ventures. In this risk-taking environment, leaders do not punish employees because they failed; rather, after failure, the leadership undertakes a vigorous search for more brave suggestions for the benefit of the organisation (Almasri & Ahmad, 2020).

As public universities undertake new ideas, they re-organise, and redefine business concepts, and implement system-wide changes in a process of self-renewal. It is embedded on strategy reformulation (Gupta & Acharya, 2017). Intrapreneurial strategies revolve far and beyond normal routine work and across business boundaries. They demand co-ordination, teamwork and individual efforts (Ben Hador & Klein, 2019, Klofsten, Urbano & Heaton, 2021). When adopted, intrapreneurial strategies produce a positive impact for public universities in hostile and dynamic environments. Public universities are able to diversify their income structure, attract local and

foreign students, and convey prestige on their teaching and research (Klofsten *et al.*, 2021, Mamun & Fazal, 2018).

PROBLEM STATEMENT

The Kenyan public university sector has expanded exponentially resulting to an increase in the number of students who seek higher learning. Notably, as students' numbers have gone up steadily, the number of academic staff have dwindled, with one professor teaching 563 students every year; and only 230 PhDs graduating against a benchmark of 2,400 PhDs graduands, annually. This has led to a decline in productivity, research output and university teaching capacity (Odhiambo, 2018). Based on the Unirank (2021), only three public universities in Kenya made it to the best 100 hundred universities in Africa. Kenyan publications rank in the lower quartile in global peer reviewed journals. Only two public universities in Kenya ranked among the first 5250 universities in the world, according to Scimago Institutional Rankings, (2023).

Additionally, the public university sector is faced with a high level of mismatch in skills possessed by graduates and what employers need ((Mukhwana *et al.*, 2020; Commission for University Education, 2021). A decline in technical subjects' enrolment which ought to provide a vast range of employment opportunities has worsened the situation (Odhiambo, 2018). A report by Human Development Index (2021), indicates that the level of graduate employability in Kenya has continued to decline, with a margin of about 4% every year, since 2018; with the trend expected to worsen (Mukhwana *et al.*, 2020; KIPPRA, 2021). Funds determine the quality of education, human resource, research, creativity, innovation and service delivery. There has been a decline in state funding to public universities over the years. Donors have persistently shunned away from funding Kenyan public universities. This has resulted to poor rankings in both regional and international metrics, low graduate employability, low research output and low programme funding. These challenges can be addressed through adoption of intrapreneurship in the form of innovativeness, pro-activeness, risk-taking and self-renewal in public universities (Odhiambo, 2018). Though not a new issue, there is a need to focus on evaluating the impact of intrapreneurial approaches on performance of public universities in Kenya, in a bid to solve the myriad of challenges facing these institutions, which according to societal concerns, should provide intellectual, social and economic benefit.

REVIEW OF LITERATURE

This section reveals the theories utilised in the study, and empirical evidence from previous research around the area of intrapreneurship and performance.

Theoretical Review

The study was guided by the Schumpeter innovation, Opportunity-based Entrepreneurship, Entrepreneurial Event and Resource Dependency theories.

Schumpeter Innovation Theory

Schumpeter Innovation Theory assumes a circular flow of the economy and perfect competition. Continuous adaptation to small external changes absorbed through company routine behaviour is what Schumpeter termed as innovation. According to Schumpeter, you either innovate or perish, and the reward for intrapreneurship is profit. He arguably insists that there should exist an urge to overcome, instinct to fight, and ability to demonstrate superiority to others for the sake of success (Mehmood, Alzoubi, Alshurideh, Al-gasaymeh & Ahmed, 2019).

As technology changes, the production of old products declines and so do the industries. Innovation keeps enterprises growing. Schumpeter integrates superior performance with innovation, which results to a different utilisation of the available resources in the market (Schumpeter, 1934). Organisations, including public universities, should always be on the lookout for new business opportunities. According to this theory, innovation should exist as a strategic agenda in corporations, and not a getaway in times of crises (Shakina & Barajas, 2020).

The Schumpeterian intrapreneur has a pro-active behaviour of continuously looking for changes and opportunities for introducing new products and services (Hoang & Ngoc, 2019). Employees in an organisation should anticipate changes. Leadership style and external environment affect intrapreneurship due to the allocation of resources. Compensation, communication, management support, autonomy and resources are internal antecedents that are pertinent to intrapreneurship adoption by employees (Sulaiman, Razak, Kamaruzaman & Yusof, 2021).

The allocation of resources encourages risk-taking among employees. They seek bold and new suggestions for the benefit of the organisation. In this risk-taking environment, leaders should not punish employees because they failed (Almasri & Ahmad, 2020). Instead it should be a continuous activity that involves an intrapreneur moving boundaries and changing the current organisation forms and methods of doing business in a process called self-renewal (Herlinawati & Machmud, 2020). This theory addresses innovativeness, pro-activeness risk-taking and self-renewal intrapreneurial strategies and how they influence organisational performance.

Opportunity Based Entrepreneurship Theory

Postulated by Drucker (1985), the Opportunity-based entrepreneurship theory advances that intrapreneurs seize the changing opportunities, in instances such as customer tastes and technology, amongst others. The intrapreneur perceives a change in the business and develops a new business from it (Diandra & Azmy, 2020). Being a vigilant observer of change, the intrapreneur responds to the change and seizes the chances it offers (He, Nazari, Zhang & Cai, 2020). According to Drucker's Opportunity-based Entrepreneurship Theory, organisations are inclined to change-led opportunities, rather than problem-solving. Stevenson (1990) integrates resourcefulness to Drucker's Opportunity-based Entrepreneurship Theory. Stevenson argued that organisations and institutions should take advantage of resources such as human, financial and physical infrastructure, when presented to them.

Opportunities are endless: life is a series of opportunities, just like the waves of the sea and therefore, managers need to be innovative, pro-active and practice continuous self-renewal and take risks (Dangote, 2005). The opportunities that come an intrapreneur's or organisation's way, may dictate how quickly they grow or advance. They are set up as an interjection that closes one phase and starts the next. Employees need space to exploit the opportunities for the benefit of the organisation. The creative ones are given a chance to grow and initiate overall business change. Therefore, there is need for pro-activeness and self-renewal in every aspect of an organisation so as to remain productive. Pro-active employees go beyond their job descriptions and engage on ideas that are futuristic, by observing current trends and anticipated changes (Almasri & Ahmad, 2020). Opportunity-based Entrepreneurship Theory is key in addressing the need for public universities to take risks at every opportunity, be pro-active and continuously practice self-renewal to ensure proper utilisation of resources, which lead to improved streams of revenue, efficiency in operation and improved performance.

In the availability of intrapreneurial opportunities, the introduction of novel products and services, amenities, raw resources, markets and organisational approaches is bound. Public universities can introduce new programmes and courses and other internal products in a bid to improve performance (Eckhardt & Shane, 2003). This theory, therefore, explains the association between self-renewal, innovation, risk taking and pro-activeness on Kenyan public universities performance.

Entrepreneurial Event Theory

This philosophy was advanced by Shapero and Sokol (1982) as a basis for defining entrepreneurship incorporation in an organisation. This theory assumes that two requirements are a necessity before opening a business. First an individual must notice that opening the business is reliable, that is, the business is both smart and attainable. Further, the individual should consider the initiative of starting the business in an unbiased way. The movement from comfort to the establishment of the business will bring a change in behaviour, which will lead to the uptake or dismissal of the business idea (Shapero & Sokol, 1982).

This is the Entrepreneurial Event, where apparent viability, desirability and tendency to act towards an idea, affect the purpose and behaviour of an intrapreneur to start a business (Davids, 2017). Shapero and Sokol (1982), claim that intrapreneurship relies on insights of attractiveness, viability, and the tendency to act upon a business idea. Entrepreneurial Event Theory is therefore founded on two principles, which are attractiveness and feasibility of the business idea (Ramayah, Rahman & Taghizadeh, 2019). This Theory aided the study as it encompassed the essentials for public universities to ultimately perceive feasibility, desirability and attractiveness of an idea, so as to have a propensity to act towards the declining performance they are experiencing. To do so, they could adopt innovativeness, pro-activeness, self-renewal and risk-taking. Additionally, the organisation should support employees to adopt these strategies (Ramayah et al., 2019).

Resource Dependency Theory

Established by Pfeffer and Salancik (1978) the Resource-Dependency Theory postulates that an organisation's performance will depend largely on its resources and the operating environment. The Theory primarily focuses on how the organisation depends on its surroundings for vital resources that result in its performance. The Theory also acknowledges the influence of external factors on organisational behaviour. Leadership in an organisation reduces the state of indecisiveness and dependency, by administering control of indispensable resources within the organisation.

Organisations are regularly on the look out to promote their performance over others (Yii Renko, Denoo & Janakiraman, 2020). According to Davis and Cobb (2010), RDT proposes that better organisational performance may come through proactively influencing and managing the organisation's external operating environment to reduce risk exposure. The Resource-Dependence Theory can explain how organisations behave. "Behaviour" is used here to refer to a broad range of activities, including actions and decision-making, as well as "non-decision-making", and the outcomes of actions and decision-making, such as organisational structures and operating environment. Organisational disparities in behaviour can be linked to variations in management choices, which are impacted by internal and external environment, including who has control over crucial resources. Controlling essential resources confers power, and power shapes behaviour. Arguably, the resources possessed by public universities will determine their performance in the

industry. This theory was critical in explaining the relationship between intrapreneurial strategies, performance and operating environment variables.

Empirical Review

This segment presented the pragmatic study based on innovation, risk-taking, pro-activeness, self-renewal, organisational support and operating environment.

Innovativeness and Performance of Public Universities

The first objective of the study was to investigate the effect of innovativeness on performance of public universities in Kenya. The objective hypothesis was as follows:

H₀₁: Innovativeness has no significant effect on performance of public universities in Kenya

The Schumpeterian model developed in the 1930s has fueled heated debate on whether innovation is critical in an organisation. Classical literature in business and economics postulate that innovativeness promotes superior performance. Ferreira and Lisboa, (2019) agree that innovativeness breaks away from the tried and positive, and brings into birth a vision that overcomes competitors and boosts the public university's performance. Additionally, Ramadani, Hisrich, Abazi-alili, Dana Panthi and Abazi-Bexhetti, (2018) recognise innovativeness as a core competency component that contributes to an organisation's success. Innovativeness is, therefore, undoubtedly a building block for the public university into the future; and where the public university cannot perform innovatively, the risk of failure is increased.

Nguyen-Vann and Tavasso, (2015) argued that innovativeness creates a sustainable competitive advantage by providing a direction towards specific resource utilisation. Despite the outcomes of improved performance, it is worth noting that organisations run towards innovation when they are in crisis (Shakina & Barajas, 2020). Innovativeness has proven to be a crucial factor in dealing with challenges facing an organisation as it exploits the constraints in the environment and uses the constraints as opportunities towards organisational success (Gozukara & Colakoglu, 2016). Kasim and Noh, (2012) argue that in order for public universities to obtain efficient and effective operations, while providing products and services that meet consumer demands, in this regard employability, the public university should change the way of conducting its operations.

The change in operation is reflected through a process known as innovativeness (Handoko et al., 2014). There is a need for innovativeness in the higher education sector, as it will yield maximum outputs with minimum inputs. The diminishing resources and adequate skilled manpower in the public universities calls for innovativeness (Vivona, Demirciogiu & Raghavan, 2020). Bustinza, Gomes, Vendrell-Herrero & Baines, (2019) recognise that the development of new products, services and technologies is critical to improved performance. As new products, services and technologies are introduced, organisational silos that hinder development are broken and new ideas are accepted (Bustinza et al., 2019).

Fadda (2018) studied the effect of innovation strategies on organisational performance, a case of the Italian tourism industry. The survey was conducted in the Sardinian lodging industry, whereby 224 questionnaires were gathered. This study's findings, which were obtained using logistic regression analysis, showed that an organisation's inventiveness and aggression had a significant impact on its performance. Self-reported data was utilized to gauge a company's performance, and the results were restricted to the context of accommodation in Sardinia. Further research works

may not replicate the analyses in public universities, thus presenting contextual and methodological gaps. This study, therefore, filled the gap by studying public universities in Kenya.

Abebaw, Mammo, Zerayehu and Ezezew (2022) assessed factors affecting the innovation ecosystem in public universities in Ethiopia. The overall objective of the study was to examine the innovative behaviour of Ethiopian public universities, with an emphasis on identifying the factors that motivate innovation and research production at these institutions. Using panel data analytical frames, the determinants of innovative activities were examined. The outcome shows that research yield is influenced by the age of the institution, the quantity of international university collaborations, research funding, the quantity of PhD programmes, and the quantity of completed research projects. On the other hand, the number of programmes, MSc/MA employees, and foreign relationships all have an impact on innovation. The study used a panel data analytical frame presenting a methodological gap, which was filled in this study by the use of multiple regression model, with both moderating and mediating variables.

Linyiru and Ketyenya, (2017) reviewed the effects of innovation on the performance of Kenya's state-owned firms. The study used a purposive sample of 55 firms. Descriptive statistics were used to assess the data acquired. Innovativeness was a crucial element in predicting the performance of state-owned firms. According to the study findings, a company's ability to innovate might be improved through both learning and entrepreneurship orientation. The current study concentrated on higher education, and employed multiple regression analysis to investigate the impact of innovation on performance of public universities in Kenya.

Risk-taking and Performance of Public Universities

The second objective of the study investigated the impact of risk-taking on performance of public universities in Kenya, and the objective was hypothesized as follows: -

H₀₂: Risk-taking has no significant effect on performance of public universities in Kenya.

Risk-taking entails the readiness of the public university to take advantage of opportunities, utilise resources and invest in projects that exist in an uncertain environment, and have uncertain returns (Salamzadeh, Tajpour & Hosseini, 2019; Hamdan & Alheet, 2020). It is the propensity of the organisation's administration to take business-related perils in an uncertain commercial setting. Business persons usually categorise the situations in business as extremely or less risky (Kreiser, 2013). Risk-taking behaviour includes enormous resource commitment (Shihab, Wismiarsi, & Sine, 2011). Furthermore, entrepreneurs take intended risks that lead to monetary benefit (Le Roux & Bengesi, 2014).

Tang and Murphy (2012) argue that public universities fail to undertake risky ventures that are innovative due to fear of failure while, those that are able to take risks, improve their businesses holistically (Fadda, 2018). In addition, public universities even imitate others in the same industry to obtain some benefit and improve performance. This suggests that risk-taking behaviour is unquestionably related to a public university's performance. Anlesinya, Eshun, and Bonuedi (2015) established a noteworthy association amid success and risk-taking behaviour.

The ability to take risks enables public universities access resources in the marketplace. Intrapreneurial risk-taking behaviour increases an organisation's success (Brettel, Chomik, & Flatten, 2015). However, a public university's beliefs affect its risk-taking behaviour and consequently, its success. Additionally, the risk-taking behaviour of a public university emphasises the establishment of healthy human relationships in the organisation. This brings about shared

beliefs, which in turn improves risk-taking behaviour and the university's overall success. Risk-taking in a public university is expressed through decision-making, risk-taking proclivity and boldness (Gibb, 2010).

Pro-activeness and Performance of Public Universities

The third objective of the study was based on the premise;

H₀₃: Pro-activeness has no significant effect on performance of public universities in Kenya.

Pro-activeness enables public universities to become early movers of products and services, thus gaining competitive advantage in the marketplace. Pro-activeness is the attitude and desire by the university to be the leader in the industry, and not just be a follower of its competitors (Oladimeji, Sanjo, Abosede, Julius, Ezo & Uchenna, 2019). The propensity of public universities to anticipate and act towards changes greatly constitutes pro-activeness (Gauthier, Cohen & Meyer, 2021). Pro-activeness is seen in motivation and engagement of a public university's stakeholders by committing resources and improving personal relationships (Ness *et al.*, 2020).

Pro-activeness of public universities forces the macro environment to focus on change. This helps to obtain a competitive advantage and increased revenue (Gauthier *et al.*, 2021). Pro-activeness is embedded in an organisation's competitive actions, new techniques and competitive posture (Ness *et al.*, 2020). Pro-active behaviour consists of efforts to advance present conditions or to generate new conditions. Comfort attracts failure while being pro-active translates to gains. Therefore, pro-active public universities that expect changes and act on the customer needs generate a benefit over other universities. It is very important for public universities to shift to more pro-active and continuous engagement with stakeholders to achieve a competitive advantage and better performance (Jiménez-Barrionuevo, Molina & García-Morales, 2019).

Okangi (2019), assessed pro-activeness on profitability of Tanzanian construction enterprises. This study found out that pro-activeness is a good and essential driver of the enterprises' profitability. The findings suggested that pro-activeness is critical to increasing the profitability of businesses in emerging countries. Awais and Fantazy (2018) studied the consequence of pro-activeness on supply chain sustainability and performance in Pakistan. The study targeted 242 industrial firms and found out that performance is positively influenced by pro-activeness. Herhausen (2017) examined the joint contribution of pro-activeness on corporate performance of 167 firms in manufacturing and service industries in Switzerland. Descriptive exploration design was used where data was collected through a questionnaire and desktop review. Measures of pro-activeness included identification of additional needs of customers, search for opportunities and incorporating solutions to unarticulated customer needs.

Self-renewal and Performance of Public Universities

The fourth objective of the study was hypothesised as follows: -

H₀₄: Self-renewal has no significant effect on performance of public universities in Kenya

Self-renewal is a transformational behaviour that creates flexibility in responding to market needs. Self-renewal is very necessary to improve a public university's performance. Self-renewal consists of the alteration of processes in an organisation through the process of changing key beliefs, reformulation of policies, redefinition of business, and restructuring (Jiménez-Barrionuevo *et al.*, 2019). Many authors recognise the importance of self-renewal. A study by Kumar and Parveen (2020) on the effect of self-renewal on employee intrapreneurial behaviour in India found out that

self-renewal promotes superior organisational performance. The study also influenced the need for organisational support as a driver for self-renewal. Management support in organisational elements and technology prospects had a good and significant effect on intrapreneurship.

Moghaddas (2019) studied the effect of self-renewal on entrepreneurship in university libraries in Iran. The results of the study exposed that the self-renewal and organisational-enabling aspects of intrapreneurship were not embraced in university libraries, despite the fact that the influence on organisational performance by self-renewal was confirmed. Skarmeas, Lisboa and Sarikadis (2016) evaluated the impact of self-renewal on performance of 1271 Portuguese export producers and concluded that self-renewal had a noteworthy consequence on the performance of Portuguese export producers.

RESEARCH METHODOLOGY

The study used two of the research designs - the descriptive and the explanatory. According to Musau, Muathe and Mwangi, (2018), the descriptive research design is used to explain in-depth the characteristics of the study variables, while the explanatory research design establishes correlation between the study variables. The descriptive research design was used in the study to explain in-depth the intrapreneurial strategies, organisational support, operating environment and performance of public universities in Kenya; while the explanatory research design was used to confirm the causal association between the various study variables - intrapreneurial strategies, organisational support, operating environment and performance of public universities in Kenya.

The study unit of analysis were the 36 public universities spread across several counties in Kenya, hence it was challenging to obtain a sampling frame. This is because the study population was scattered and the geographical area under study was vast. This necessitated the use of multi-stage random sampling as argued by Muathe, (2010). According to Chauvet (2015), the multi-stage sampling approach is more feasible in a scattered population, as it saves both costs and time during primary data collection. Simple random sampling was utilised in the first step to ensure that each member had the same chance of being selected. From the sampling technique, a total of 20 public universities were obtained. In stage two, the sampling approach was utilised to decide the number of departments from each public university in Kenya. This provided the departments from the 20 universities. From these 20 universities, the Slovin's formulae helped to obtain the sample size of 400 respondents.

The Slovin's formula was utilised as it permits a high degree of accuracy and helps to promote sample adequacy (Awino, Kilika & Muathe, 2022). The formula is stated below:

$$n = \frac{N}{1 + Ne^2}$$

Where; n = sample size

N = Population

e = Margin of error

In this case our population is 3600, which gives a sample size of 400.

The study utilised primary data from the sampled public universities in Kenya. The data was collected using a self-administered semi-structured questionnaire, which consisted of a 5-likert scale with 8 sections. The sections had information regarding university background, innovativeness, risk-taking, pro-activeness, self-renewal, and public university performance respectively.

Prior to data collection, a pilot study was conducted in Meru University of Science and Technology. The researcher ensured face and content validity by subjecting the questionnaire to grammar and double checks, and seeking professional guidance from the two supervisors and experts in the field of entrepreneurship. This is in line with recommendations from Muathe, (2010). Reliability was checked using two steps. The researcher utilised the items in the literature of previous studies, and these were utilised in the current study. Secondly, the Cronbach Alpha was used to estimate the internal consistency and reliability (Muathe, 2010).

The obtained data was properly cleansed and coded. The STATA 23.0 tool was used to analyse the data. Descriptive statistics in the form of mean scores, standard deviation and percentages were computed to allow meaningful description of how scores were spread through the application of few indices. Before the regression analysis, the regression data was validated to ensure that the assumptions of the regression analysis were not violated. The sample adequacy, normality, confirmatory factor analysis, outliers, linearity, multi-collinearity, auto-correlation and homoscedasticity tests were done.

The study utilised multiple linear regression to study the influence of intrapreneurial strategies on public university performance. According to Kennedy, Farell, Paden, Hill, Jolivet, Cooper and Schindler (2011), multiple linear regression models is effective in forecasting dependent variable which is continuous and has a variety of independent variables. The regression model is shown below:

$$\text{University Performance} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon. \dots\dots\dots 1$$

Where;

Y = University Performance combined index

X₁ = Innovativeness

X₂ = Pro-activeness

X₃ = Self-renewal

X₄ = Risk-taking

B₀ = Constant

B_i = Beta Coefficient for relevant variables

E = Error Term

It is worth noting that the research was conducted in compliance with ethical norms and procedures.

4.0 Findings and Discussion

This section presents the multiple regression findings and their discussion.

4.1 Multiple Regression Analysis

The study was founded on the premise that intrapreneurial strategies have an effect on performance of public universities in Kenya. To test these relationships, multiple linear regressions were conducted at 95% confidence level. This section presents the results of the hypotheses tests.

Intrapreneurial Strategies and Performance of Public Universities in Kenya

The study sought to determine the influence of intrapreneurial strategies on performance of public universities in Kenya. The regression of the compound index of the independent variable measures (innovativeness, risk-taking, pro-activeness and self-renewal) on the performance of public universities in Kenya, was done. The results are presented in Table 1a.

Table 1a: Intrapreneurial Strategies on Performance of Public Universities

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.758 ^a	.575	.569	.4705050

a. Dependent Variable: Public University Performance
 b. Predictors (Constant): composite index of intrapreneurial strategies (innovativeness, risk-taking, pro-activeness, self-renewal)

Source: Research Data (2023)

The results in Table 1a shows that the adjusted coefficient of determination R square is 0.569, meaning the model explains 56.9% of the variations in performance of public universities. This meant that performance of public universities is improved through the adoption of intrapreneurial strategies. These results are in line with Chamba and Chazireni, (2023) who did a study that examined the influence of intrapreneurial capabilities on organisational performance of State-Owned Enterprises in Zimbabwe. The study concluded that intrapreneurship promotes greater agility and delivery of public value, thus improved service provision, customer satisfaction, social and financial impact.

In the 21st century, state-owned and public organisations should realise the role of intrapreneurship in steering performance and sustaining competitive advantage. Most public organisations are failing to provide the services to which they were established, thus the need to establish intrapreneurial tactics in these institutions to promote efficient and effective service delivery (Chamba & Chazireni, 2023). Mwongela and Wairimu, (2023) recognise intrapreneurship as a company’s sustainability approach that promotes creativity and improved performance. They recognise intrapreneurs as secret weapons in any business. Indeed, valuable human capital enhances performance in the midst of crises. They emphasise that intrapreneurship motivates firms to be innovative, pro-active, risk-taking and to renew themselves in a bid to improve performance.

Table 1b ANOVAa

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	85.402	4	21.351	96.445	.000 ^b
	Residual	63.092	285	.221		
	Total	148.494	289			

a. Dependent Variable: University Performance

b. Predictors: (Constant): Innovativeness, Risk-taking, Pro-activeness, Self-renewal

Source: Research Data (2023)

The ANOVA results in Table 1b are significant (F=96.445, sig <.05). Arguably, intrapreneurial strategies have a statistically noteworthy relationship with performance of Kenyan public universities.

The coefficient results for intrapreneurial strategies on performance of public universities are shown in Table 1c.

Table 1c Coefficients^a for intrapreneurial strategies on performance of public universities

Model		Unstandardized Coefficients			T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.741	.193		3.844	.000
	Innovativeness	.146	.059	.144	2.493	.013
	Risk-taking	.065	.067	.048	.971	.032
	Pro-activeness	.163	.071	.162	2.293	.023
	Self-renewal	.446	.066	.480	6.801	.000

a. Dependent Variable: University Performance

Source: Research Data (2023)

The study variables were predicted as show in equation 2

$$y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon. \dots\dots\dots \text{Equation 2}$$

Where;

Y = University Performance composite index

X1 = Innovativeness

X2 = Pro-activeness

X3 = Self-renewal

X4 = Risk-taking

B₀ = Constant or intercept

β_I = Beta Coefficient for relevant variables

E = Error Term (residual or disturbance factor or values not captured in within the regression model)

The prediction model for the study variables is as shown in equation 4.2

$$Y = 0.741 + 0.146 X1 + 0.065 X2 + 0.163 X3 + 0.446 X4 \dots\dots\dots \text{Equation 3}$$

The findings indicate a constant term of 0.741, implying that holding all other variables at a constant (0), improvement in public university performance would be at 0.741. The 0.259 deficit can be attributed to other factors not taken into account by this study.

The first objective of the study was to establish the influence of innovativeness on the performance of public universities in Kenya. The hypothesis was as follows:

H₀₁: Innovativeness has no significant effect on performance of public universities in Kenya.

The regression coefficient for innovativeness is ($\beta=0.146$, $p=0.013<.05$) indicating that holding all other independent variables constant, an increase in the innovativeness variable by one unit results to an increase in university performance by 0.146. The results on innovativeness variable are reinforced by theories utilized in this study. One of the theories is Schumpeter Innovation Theory, which postulates that the existence of opportunities in the business processes leads to adoption of intrapreneurship. The available opportunities are utilized efficiently through provision of adequate and timely information. The availability of information enables organisations to make decisions on choices that build better performance. The trial-and-error aspects advocated by risk-taking are highly acceptable and in turn, promote better performance (Gullmark, 2021; Schumpeter, 1934).

Kadarusman and Rosyafah, (2022) identify innovativeness as a culture that supports experimentation, new ideas, products, technologies and the tendency of a particular organisation to introduce new processes into their activities. When doing this, the aim of an organisation is in achieving a greater competitive advantage in the marketplace. This culture of innovativeness has considered customers as part of the reason for a firm's existence, therefore, better performance is achieved in the long run. These findings support a study by Parra-Requena, Ruiz-Ortega, Garcia-Villaverde and Ramirez, (2020) on 224 footwear companies in Spain. The study recognised a noteworthy association between innovativeness and firm performance. The study emphasises that the tendency of an organisation to support creativity, introduce new/ novel products, services and processes improves a firm's competitive advantage.

Ohia, Amah and Okocha, (2021) did a study titled Staff Innovativeness and Organizational Performance: A Review of Deposit Money Banks in Rivers State, Nigeria. They found a significant positive association amidst innovativeness and performance. They note that in the midst of competition, businesses should become innovative in order to survive. They further highlight that new product/service introductions stimulate economic development. Arguably, they note that innovation leads to opportunity identification and exploration where new goods, services and routines are introduced in organisations. This ultimately breeds better performance.

The subsequent objective of the study investigated the association between risk-taking and the performance of Kenyan public universities. The hypothesis was as follows:

H₀₂: Risk-taking has no significant effect on performance of public universities in Kenya.

The coefficient of regression for risk-taking is ($\beta=0.065$, $p 0.032<.05$), illustrates that holding all other independent variables constant, an increase in a single unit in risk-taking variable results to an increase in performance of public universities by 0.146. Therefore, risk-taking was statistically

acceptable in predicting the performance of public universities in Kenya. This is supported by Theresa and Hidayah, (2021) who studied owners of Micro, Small and Medium Enterprises (SMEs) in North Jakarta and found a positive and significant relationship between risk-taking and performance of SMEs.

Ajamobe, (2021) highlights that with the looming burden of unemployment of graduates in the world, there is a need to adopt risk-taking in universities so as to expose students to more real-life issues. He further notes that the establishment of new ventures call for a great amount of risk-taking. Most organisations around the world have collapsed due to their managements being risk averse. Organisations should take risks in a bid to improve their performance (Wimmer & Keestra, 2020).

Risk-taking has been considered by Ajamobe, (2021) as a driver to improved public sector performance. He, however, notes that risk-taking is not solely grounded on appropriate identification, assessment and management of risks, but also incorporates the level to which risk is bearable in a public entity, and how much of that risk is considered bearable. Some risks, in any organisation, are necessary to take in order for organisational objectives to be met; however, public entities need to make strategic decisions on the choice of risk they are willing to take.

The third objective of the study was to assess the relationship between pro-activeness and performance of public universities in Kenya. The hypothesis of the objective was as follows:

H₀₃: Pro-activeness has no significant effect on performance of public universities in Kenya.

The regression coefficient for pro-activeness is ($\beta=0.163$, $p=0.023<.05$) indicating a positive relationship between pro-activeness and performance of public universities in Kenya. For a unit change in pro-activeness, while holding all other independent variables at zero, public university performance increases by 0.163. Therefore, pro-activeness was statistically acceptable in predicting the performance of Kenyan public universities. This is in the same school of thought as Huang, Huang and Soetanto (2023), who did a configurationally study on 110 UK SMEs and established a positive significant association amidst pro-activeness and performance of SMEs.

Being a first-mover in the marketplace is more grounded on the pro-activeness tendency of an organisation. The posture adopted by organisations that anticipate changes, acts on future needs and wants in a marketplace gives the firm a competitive edge and promotes superior performance (Galbreath et al., 2019). This is supported by Adomako, Ning and Adu-Ameyaw, (2020) who did a study in Ghana to examine the conditions under which pro-active environmental strategy drives firm performance, and found out that the performance of the organisation is dependent on pro-activeness tendency.

Baah, Opoku-Agyeman and Abdoulaye (2020), found out that pro-activeness positively and significantly influences performance of organisations. This improvement is in the aspects of environmental and productivity metrics. Pro-activeness has been advocated in business crises as it stimulates growth and performance. Additionally, Yang, Chen, Zhao and Hua, (2019) found out that pro-active individuals have a creative and transformative personality that helps build knowledge and skills in the organisation, which ultimately improves performance. They argue that pro-activeness is embedded on responsibility and constructive organisational change which is attributed to the desire to change the status quo.

The fourth objective of the study was to establish the relationship between self-renewal and performance of public universities in Kenya. The study hypothesis was as follows:

H₀₄: Self-renewal has no significant effect on performance of public universities in Kenya

The coefficient for self-renewal is (0.446, p 0.000<.05), indicating that holding all other independent variables constant, a unit change in self-renewal results to a change in public university performance by 0.446. Therefore, self-renewal was statistically acceptable in predicting the performance of public universities in Kenya. This is supported by a study by Aina and Solikin, (2020), who recognise self-renewal as business and corporate revitalisation, aimed at improving firm performance. They further recognise self-renewal as a transformational behaviour that creates flexibility and high adaptability for changes in the organisation. Organisational renewal is a critical concept that enhances the performance of the organisation.

Shin and Pérez-Nordtvedt (2020), express that self-renewal incorporates the desire and will of an organisation to acclimatise to environmental changes. It does not necessarily incorporate the major changes in organisational strategy but is much grounded on minor adjustments in the activities of an organisation that ultimately breeds superior performance. They emphasise that this process is incubated in an environment where learning is acceptable, new knowledge is developed and repetitive patterns are avoided.

Overall, intrapreneurial strategies had a prediction model as shown in equation 4:

$Y = 0.741 + 0.146 X_1 + 0.065 X_2 + 0.163 X_3 + 0.446 X_4$ Equation 4

The findings indicate a constant term of 0.741, implying that holding all other variables at a constant (0), improvement in public university performance would be at 0.741. The 0.259 deficit can be attributed to other factors not taken into account by this study.

5.0 Conclusion

The first objective of the study found out that innovativeness is statistically significant and therefore, there exist a relationship between innovativeness and performance of public universities in Kenya. On a similar perspective, based on the second objective, risk-taking is statistically significant, and thus there exist a relationship between risk-taking and performance of public universities in Kenya. Risk-taking is considered the back-bone of intra/entrepreneurship. The more the risk, the higher the gains. Based on the third objective of the study, pro-activeness is statistically significant. This is an indicator of a relationship between pro-activeness and performance of public universities in Kenya. On the fourth objective, self-renewal is statistically significant, therefore, there exists a relationship between self-renewal and performance of public universities in Kenya. The study concludes that there is a need for public universities to adopt intrapreneurial strategies in the form of innovativeness, risk-taking, pro-activeness and self-renewal as they positively influence performance.

6.0 Policy Implications

Innovativeness was found to significantly influence performance of public universities in Kenya. The Vice-Chancellors, in consultation with the Heads of Finance and Procurement should consider working a tight rope and be prudent in spending, in order to achieve more with less. Vice-Chancellors in collaboration with the office of Human Resources in public universities should incentivise innovative behaviour amongst the employees, as this has been found to lead to better

performance. The Vice-Chancellors should drive collaborations and linkages with external partners. This ensures sharing of resources, spreading gains and risks, collaborative decision-making, strategic planning and building synergy.

For risk-taking, the study established that the availability of funds promotes adoption of intrapreneurship, which ultimately promotes superior performance. The Government of Kenya, through the Ministry of Finance and the National Treasury should avail adequate funds in a timely manner as this makes it possible to engage in risky projects with uncertain outcomes.

Regarding pro-activeness, other similar institutions such as private universities can use the findings of this study to plan and budget for future job market demands of their clients/customers, predict anticipated changes in the industry and take necessary action to provide for future requirements for their various stakeholders. To achieve this, there needs to be constant communication with stakeholders on anticipated changes in the environment that affect service delivery requirements. The top management of such institutions should encourage consultations with stakeholders to promote collaborative decision-making and long-range planning.

In regard to self-renewal, the government through the Ministry of Education can utilise the study findings. Constant training and retooling is essential to promote performance. The Ministry could organise frequent trainings and benchmarks to promote information availability on industry changes for self-renewal of public universities. Additionally, laws and regulations that promote establishment and de-establishment of campuses should be enacted and implemented and or revised as found appropriate.

REFERENCES

- Abebaw Abibo, Mammo Muchie, Zerayehu Sime & Wondemhunegn Ezezew (2022) Factors affecting the innovation ecosystem in public universities in Ethiopia, *African Journal of Science, Technology, Innovation and Development*, DOI: [10.1080/20421338.2022.2043809](https://doi.org/10.1080/20421338.2022.2043809)
- Adomako, S., Ning, E., & Adu-Ameyaw, E. (2021). Proactive environmental strategy and firm performance at the bottom of the pyramid. *Business Strategy and the Environment*, 30(1), 422-431.
- Ahuja, G., & Novelli, E. (2016). Incumbent responses to an entrant with a new business model: resource co-deployment and resource re-deployment strategies. In *Resource redeployment and corporate strategy* (Vol. 35, pp. 125-153). Emerald Group Publishing Limited.
- Aina, Q., & Solikin, I. (2020). Entrepreneurship and intrapreneurship: How supporting corporate performance. *Review of Integrative Business and Economics Research*, 9, 288-297.
- Ajamobe, J. O. (2021). Risk taking capacity and entrepreneurship inclination of graduates among postgraduate students in public universities in Lagos State, Nigeria. *Journal Pendidikan Nonformal*, 16(2), 94-103.
- ALmasri, O., & Ahmad, A. (2020). Intrapreneurial behaviors and innovative performance: The moderating role of employees' characteristics in commercial banks. *Accounting*, 6(6), 1007-1020.

- Anlesinya, A., Eshun, P., & Bonuedi, A. A. (2015). Entrepreneurial orientation dimensions and profitability nexus: Evidence from micro enterprises in the retail sector in a developing country. *International Journal of Small Business and Entrepreneurship Research*, 3(7), 79-87.
- Arabeche, Z., Soudani, A., Brahmi, M., Aldieri, L., Vinci, C. P., & Abdelli, M. E. A. (2022). Entrepreneurial orientation, organizational culture and business performance in SMEs: Evidence from emerging economy. *Sustainability*, 14(9), 5160.
- Audretsch, D. B., Belitski, M., & Guerrero, M. (2022). The dynamic contribution of innovation ecosystems to schumpeterian firms: A multi-level analysis. *Journal of Business Research*, 144, 975-986.
- Awais, S., & Fantazy, K. (2018). Exploring the relationships of strategic entrepreneurship and social capital to sustainable supply chain management and organizational performance. <https://doi.org/10.1108/IJPPM-04-2017-0084>
- Awino, P. O., Kilika, J. M., & Muathe, S. M. (2022). Strategic Implications of Carrying out Public Sector Reforms in a National Police Service Organization: An Empirical Investigation of National Police Service in Kenya. *Journal of Business*, 10(2), 57-69.
- Baah, C., Opoku-Agyeman, D., Acquah, I. S. K., Issau, K., & Abdoulaye, F. A. M. (2020). Understanding the influence of environmental production practices on firm performance: a proactive versus reactive approach. *Journal of Manufacturing Technology Management*, 32(2), 266-289.
- Ben Hador, B., & Klein, G. (2020). Act your age? Age, intrapreneurial behaviour, social capital and performance. *Employee Relations: The International Journal*, 42(2), 349-365.
- Bezanilla, M. J., García-Olalla, A., Panes-Castro, J., & Argute, A. (2020). Developing the entrepreneurial university: Factors of influence. *Sustainability*, 12(3), 842.
- Brettel, M., Chomik, C., & Flatten, T. C. (2015). How organizational culture influences innovativeness, proactiveness, and risk-taking: Fostering entrepreneurial orientation in SMEs. *Journal of small business management*, 53(4), 868-885.
- Bustinza, O. F., Gomes, E., Vendrell-Herrero, F., & Baines, T. (2019). Product-service innovation and performance. *R&D Management*, 49(1), 33-45.
- Chamba, L. T., & Chazireni, B. (2023). Investing in intrapreneurial capabilities for improved performance in state-owned enterprises. *Africa's Public Service Delivery & Performance Review*, 11(1), 9.
- Chauvet, G. (2015). Coupling methods for multistage sampling.
- Dauids, F. (2017). *The theory of planned behaviour and the entrepreneurial event model as predictive models of entrepreneurial intention* (Master's thesis, University of Cape Town).
- Davis, G. F., & Cobb, J. A. (2010). Resource dependence theory: Past and future. *Stanford's organization theory renaissance, 1970–2000*, 28, 21-42.
- Diandra, D., & Azmy, A. (2020). Understanding definition of entrepreneurship. *International Journal of Management, Accounting and Economics*, 7(5), 235-241.

- Eckhardt, J. T., & Shane, S. A. (2003). Opportunities and entrepreneurship. *Journal of management*, 29(3), 333-349.
- Fadda, N. (2018). The effects of entrepreneurial orientation dimensions on performance in the tourism sector, 21(1), 22–44. <https://doi.org/10.1108/NEJE-03-2018-0004>
- Gauthier, J., Cohen, D., & Meyer, C. R. (2021). Entrepreneurial orientation, externalities and social entrepreneurship. *Society and Business Review*, 16(3), 476-489.
- Gibb, J., & Hear, J. M. (2010). Risk taking, innovativeness and competitive rivalry: A three-way interaction towards firm performance. *International Journal of Innovation Management*, 14(05), 871-891.
- Gullmark, P. (2021). Do all roads lead to innovativeness? A study of public sector organizations' innovation capabilities. *The American Review of Public Administration*, 51(7), 509-525
- Gupta, M., & Acharya, A. (2017). Mediating role of innovativeness between risk taking and performance in Indian Universities Impact of this nexus on brand image <https://doi.org/10.1108/SAJBS-09-2016-0080>
- Hamdan, Y., & Alheet, A. F. (2020). Influence of organisational culture on pro-activeness, innovativeness and risk taking behaviour of SMEs. *Entrepreneurship and Sustainability Issues*, 8(1), 203.
- Hanaysha, J. R., & Al-Shaikh, M. E. (2022). An examination of customer relationship management dimensions and employee-based brand equity: A study on ride-hailing industry in Saudi Arabia. *Research in Transportation Business & Management*, 43, 100719.
- Handoko, F., Smith, A., & Burvill, C. (2014). The role of government, universities, and businesses in advancing technology for SMEs' innovativeness. *Journal of Chinese Economic and Business Studies*, 12(2), 171-180.
- Hanush, H. and Pyka, A. (2007). *Introduction in Elgar Companion to Neo-Schumpeterian Economics*, Edward Elgar, Cheltenham,
- Herhausen, D. (2017). This manuscript version is made available under the Elsevier user license <http://www.elsevier.com/open-access/userlicense/1.0/>.
- Herlinawati, E., & Machmud, A. (2020). The effect of innovation on increasing business performance of SMEs in Indonesia. *WSEAS Transactions on Business and Economics*, 17(7), 51-57.
- Hoang, C. C., & NGOC, B. H. (2019). The relationship between innovation capability and firm's performance in electronic companies, Vietnam. *The Journal of Asian Finance, Economics and Business*, 6(3), 295-304.
- Huang, S., Huang, Q., & Soetanto, D. (2023). Entrepreneurial orientation dimensions and the performance of high-tech and low-tech firms: A configurational approach. *European Management Journal*, 41(3), 375-384.
- Jiménez-Barrionuevo, M. ^a. M., Molina, L. M., & García-Morales, V. J. (2019). Combined influence of absorptive capacity and corporate entrepreneurship on performance. *Sustainability*, 11(11), 3034.

- Kadarusman, K., & Rosyafah, S. (2022). Innovativeness, risk-taking, proactiveness, and firm performance with learning organizations as mediating ariables. *Matrik: Jurnal Manajemen, Strategi Bisnis dan Kewirausahaan*, 16(1), 47-62.
- Kelechi-Kanu, E. A., & James, V. (2020). Faculty Intrapreneurial Competence and Quality of Entrepreneurship Education Delivery in Nigerian universities. *Multidisciplinary Research*, 10.
- Kennedy, H. P., Farrell, T., Paden, R., Hill, S., Jolivet, R. R., Cooper, B. A., & Schindler Rising, S. (2011). A randomized clinical trial of group prenatal care in two military settings. *Military medicine*, 176(10), 1169-1177.
- Kiiru, D. K., Mukulu, E., & Ngatia, P. (2023). Innovativeness and Performance: Evidence from Kenyan SMEs. *European Journal of Business and Management Research*, 8(2), 113-119.
- Kimwaki, B. M. (2023). Supply Chain Alignment and Performance of Large Manufacturing Firms in Kenya (Doctoral dissertation, JKUATCOHRED).
- Kiriri, P. N. (2022). Management of Performance in Higher Education Institutions: The Application of the Balanced Scorecard (BSC). *European Journal of Education (EJE)*, 5(1), 144-158.
- Klofsten, M., Urbano, D., & Heaton, S. (2021). Managing intrapreneurial capabilities: An overview. *Technovation*, 99, 102177
- Klofsten, M., Fayolle, A., Guerrero, M., Mian, S., Urbano, D., & Wright, M. (2019). The entrepreneurial university as driver for economic growth and social Change-Key strategic challenges. *Technological Forecasting and Mbooni Change*, 141, 149-158
- Kumar, S., & Parveen, R. (2020). Assessing the factors of employees' intrapreneurial behaviour An Indian context. <https://doi.org/10.1108/WJEMSD-122020-0160>
- Le Roux, I., & Bengesi, K. M. (2014). Dimensions of entrepreneurial orientation and small and medium enterprise performance in emerging economies. *Development Southern Africa*, 31(4), 606-624.
- Linyiru & Ketyenya. (2017). Influence of Innovativeness on Performance of State, 2(3), 40–54.
- Lisboa, T., Silva, D., Duarte, S., Ferreira, R., Andrade, C., Lopes, A. L., .. & Sobral, M. (2019). Toxicity and antitumor activity of a thiophene–acridine hybrid. *Molecules*, 25(1), 64.
- Lizote, S. A., Lana, J., & Verdinelli, M. A. (2014). Intrapreneurial behaviour: A study of higher education institutions. *Revista Alcance*, 21(3), 518-537.
- Lüdeke-Freund, F. (2020). Sustainable entrepreneurship, innovation, and business models: Integrative framework and propositions for future research. *Business Strategy and the Environment*, 29(2), 665-681.
- Mamun, A. Al, & Fazal, S. A. (2018). Effect of entrepreneurial orientation on competency and micro-enterprise performance, 12(3), 379–398. <https://doi.org/10.1108/APJIE-05-2018-0033>
- Mehmood, T., Alzoubi, H. M., Alshurideh, M., Al-Gasaymeh, A., & Ahmed, G. (2019). Schumpeterian entrepreneurship theory: Evolution and relevance. *Academy of Entrepreneurship Journal*, 25(4), 1-10.

- Meissner, D., & Shmatko, N. (2016). Technological Forecasting & Social Change “Keep open”: the potential of gatekeepers for the aligning universities to the new Knowledge Triangle. *Technological Forecasting & Social Change*.
<https://doi.org/10.1016/j.techfore.2016.03.012>
- Moghaddas, S. Z. (2019). Organizational empowerment: A vital step toward intrapreneurship.
<https://doi.org/10.1177/0961000619841658>
- Muathe, S. M., & Muraguri-Makau, C. W. (2020). Entrepreneurial Spirit: Acceptance and Adoption of E-Commerce in the Health Sector in Kenya. *International Journal of Business, Economics and Management Works*, 7(8), 08-14.
- Mukhwana, E. J., Too, J., Kande, A., & Nandokha, H. (2020). Financing higher education in Africa: The case of Kenya. *African Journal of Rural Development*, 5(3), 53-64.
- Muraguri. (2016). Dimensions of Strategic intent execution and performance of Universities in Kenya, (November).
- Musau, S., Muathe, S., & Mwangi, L. (2018). Financial inclusion, bank competitiveness and credit risk of commercial banks in Kenya. *International Journal of Financial Research*, 9(1), 203-218.
- Mwongela, E. W., & Wairimu, A. (2023). Intrapreneurship Factors and The Growth of Insurance Companies in Kenya. *International Journal of Management and Business Research*, 5(1), 358-370.
- Nagappan, K. T., Balakrishnan, T., & Saini, J. K. (2019). Prerequisites of intrapreneurial activities: a conceptual model.
- Ndung'u, H. N., Mwirigi, P. M., & Gatimbu, K. K. (2023). Strategic sourcing and performance of milk processors in Kenya. *International Journal of Procurement Management*, 16(3), 396-421.
- Neessen, P. C., Caniëls, M. C., Vos, B., & De Jong, J. P. (2019). The intrapreneurial- employee: toward an integrated model of intrapreneurship and research agenda. *International Entrepreneurship and Management Journal*, 15, 545-571.
- Nguyen-Van, D., & Chang, C. H. (2020). Organizational Innovation, R&D and Product Innovation: Firm-Level Evidence from ASEAN Countries. *Journal of Entrepreneurship, Business and Economics*, 8(1), 54-76.
- Odhiambo, G. (2018). The role of Kenyan universities in national development. In *FIRE: Forum for International Research in Education* (Vol. 4, No. 3).
- Ohia, M., Amah, E. P., & Okocha, B. F. P. (2021). Staff Innovativeness and Organizational Performance: A Review of Deposit Money Banks in Rivers State, Nigeria.
- Okangi, F. P. (2019). The impacts of entrepreneurial orientation on the profitability growth of construction firms in Tanzania, 1, 1–23.
- Oladimeji, M. S., Abosede, A. J., & Eze, B. U. (2019). Corporate entrepreneurship and service firms' performance in Nigeria. *Economic Review: Journal of Economics and Business*, 17(1), 3-15.

- Parra-Requena, G., Ruiz-Ortega, M. J., Garcia-Villaverde, P. M., & Ramírez, F. J. (2022). Innovativeness and performance: the joint effect of relational trust and combinative capability. *European Journal of Innovation Management*, 25(1), 191-213.
- Pfeffer, J., & Salancik, G. (2015). External control of organizations—Resource dependence perspective. In *Organizational behavior 2* (pp. 373-388). Routledge.
- Rahman, M. M., & Howlader, M. S. (2022). The impact of research and development expenditure on firm performance and firm value: Evidence from a South Asian emerging economy. *Journal of Applied Accounting Research*, 23(4), 825-845.
- Ramadani, V., Hisrich, R. D., & Gërguri-Rashiti, S. (2015). Female entrepreneurs in transition economies: insights from Albania, Macedonia and Kosovo. *World Review of Entrepreneurship, Management and Sustainable Development*, 11(4), 391-413.
- Ramayah, T., Rahman, S. A., & Taghizadeh, S. K. (2019). Modelling green entrepreneurial intention among university students using the entrepreneurial event and cultural values theory. *International Journal of Entrepreneurial Venturing*, 11(4), 394-412.
- Salamzadeh, A., Tajpour, M., & Hosseini, E. (2019). Corporate entrepreneurship in University of Tehran: does human resources management matter? *International journal of knowledge-based development*, 10(3), 276-292.
- Schumpeter, J.A. (1934). *The theory of economic development: an inquiry into profits, capital, credit, interest and the business cycle*, Harvard Economic Studies, Vol. 46, Harvard College, Cambridge, MA.
- Shakina, E., & Barajas, A. (2020). 'Innovate or Perish?': Companies under crisis. *European Research on Management and Business Economics*, 26(3), 145-154.
- Shapiro, A., & Sokol, L. (1982). The social dimensions of entrepreneurship. *University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship*.
- Shin, K., & Pérez-Nordtvedt, L. (2020). Knowledge acquisition efficiency, strategic renewal frequency and firm performance in high velocity environments. *Journal of Knowledge Management*, 24(9), 2035-2055.
- Shisia, A., Sang, W., Matoke, J., & Omwario, B. N. (2014). Strategic Innovation and Performance of public universities in Kenya.
- Skarmeas, D., Lisboa, A., & Saridakis, C. (2016). Export performance as a function of market learning capabilities and intrapreneurship: SEM and FsQCA findings. *Journal of Business Research*. <https://doi.org/10.1016/j.jbusres.2016.04.135>
- Soomro, B. A., & Shah, N. (2020). Entrepreneurial orientation and performance in a developing country: Strategic entrepreneurship as a mediator. *Business Strategy & Development*, 3(4), 567-577.
- Subiyakto, B., Widyanti, R., Basuki, , & Syaharuddin, . (2020). Revitalizing public university innovativeness through learning organization. *Polish Journal of Management Studies*, 21(1), 369-381.

- Sulaiman, S., Razak, M. R. A., Kamaruzaman, I. F., & Yusof, A. (2022, December). Determinants of Employee Intrapreneurial Behaviour: The Case of Malaysian Manufacturing Firms. In *International Conference on Communication, Language, Education and Social Sciences (CLESS 2022)* (pp. 159-169). Atlantis Press.
- Tang, J., & Murphy, P. J. (2012). Prior knowledge and new product and service introductions by entrepreneurial firms: The mediating role of technological innovation. *Journal of Small Business Management*, 50(1), 41-62.
- Theresa, I., & Hidayah, N. (2022). The effect of innovation, risk-taking, and proactiveness on business performance among MSMEs in Jakarta. In Tenth International Conference on Entrepreneurship and Business Management 2021 (ICEBM 2021) (pp. 42-48). Atlantis Press.
- Toftoy, C., Chatterjee, J., & Toftoy, C. (2004). The intrapreneurial revolution: now is the time for action. Retrieved from <http://www.sbaer.uca.edu/research/icsb/2005/192.pdf>.
- Valka, K., Roseira, C., & Campos, P. (2020). Determinants of university employee intrapreneurial behavior: The case of Latvian universities. *Industry and Higher Education*, 34(3), 190-202.
- Vivona, R., Demircioglu, M. A., & Raghavan, A. (2020). Innovation and innovativeness for the public servant of the future: what, why, how, where, and when. *The Palgrave handbook of the public servant*, 1-22.
- Wainaina, R. W., Bula, H., & Wambua, P. P. (2022). Antecedents of talent retention and organization performance of Nairobi City County Government, Kenya. *The Strategic Journal of Business & Change Management*, 9(4), 19-29.
- Yang, C., Chen, Y., Zhao, X., & Hua, N. (2020). Transformational leadership, proactive personality and service performance: The mediating role of organizational embeddedness. *International Journal of Contemporary Hospitality Management*, 32(1), 267-287.
- Yli-Renko, H., Denoo, L., & Janakiraman, R. (2020). A knowledge-based view of managing dependence on a key customer: Survival and growth outcomes for young firms. *Journal of Business Venturing*, 35(6), 106045.