African Journal of Emerging Issues
Peer reviewed | Double blind | Interdisciplinary

African Journal of Emerging Issues
(AJOEI)
Online ISSN: 2663 - 9335
Available at: https://ajoeijournals.org

EDUCATION

ENTREPRENEURIAL LEADERSHIP AS A CATALYTIC FACTOR FOR RESEARCH COMMERCIALIZATION IN SELECT KENYAN UNIVERSITIES

[1*]Kevin Wachira, [2]Onesmus Mbaabu, [3]Peter Kamoni, [4]Robert Ombati, [5]Daniel Mutua

[1]School of Business and Economics, Open University of Kenya, Konza Technopolis, Kenya.
[2&5]School of Business and Economics, South Eastern Kenya University.

[3]School of Business and Economics, Murang'a University

[4]School of Business and Economics, Mama Ngina University College.

Email of the Corresponding Author; *kkangethe@ouk.ac.ke

Publication Date: May, 2025

ABSTRACT

Purpose of the study: This paper examined how entrepreneurial leadership within select Kenyan universities influences the commercialization of research outputs.
Problem Statement: Under the pressure of reduced government funding and major changes in the higher education funding model, universities in Kenya are finding themselves in a position where they must innovate and commercialize their research output to earn much-needed revenue.

Method: Fourteen universities supported by the Kenya National Innovation Agency in 2023/2024 to strengthen their institutional capacity for research commercialization under the Institutional Support Program were selected for this study. Through a qualitative research approach, the study gathered the stories of individual institution leaders and Institutional Working Group (IWG) members and looked for patterns within those. Data was analyzed through descriptive content analysis to determine the direction of the relationship between entrepreneurial leadership and research commercialization success.

Findings: The main finding was that the institutional leadership supported research commercialization activities with deliberate decisions and progressive actions, as evidenced herein. However, there were still bottlenecks to the process including human resource motivation issues, inadequate/and or conflicting institutional policy framework for research commercialization, and resource deficiencies.

Conclusion: Entrepreneurial leadership plays a catalytic role in driving research commercialization in Kenyan universities, but persistent structural and policy-related barriers must be addressed for sustainable impact.

Recommendation: Universities should institutionalize entrepreneurial leadership practices by streamlining decision-making structures, incentivizing innovation, and enhancing commercialization-supportive policies.

Keywords: *Entrepreneurial leadership, innovation, research commercialization, Kenya, universities*

INTRODUCTION

Entrepreneurial leadership is a blend of the fields of entrepreneurship and leadership. It has particularly come to the fore because of the quickly changing organizational operating environments that call for agility and flexibility of operations. Entrepreneurial leaders are not only expected to play the traditional leadership roles of setting direction, motivating, and influencing but also do so in ways that depict the traits associated with entrepreneurship. Such characteristics include pro-activeness, creativity, innovativeness, risk-taking, self-efficacy, and resilience (Pane & Kumar, 2015). More precisely, entrepreneurial leaders exhibit certain traits namely: optimism, need to achieve, self-esteem, locus of control, goal orientation, courage, screening for opportunity, tolerance for ambiguity, and strong internal control (Pane & Kumar, 2015)

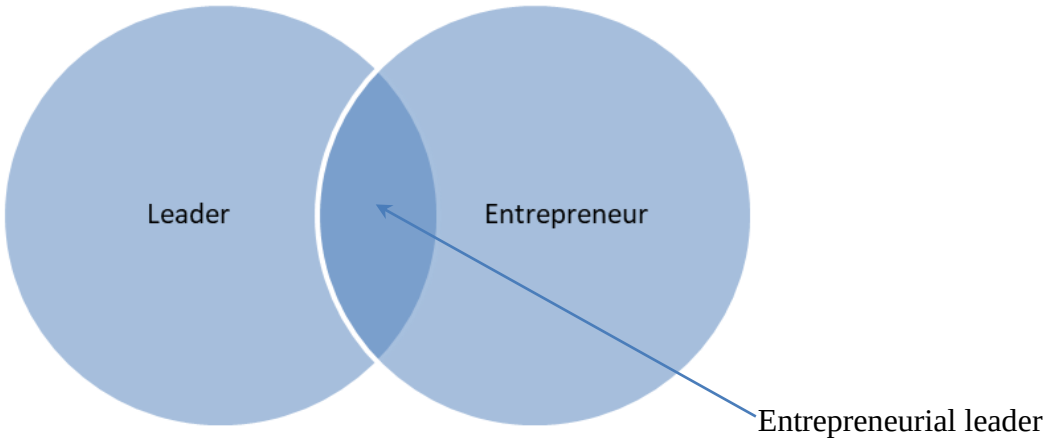

Figure 1: Entrepreneurial Leadership (Adopted from Pane & Kumar, 2015)

Traditionally, universities have not been perceived with a commercial lens. They were viewed as the epitome of research and teaching and were not expected to engage in market activities for revenue generation (Chan, Moon-ho, Oleksandr, Chernyshenko, Marilyn, Sam, and Wei, 2012). Furthermore, governments used public funds to protect universities from market dynamics (Buenstorf & Geissler, 2012). Over time, many unfriendly conditions have come along making the traditional status quo untenable. Top among these conditions are reducing government funding and entry of private players with a more efficient corporate mindset in the higher education sector (Ejermo, Kander, & Svensson, 2011).

Pressed by a need to survive, universities globally are starting to focus more on the commercialization of their research outputs and the notion of commercializing research outputs

is quickly gaining traction and popularity (Tweheyo, Abaho, Verma & Musenze, 2023). However, a majority (if not all) of universities in Kenya are stuck with the traditional approach to higher education where the focus is on research and teaching. Meanwhile, society now has a higher expectation for universities to be able to produce practical knowledge that could be used to solve day-to-day challenges. The society is demanding a higher return on investment from universities (KeNIA, 2022). The university of today needs to have direct and deep links with the industry to play a significant role in economic development (Minh & Van, 2022). As reported by KeNIA (2022), "research outputs not taken further down the pipeline to production happen too frequently in Kenya. Therefore, Kenyan universities, research institutes, and businesses are missing out on opportunities to commercialize Kenyan research in ways that benefit the economy and address societal challenges".

Statement of The Problem

There exists a fair body of research explaining the possible reasons for the current state of affairs. These range from lack of policy frameworks, finances, creativity, stakeholder collaborations, trust, and supportive leadership among others. The myriad of challenges to the successful commercialization of research outputs by Kenyan universities can be classified into three: national, institutional, and individual (OACPS, 2023). At the national level, the challenges facing commercialization include the lack of the following: national innovation and commercialization policy, national innovation fund, national commercialization strategy, national IP management policy, and a framework for academia-industry collaboration. At the institutional level, the challenges include ineffective and inadequately resourced Technology Transfer Offices (TTOs), lack of institutional commercialization strategies, ineffective implementation of Intellectual Property (IP) policies, inadequate focus by senior management on commercialization, low level of IP applications and grants, low funding of commercialization, and lack of clarity on how universities can establish and manage spinoffs. At the researcher (individual) level, the key challenges include low IP awareness and skills, low level of IP training and education, limited support for IP protection and commercialization, and a lack of adequate incentives for IP protection and commercialization (OACPS, 2023).

What is not clear is the magnitude of how 'inadequate focus by senior management on commercialization' affects efforts to commercialize research outputs by Kenyan universities. There is a shortage of empirical data on these variables specifically on Kenyan universities and that was the focus of this study. This study sought to give an early review of the effectiveness

of universities and university leaders' capacity-building initiatives being undertaken by Kenya National Innovation Agency (KeNIA) to drive entrepreneurship, innovation, and research commercialization through its Institutional Support Program 2023 - 2024.

Research Objectives

This study focused on one of the institutional challenges identified by OACPS (2023), inadequate focus by senior management on commercialization. The leadership approach of a university is crucial in promoting innovation and entrepreneurship (Sart, 2014). The study critically analyzed the leadership context through an innovation and entrepreneurship lens in select universities in Kenya and how the leadership was promoting (or suppressing) the commercialization of research outputs in the respective institutions.

Research Question

What is the role of institutional leadership approach in a promoting (or suppressing) commercialization of research outputs in the respective institution?

EMPIRICAL REVIEW

Characteristics of Entrepreneurial Leadership

For decades, researchers have explored leadership by examining whether successful leaders are born or made, focusing on personality traits linked to leadership excellence. The debate remains unresolved, with questions still surrounding the direct relationship between personality and leadership (Colbert, Judge, Choi & Wang, 2012). On the other hand, entrepreneurship scholars have similarly debated whether entrepreneurs are born or developed. Like the leadership trait theory, the entrepreneurship traits theory has drawn both support and critique (Núñez, Rubio-Valdehita, Aparicio-García & Díaz-Ramiro, 2020).

Amid these ongoing debates, the concept of entrepreneurial leadership has emerged, integrating insights from both leadership and entrepreneurship. Entrepreneurial leaders are described as individuals who identify opportunities, embrace risk, drive innovation, and inspire participation to create meaningful change (Drucker, 2006). Bass and Bass (2008) outlined key traits such as optimism, need for achievement, locus of control, and goal orientation, further supported by Rashid and Ismail (2014), who emphasized internal motivation and tolerance for ambiguity as defining features of entrepreneurial leaders.

Research Commercialization

Research commercialization is the process of availing viable and needed research outputs in the form of products to the market hence capturing value. There are many cases of successful research commercialization the world over. Some of the most valuable companies in the world such as Google, Meta, and Mobileye are direct results of commercialized research outputs (Marx & Hsu, 2021). The mechanisms available for commercialization include outright sale of intellectual property, licensing of intellectual property to third parties, joint ventures, strategic alliances, and internal development (GoK, 2021). However, as noted by Johnson, Gianiodis, Harrison & Bock (2022), the commercialization of scientific discoveries within the university-industry nexus is multi-faceted and complex, characterized by dynamic interactions between multiple agents, organizations, and institutions. Such players include government, industries, businesses, investors, financial institutions, and universities/research institutes themselves. This process is characterized by many challenges including poor quality research from the universities, weak or non-existent links between universities and enterprises, and limited funding to support meaningful research outputs (Xuyen, Hương & Huong, 2020). Because of the complex nature of research commercialization, it is not always a guarantee that having quality research outputs will lead to success in the market but having poor research outputs not informed by market needs is a sure path to failure. For success, a university needs to have the right framework and infrastructure, including a Technology Transfer Office (TTO) or equivalent to spearhead commercialization activities (KeNIA, 2022).

RESEARCH METHODOLOGY

Data was collected using a combination of high-level interviews and focus group discussions that took place over nine months starting December 2023 through to August 2024. This was qualitative research: rather than gathering large masses of data (from survey results) and then looking for patterns within that data, the study gathered the stories of individual institution leaders and IWG members and looked for patterns within those. Data was analyzed through descriptive content analysis to determine the direction of the relationship between entrepreneurial leadership and research commercialization success.

Table 1: Sample Size

Sno.	University	Vice Chancellor	Director responsible for research, innovation, and commercialization matters	IWGs (Commercialization Champions)	Total
1	Daystar University	1	1	3	5
2	Dedan Kimathi University of Technology	1	1	3	5
3	Egerton University	1	1	3	5
4	Jaramogi Oginga Odinga University of Science and Technology	1	1	3	5
5	KCA University	1	1	3	5
6	Maasai Mara University	1	1	3	5
7	Meru University of Science and Technology	1	1	3	5
8	Moi University	1	1	3	5
9	Riara University	1	1	3	5
10	Rongo University	1	1	3	5
11	South Eastern Kenya University	1	1	2*	4
12	University of Embu	1	1	3	5
13	University of Kabianga	1	1	3	5
14	University of Nairobi	1	1	3	5
	Total	**14**	**14**	**42**	**69**

*Corresponding author was a SEKU IWG member

RESULTS AND DISCUSSIONS

This study revealed that the mindset of university leadership in Kenya is warming up to research commercialization and entrepreneurship. The Kenya National Innovation Agency and its partners through the Institutional Support Program have been able to push the needle deeper. There is evidence of intentionally directed efforts shifting the select universities' leadership towards higher levels of research commercialization.

The main evidence of this shift is that all the select fourteen universities in the study were able to successfully develop entrepreneurial commercialization master plans to drive their research commercialization agenda over 4 years beginning 2024 – 2028. Notably in these master plans, the universities set out specific measurable strategies to boost research commercialization. These plans were of course supported by the top leadership of the universities (including the University Council, University Management Board, and Senate of the respective universities) demonstrating leadership commitment to research commercialization. The master plans were aligned with the institutions' strategic plans 2023-2027. With research commercialization,

innovation, and entrepreneurship firmly set out in the highest strategy document, the leadership of these institutions demonstrated their catalytic role in driving the commercialization agenda.

Institutional leadership has also played a catalytic role by revising organizational structures to reflect the increased focus on research commercialization, innovation, and entrepreneurship. Notably, the institutions established and strengthened technology transfer offices (named differently depending on the preference of the university). Personnel with prerequisite knowledge and experience in handling intellectual property and innovation were engaged to run the offices. The Universities had also allocated budgetary resources to these offices albeit reported as not adequate. Already some of the universities (and individual researchers) had started reaping the fruits of these efforts having filled for IP protection for some of their research outputs with the Kenya Industrial Property Institute. Further, some put in place commercialization champions at the school/faculty level to help capture innovations from the lower levels of the University structure.

A section of the universities had reviewed the pedagogy for delivering entrepreneurship training. While some maintained a university common course in entrepreneurship for all undergraduate students, others had gone further to customize their entrepreneurship unit to the requirements of various schools. Hence deriving variations of entrepreneurship course such as Entrepreneurship for Engineers (for engineering students) and Entrepreneurship for non-business majors (for students in STEM oriented programs). Moreover, some of the universities revised the teaching style of the common course to include more practical experiential learning sessions such as design thinking and real-world entrepreneurship projects. A series of non-academic entrepreneurship and innovation trainings were also offered in the institutions targeting students and staff. These were in the form of workshops, seminars, public lectures, and short courses.

The universities' leadership and their institutions were, to some extent, actively engaging in the research commercialization ecosystem as evidenced by their participation in innovation activities. The universities for instance had internally organized innovation weeks and conferences which often onboarded other ecosystem players. Externally, they participated in national innovation forums including the Commercialization and Entrepreneurial Institutions Leaders (CEIL) Summit and Kenya Innovation Week (KIW) organized by the KeNIA. The vice-chancellors of a select set of nine of the fourteen universities were also part of the Kenya Network of Entrepreneurial Institutions Leaders (KNEIL) Council that was convened by the

KeNIA to provide thought leadership. This is a step in the right direction to build ecosystem-wide partnerships and linkages.

The IWG members were selected by the top leadership of their universities to champion research commercialization efforts. They were further supported by their institutions and KeNIA to undergo a series of capacity-building trainings covering aspects of innovation, entrepreneurship, and intellectual property management. The universities' top leadership (specifically vice-chancellors) also underwent high-level training in research commercialization and entrepreneurship including international learning/benchmarking tours to India and UK. Such commitment of human and financial resources is evidence enough of leadership support to boost research commercialization.

IWG members were able to facilitate various activities supporting entrepreneurship and research commercialization in their respective institutions. Their leadership role was able to serve as a catalyst to research commercialization in their universities. Among the activities facilitated by the IWGs include benchmarking with peer institutions, mainstreaming of the Entrepreneurial Institutional Maturity Framework (EIMF) tool developed by KeNIA, review of institutional policies relating to research commercialization and entrepreneurship, filling of intellectual property protection of innovations by researchers in their respective institutions, and institution-based research to commercialization (R2C) capacity building programs.

RECOMMENDATIONS

The study recommends strengthening the institutional framework for entrepreneurship and commercialization by addressing bureaucratic inefficiencies, particularly in public universities. The current systems are characterized by long chains of command, excessive consultations, and complex approval processes. To address this, universities should consider deliberate policy design or redesign in areas such as research, intellectual property, commercialization, and resource mobilization. Additionally, forming autonomous or semi-autonomous Special Purpose Vehicles (SPVs) to drive commercialization efforts can help streamline operations and accelerate decision-making.

It is also recommended that universities increase budgetary allocation toward entrepreneurship and commercialization activities. Given the declining government funding and the demands of the new higher education financing model, universities must diversify their funding sources. This includes tapping into large research grants, developing innovative public-private partnerships, and leveraging alumni networks. Further, financial management policies should

be reviewed to ensure that once funds are secured, they are easily accessible to researchers while maintaining accountability and prudent use.

Another key recommendation is for universities to provide greater institutional support for academic staff engaged in innovation and product commercialization. This includes reviewing their academic staff promotion criteria to recognize community-serving innovations alongside traditional scholarly publications. Workload allocations should be adjusted to allow researchers more time for commercialization efforts, such as reducing teaching responsibilities for those working on product development. Motivating and retaining competent staff is essential for meaningful research translation.

Finally, the study emphasizes the importance of fair and transparent revenue-sharing models that take into account the university's support and the commercial potential of innovations. Leadership must be objective and merit-driven in supporting commercialization initiatives, guarding against internal politics and systemic frustrations. Strengthening research and innovation directorates through capacity building and governance policies is critical. Additionally, external institutions like the Kenya National Innovation Agency and the National Research Fund should develop tailored support strategies, working closely with individual universities to help them exploit their specific strengths and build capacity through funding, policy support, and strategic partnerships.

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