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Commercialization of Intellectual Property Rights in Kenyan Universities

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Abstract

This study examined the commercialization of intellectual property (IP) rights within Kenyan universities, focusing on the level of IP awareness among university staff, as well as the current state of institutional IP policies. With declining government funding and an increasing demand for innovation-driven revenue, universities faced mounting pressure to transform research outputs into commercially viable products. However, several challenges, such as limited awareness, inadequate policies, and weak institutional linkages, continued to hinder this process. A mixed-method research design was employed, utilizing a structured questionnaire administered via the KoboCollect Toolbox. A total of 52 respondents from both public and private universities participated, resulting in a 94.5% response rate. Findings revealed that 59.6% of staff reported the existence of Technology Transfer or IP offices and formal IP policies within their institutions. Regular IP seminars were uncommon (21.2%), and only half of respondents rated their IP knowledge as "good." Commercialization activity was modest and skewed toward books (28.8%) and software sales (30.8%). Private universities outperformed public counterparts in securing patents, trademarks, and copyrights, whereas public institutions showed relative strength in industrial designs and traditional medicine protections. Among the recommendations is the need for a longitudinal study to assess the developmental trajectory of universities towards embracing IP fully.

Keywords: commercialization, intellectual property rights, universities

1. Introduction

Over the past decade, Kenya has experienced a significant surge in the establishment of higher education institutions[1]. Available data indicate that the number of public higher education institutions has increased by 52% since 2015, while private institutions have grown by 10%[2]. As of 2020, Kenya boasted a total of 74 universities, with an estimated student population of around 600,000 pursuing various degree programs. However, this exponential growth in higher institutions of learning has not been accompanied by advancements in quality and relevance[3]. This mismatch is due to the many challenges encountered by universities in Kenya. These challenges stem from various factors amongst them being limited government funding, high operational costs, and the

[1] S Koyi et al., (2020). Higher Education Trajectory in Kenya: Historical Lessons and Prospects for Universities. *African Journal of Emerging Issues (AJOEI).*

[2] N Cowling, (2023). Number of Public and Private Universities in Kenya 2015-2022. Statista on Sep 2023 at < https://www.statista.com/statistics/1237787/number-of-public-and-private-universities-in-kenya/ > last accessed 21st March 2024

[3] AO Olukoahi and PT Zeleza, (2018). Universities in the Twentieth Century, at < https://www.africanbookscollective.com/books/african-universities-in-the-twenty-first-century.-vol-1 > last accessed 21 March 2024

increasing demand for improved academic infrastructure and resources[1].

Studies have attributed most of these challenges to a shortfall in funding.[2] Data from the Universities Fund (UF), responsible for the distribution of allocated government funds to public and private universities, reveals a decline in funding from 66.4% to 48.11% between fiscal year 2018/2019 and 2022/2023[3]. In the same period, there was an increase in student population from 233,218 to 356,188 students. However, government capitation only covered approximately 57% of students, significantly below the target of 80%[4]. The allocated funds are primarily for recurrent expenses. Many university departments are understaffed. As a mitigating measure, the universities have resorted to hiring part-time staff whose payments are delayed for up to four years after offering services to the university. Universities also suffer from inadequacy of physical resources and infrastructure[5].

These challenges have necessitated the exploration of alternative revenue streams and funding models to sustain and advance the quality of education and research offered by these institutions. One significant approach involves revision of tuition fee structures, with proposals to triple fees for government-sponsored students and prioritize self-sponsored programs[6]. Additionally, universities have taken steps to streamline their academic models by scrapping underperforming programs and closing satellite campuses[7]. These measures aim to optimize resources and put more focus on high-demand programs to attract more students, both locally and internationally.

Amidst the ongoing challenges and reforms, Intellectual Property (IP) emerges as a promising avenue for universities to not only protect their innovative creations but also to generate additional revenue[8]. Institutions of higher learning are known as fertile grounds for research and innovation[9]. As a core mandate of universities, research initiatives from both students and faculty have often led to innovative products and services such as the money transfer service popularly known as MPESA[10]. However, universities still face significant challenges in marketing and commercialization of research and innovative ideas. Studies have identified the key institutional factors hindering the commercialization of IPs. These include a lack of an IP policy, a low general awareness on IP, lack of an entrepreneurial and innovative culture, and poor collaboration between universities, government and industry.[11]

The lack of an institutional IP policy is a major hindrance to the commercialization of research and innovations in universities. An IP policy is a formal document issued by a university or research institution that regulates IP emanating from the institution. IP policies define the ownership and usage rights of IPs, and they detail procedures for managing IPs.[12] This includes identifying, evaluating, and protecting IPs, as well as collaborating with third parties. Additionally, these policies cover commercialization and benefit sharing from successful IPs. The lack of a clear and publicly available IP policy limits awareness of IPRs, exposes IPs and researchers to theft

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[1] Mutua J, (2021). University Crisis Deepens as Deficit Doubles to Sh27bn. *Business Daily*. 2021-December-1. https://www.businessdailyafrica.com/bd/news/university-crisis-deepens-deficits-doubles-sh27bn-3636862/ accessed 19 March 2024.

[2] Commission for University Education, (2016). State of University Education in Kenya.

[3] Universities Fund, (2024). New Higher Education Funding Model. https://www.universitiesfund.go.ke/new-higher-education-funding-model/ accessed 19 March 2024.

[4] Salaries and Remuneration Commission, (2023, March 27). Exploring Solutions Affecting Public Universities. SRC at < https://src.go.ke/2023/03/27/exploring-solutions-to-challenges-affecting-public-universities/ > last accessed 19th March 2024

[5] Mukhwana E et al, (2016). *State of University Education in Kenya*. Commission for University Education.

[6] The EastAfrican, (2023, April 1). EA's Struggle for Shrinking Funds Choking Higher Education. https://www.theeastafrican.co.ke/tea/news/east-africa/shrinking-funds-choking-ea-higher-education-4181310/ accessed 19 March 2024.

[7] Ibid.

[8] Corsino M and S Torrisi, (2024). University Engagement in Open Innovation and Intellectual Property: Evidence from University–Industry Collaborations. *Journal of Industrial and Business Economics*, *50*, 781-813.

[9] National Commission for Science, Technology and Innovation, (2024, March 23). Universities Tipped on Maximizing Research Reach. https://www.nacosti.go.ke/2024/03/23/.../ accessed 3 June 2024.

[10] Silicon Cape, (2012, November 13). The Curious Case of Nyagaka Anyona Ouko, the Mobile Money Transfer "Innovator"–Part I. https://www.siliconcape.com/.../ accessed 3 June 2024.

[11] Wekesa M et al, (2024). Commercialization of Intellectual Property Rights at Universities as an Additional Revenue Stream. *Law and Economy*, *3*(3), 37.

[12] World Intellectual Property Organization, (2024). IP Policies for Universities and Research Institutions. https://www.wipo.int/web/technology-transfer/ip-policies accessed 3 June 2024.

and exploitation.[1] In Kenya, institutions such as the University of Nairobi,[2] Kenyatta University, Mount Kenya University[3] and Zetech University[4] have a comprehensive IP policy that is publicly available. Despite the existence of IP policy in some higher institutions of learning, the lack of awareness and qualified specialists on IP is also a major obstacle to efforts in commercialization.[5] There is a general low awareness and recognition of IPs among the wider public, not just institutions, across Africa.[6] In higher institutions of learning, studies have emphasized the need for awareness of the existence of IP commercialization avenues that could be exploited by both faculty and students. This is aimed at encouraging entrepreneurial innovations.[7]

The universities' focus on teaching and pure research as opposed to applied research also impedes the commercialization of IPs.[8] Faculty often promotes quick and predictable research studies by students capable of meeting the basic requirements for their specific programs. Innovative research geared towards the development of new products and services is viewed as costly and inconvenient due to limited time and resources. Industry, on the other hand, is interested in applied research that leads to innovation of solutions that are relevant to their needs. This mismatch between the industry needs and the focus of universities highlights a significant gap. The evident lack of an entrepreneurial and innovative culture within academic institutions not only discourages the development of new innovations but also hampers efforts to collaborate with industry.[9]

Universities often engage in 'technology push', a situation where researchers develop products based on their own interests without consultation with industry to identify existing needs or gaps. This approach can result in low demand for such products by consumers and the industry.[10]

Successful commercialization of IPs also requires collaboration between the government, universities, and industry, also known as the Triple Helix approach.[11] Without effective collaboration, government policies and funding strategies may not align with the practical needs of industries or the research priorities of universities, leading to inefficient use of resources and missed opportunities for innovation.

Arising from the challenges, research outputs and intellectual property generated by universities often remain underutilized due to limited pathways for commercialization and practical application in the market.[12]

This fragmentation results in a disjointed innovative ecosystem where knowledge and resources are not effectively shared, ultimately stalling technological progress and economic growth. Addressing this issue requires fostering stronger collaboration and alignment among the three sectors to create a more cohesive and

[1] Wekesa M et al, (2024). Commercialization of Intellectual Property Rights at Universities as an Additional Revenue Stream. *Law and Economy*, *3*(3), 37.

[2] University of Nairobi, (2006). Intellectual Property Policy. University of Nairobi Press. https://www.uonbi.ac.ke/sites/default/files/Intellectual-Property-Policy.pdf accessed 3 June 2024.

[3] Mount Kenya University, (2017). Intellectual Property Policy. https://cgsr.mku.ac.ke/wp-content/uploads/2017/09/Intellectual-property-Policy.pdf accessed 3 June 2024.

[4] Zetech University, (n.d.). Intellectual Property Policy. https://research.zetech.ac.ke/... accessed 3 June 2024.

[5] Sattiraju V K et al, (2022). Intellectual Property Rights Policies of Higher Education Institutions (HEIs) in India: A Cross-Sectional Study. *Journal of Science and Technology Policy Management*, *13*(4).

[6] Kakonge J, (2014). Raising IP Awareness in Africa: A Call to Action. *WIPO Magazine*. https://www.wipo.int/wipo_magazine/en/2014/02/article_0009.html accessed 3 June 2024.

[7] Mudinyu B, (2021). Challenges of Implementing Intellectual Property Protection for Entrepreneurial Innovations among Selected Agencies in Kenya. PhD thesis, University of Nairobi.

[8] IM Weerasinghe and HH Dedunu, (2019). Impact of Institution Factors to University-Industry Knowledge Exchange: A Study Based on Sri Lankan University System. Last accessed on 4 June 2024.

[9] T Khademia and K Ismaila, (2013). Commercialization Success Factors of University Research Output. *Journal Teknologi (Social Sciences)*, *64*(3), 137-141.

[10] Wekesa M et al, (2024). Commercialization of Intellectual Property Rights at Universities as an Additional Revenue Stream. *Law and Economy*, *3*(3), 37.

[11] M Ranga, et al, (2013). Triple Helix Systems: An Analytical Framework for Innovation Policy and Practice in the Knowledge Society. *Industry and Higher Education*, 27.

[12] Etzkowitz H et al, (2000). The Dynamics of Innovation: From National Systems and "Mode 2" to a Triple Helix of University-Industry-Government Relations. *Research Policy*, *29*, 109.

productive environment for innovation.[1] This problem has been extensively discussed in the literature, highlighting the critical need for improved interaction among these entities to enhance the commercialization of intellectual property and drive economic progress.[2]

This study sought to interrogate the extent to which the absence of an institutional intellectual property (IP) policy and a lack of awareness affect the commercialization of IP. The objectives were firstly, to assess the general awareness of IP rights among university staff and students, and secondly, to assess the current state of IP policies in universities.

The study hinged on Locke's labor theory, which posits that when an individual expends labor to create something, they inherently own the resulting product. This position was supported by other philosophers such as Hettinger,[3] Himma[4], and Moore[5] who have noted that developing intellectual creations can be costly, exhausting, and discouraging, necessitating resilience, sacrifice, and patience. They argue that this laborious process justifies the granting of IPRs and the related benefits. This principle underpins modern IP law, which grants creators exclusive rights to their inventions, writings, and other intellectual outputs. By recognizing labor as the source of property rights, Locke's theory supports the idea that creators should control and benefit from their intellectual endeavors, providing philosophical justification for laws that protect IP.

In this study, the independent variables were the presence of IP policies and the availability of IP specialists. The dependent variable was the extent of IP commercialization, measured by metrics such as the number of patents licensed, revenue generated from IP, and the successful market introduction of IP-based products and services.

2. Methodology

This research adopted a descriptive research design and used a mixed-methods approach, integrating normative, quantitative, and qualitative research methodologies.[6] Purposive sampling was used to select universities in Kenya, whose sample size was determined by Yamane's (1967) formula at 95% confidence level to be 55 universities. One representative from each of the universities participated in the study. The people selected were those in charge of research activities at their institutions. Of these, 24 were public while 31 were private institutions.

Data collection for this study was conducted online using Kobo Collect Survey Toolbox, a digital platform designed for efficient and structured survey administration. The system enabled respondents to participate via mobile devices or web interfaces. The questionnaire consisted of structured, semi-structured, and open-ended questions with features such as skip logic and validation checks to enhance data accuracy. Secure cloud-based storage ensures confidentiality and compliance with ethical data collection standards, while real-time monitoring and automatic backup functions minimized data loss. Additionally, Kobo Collect's integration with statistical analysis tools facilitated seamless data processing post-collection. This approach enhanced reach, improved response rates, reduced costs, and ensured high-quality data for meaningful analysis in the study.

3. Ethical Considerations

A license to conduct the study was obtained from the National Council for Science, Innovation and Technology (License No. NACOSTI/P/25/416427 dated 26/02/2025). The study received approval from the Daystar University Research, Ethics, and Scientific Board.

Before engaging in the questionnaire, each potential participant was required to read and fill out a consent form. None of the participants declined to fill out the form. In line with the Data Protection Act, responses received were anonymized to avoid disclosing the details of the study participants.

Qualitative data was analyzed through a scrutiny of emerging themes. The data was analyzed using statistical tools such as SPSS and Excel. Descriptive statistics such as frequencies, graphs, tables, percentages, and cross-tabulations were used to present quantitative data.

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[1] Ranga M et al, (2013). Triple Helix Systems: An Analytical Framework for Innovation Policy and Practice in the Knowledge Society. *Industry and Higher Education*, *27*, 237. https://doi.org/10.5367/ihe.2013.0165 accessed 5 June 2024.

[2] Leydesdorff L and M Meyer, (2006). The Triple Helix of University-Industry-Government Relations. *Scientometrics*, *36*. https://doi.org/10.1007/s11192-005-5739-8 accessed 5 June 2024

[3] Hettinger E C, (1989). Justifying Intellectual Property. *Philosophy and Public Affairs*, *18*(1), 31.

[4] Himma K E, (2008). The Justification of Intellectual Property: Contemporary Philosophical Disputes. *Journal of the American Society for Information Science and Technology*, *59*(7), 1143.

[5] Moore A D, (2017). *Intellectual Property and Information Control: Philosophic Foundations and Contemporary Issues*. Routledge.

[6] J Creswell et al, (2003). Advanced mixed' in Abbas Tashakkori and Charles Teddlie (eds), *Handbook of Mixed Methods in Social & Behavioral Research*. Sage Publications, 209.

4. Results and Discussion

This study recorded a response rate of 94.5% with 52 responses obtained from a total sample size of 55 participants. In this study, 62% of the respondents sampled were male, while 38% were female. The survey results indicate that 59.6% of respondents reported that their institution has an Intellectual Property (IP) or Technology Transfer (TT) Office, demonstrating a majority with formal structures for managing intellectual property and facilitating technology commercialization.

4.1 Institutional Adoption of Intellectual Property (IP) Policies

The survey results indicate that 59.6% of respondents reported that their institution has an Intellectual Property (IP) policy, demonstrating a strong presence of formalized IP governance structures.

Research indicates that universities with established IP offices are more likely to implement structured IP policies that facilitate technology transfer, patenting, and industry collaboration, thereby enhancing commercialization outcomes.[1] According to WIPO, institutional IP policies provide a framework for ownership, management, and commercialization of intellectual property, providing an enabling environment to commercialization stakeholders through structured and legal certainty.[2] Additionally, studies highlight that effective IP policies within universities contribute to increased research commercialization and knowledge transfer, reinforcing the strategic importance of IP offices in academic institutions.[3]

On whether universities hold seminars on IP for staff, 21% reported regular seminars, 56% occasional seminars, and 23% held no seminars. Institutions with formal IP literacy frameworks tend to foster stronger innovation ecosystems and commercialization outcomes emphasizing the importance of structured IP education programs in universities.[4] Studies also found that universities without consistent IP education programs struggle with effective technology transfer and research commercialization.[5] Addressing these gaps through targeted awareness initiatives and faculty training programs could enhance institutional IP awareness and strengthen commercialization efforts.[6]

These findings highlight inconsistencies in IP education among university staff, emphasizing the need for more structured and regular training programs to enhance awareness and engagement.

4.2 Knowledge of Intellectual Property

Asked whether they had a good knowledge of IP, 50% of staff respondents reported they had good knowledge. These results are consistent with studies that found that IP literacy among university staff is often inconsistent, with many institutions lacking structured training programs to enhance awareness and application of IP principles.[7]

4.3 Institutional Linkages and Innovation Commercialization Frameworks

The table below shows the connectivity between research structures, intellectual property management, and commercialization efforts within the university.

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[1] WIPO, 'Intellectual Property Policies for Universities and Research Institutions' (World Intellectual Property Organization, 2023) https://www.wipo.int/en/web/technology-transfer/ip-policies accessed 5 June 2025.

[2] Ibid.

[3] DS Siegel, R Veugelers and M Wright, (2007). Technology Transfer Offices and Commercialization of University Intellectual Property: Performance and Policy Implications. *Oxford Review of Economic Policy*, *23*(4), 640. http://www.jstor.org/stable/23606751 accessed 5 June 2025.

[4] Q Lei and Y Tian, (2024). Construction of Intellectual Property Literacy Education Mode in University Libraries. *Libri*, *74*(2), 185. https://doi.org/10.1515/libri-2023-0056 accessed 5 June 2025.

[5] Y Liu and Y Zhao, (2025). Intellectual Property Information Literacy Education: Evidence from 30 Chinese National IP Demonstration Universities. *Humanities and Social Sciences Communications*, *12*, 366. https://doi.org/10.1057/s41599-025-04679-1 accessed 5 June 2025.

[6] VV Dusen, (2013). Intellectual Property and Higher Education: Challenges and Conflicts. *Administrative Issues Journal: Education, Practice, and Research*, 3(2), 10. https://files.eric.ed.gov/fulltext/EJ1057074.pdf accessed 5 June 2025.

[7] S Ngwenya and OB Onyancha, (2025). Intellectual Property Awareness, Education and Training Programmes at Universities in Zimbabwe. *South African Journal of Libraries and Information Science*, *91*(2), 1. https://www.scielo.org.za/pdf/sajlis/v91n2/03.pdf accessed 5 June 2025.

Table 1. Institutional Linkages and Innovation Commercialization Frameworks

Survey Item	Univ. Type	Yes (%)	No (%)	Not Sure (%)	Don't Know (%)
Internal linkages between Research Directorate and IP/TT Office	Private	28.8	5.8	25.0	0
	Public	19.2	3.8	13.5	3.8
Institution has products from staff inventions	Private	38.5	1.9	15.4	3.8
	Public	26.9	3.8	7.7	1.9
Developed unique/secret formulations for marketing	Private	15.4	17.3	21.2	5.8
	Public	13.5	3.8	19.2	3.8
Office for harnessing staff and student inventions	Private	34.6	11.5	9.6	3.8
	Public	25.0	3.8	9.6	1.9

The study examined institutional mechanisms supporting intellectual property (IP) commercialization across public and private universities, with a focus on internal linkages, innovation outputs, and dedicated support structures.

Survey results indicated that private universities demonstrated relatively stronger engagement in institutional IP commercialization frameworks than public universities. Specifically, 28.8% of respondents from private universities affirmed the existence of internal linkages between the Research Directorate and the IP/Technology Transfer Office (TTO), compared to 19.2% in public universities. This suggests that private institutions may be more proactive in establishing formal structures to support IP management. According to the Kenya National Innovation Agency, many public universities struggle with under-resourced or ineffective TTOs, which hampers coordination between research and commercialization functions.[1] A sizable proportion of respondents in both types of institutions were uncertain about this linkage (25.0% private; 13.5% public), suggesting a lack of clarity or limited visibility regarding internal coordination structures.

In terms of tangible outputs, 38.5% of staff in private universities indicated that their institutions had produced marketable products derived from staff inventions, while only 26.9% of public university respondents reported similar outcomes. This aligns with findings which found that while Kenyan universities are generating innovations, the translation of these into marketable products remains limited due to weak commercialization strategies and insufficient financial support.[2]

Lastly, 34.6% of private university respondents confirmed the presence of an office dedicated to harnessing staff and student inventions, in contrast to 25% in public institutions. This difference underscores the growing commitment of private-sector academia to institutionalize innovation support, despite fewer public resources. This supports the observation that private institutions may be more agile in institutionalizing innovation support mechanisms.

These results illustrate an emerging trend where private universities appear to be more proactively engaged in establishing commercialization-oriented structures and activities. However, the high incidence of "Not sure" and "Don't know" responses across categories suggests that both institutional types face challenges related to awareness, communication, and integration of IP-related functions. Studies have highlighted that while universities establish technology transfer offices, their effectiveness depends on institutional policies, funding, and faculty engagement.[3] The table below summarizes the commercialization of various IP-related assets within universities:

[1] Kenya National Innovation Agency, Commercialisation Guidelines Toolkit (Innovation Agency, September 2023) https://www.innovationagency.go.ke/storage/pub-docs/ken_pub_CommercialisationToolkit.pdf accessed 24 June 2025.

[2] J Odhiambo, (4 June 2025). Commercialization of Intellectual Property in Kenya: Unlocking Innovation for Economic Growth. *Mount Kenya Times*. https://mountkenyatimes.co.ke/commercialization-of-intellectual-property-in-kenya-unlocking-innovation-for-economic-growth/ accessed 24 June 2025.

[3] G Slowinski and KW Zerby, (2008). Protecting IP in Collaborative Research. *Research Technology Management*, *51*(6), 58. http://www.jstor.org/stable/24135929 accessed 5 June 2025.

Table 2. Commercialization activity across different types of IP

Survey Item	Univ. Type	Yes (%)	No (%)	Not Sure (%)	Don't Know (%)
Earn money from IP commercialization	Private	15.4	11.5	30.8	1.9
	Public	17.3	5.8	13.5	3.8
Sold IP to companies	Private	15.4	9.6	32.7	1.9
	Public	11.5	3.8	23.1	1.9
Sells books authored by staff	Private	28.8	9.6	19.2	1.9
	Public	19.2	3.8	15.4	1.9
Sells music composed by staff	Private	5.8	19.2	28.8	5.8
	Public	3.8	11.5	23.1	7.7
Sold sportsmen/women to big sports clubs	Private	9.6	17.3	30.8	1.9
	Public	7.7	9.6	21.2	1.9
Sold films/plays developed by staff/students	Private	15.4	17.3	23.1	3.8
	Public	1.9	7.7	28.8	1.9
Sold software developed by staff/students	Private	21.2	13.5	23.1	1.9
	Public	9.6	7.7	21.2	1.9
Sold new plant varieties to seed companies	Private	7.7	25.0	25.0	1.9
	Public	7.7	5.8	25.0	1.9
Sold secret formulations to industry	Private	7.7	19.2	28.8	3.8
	Public	9.6	3.8	23.1	3.8

In terms of specific commercial products, the commercialization of books authored by staff was more prominent in private universities (28.8% reporting "Yes") than in public universities (19.2%). The sale of music composed by staff was much less common in both sectors, with only 5.8% and 3.8% of respondents affirming this activity in private and public universities, respectively. Moreover, when considering the sale of films or plays developed by staff or students, private universities again led with 15.4% compared to a minimal 1.9% in public universities. Software development as a commercialization activity was notably higher in private institutions (21.2% "Yes") as opposed to public ones (9.6% "Yes"), while the commercialization of new plant varieties was equally distributed (7.7% "Yes" in both settings). The sale of secret formulations to industry was affirmed by 7.7% of respondents in private universities and 9.6% in public ones.

Recent studies have argued that the heterogeneity in commercialization outputs across universities can be attributed to the varying levels of institutional support and the alignment of commercialization strategies with specific academic strengths and market opportunities.[1]

The evidence that private universities were more active in commercializing creative and technological outputs, such as software and artistic products, indicates an emerging entrepreneurial spirit that could serve as a model for public institutions. To foster a more robust commercialization ecosystem, both public and private universities must address awareness gaps and invest in capacity-building initiatives tailored to their innovation portfolios. Strengthening TTOs and establishing clearer metrics for commercialization success may help minimize uncertainty among staff and promote more consistent commercialization practices across the board.

4.4 Institutional Intellectual Property (IP) Certifications and Protection Strategies

Table 3. Institutional IP Certifications and Protection Strategies

Survey Item	Univ. Type	Yes (%)	No (%)	Not Sure (%)	Don't Know (%)

[1] J Ayisi, (26 May 2020). Presentation 2A: Innovation by Kenyan Universities for Development. Maseno University Research and Innovation Capacity-Building Conference, Kisumu Hotel. https://maseno.ac.ke/sites/default/files/2021-06/Presentation-2a-drayisi-innovation-by-kenyan-universities-for-developemt.pdf accessed 24 June 2025.

Patent certificates	Private	28.8	5.8	23.1	1.9
	Public	19.2	3.8	15.4	1.9
Trademark certificates	Private	26.9	5.8	25.0	1.9
	Public	21.2	3.8	13.5	1.9
Copyright certificates	Private	34.6	5.8	17.3	1.9
	Public	19.2	3.8	15.4	1.9
Industrial designs certificates	Private	19.2	11.5	26.9	1.9
	Public	23.1	3.8	9.6	3.8
Utility Model certificates	Private	21.2	9.6	26.9	1.9
	Public	19.2	3.8	11.5	5.8
Traditional Medicine certificates	Private	7.7	25.0	23.1	3.8
	Public	11.5	7.7	19.2	1.9
Cultural expression certificates	Private	15.4	11.5	26.9	5.8
	Public	13.5	3.8	17.3	5.8

Private universities reported a higher number of certifications for patents (28.8%), trademarks (26.9%), utility models (21.2%), and cultural expressions (15.4%). Public universities reported higher figures for industrial designs (23.1%) and traditional medicine (11.5%). Overall, these are low percentages that suggest a low activity of either generation or registration of Ips.

The Kenya National Innovation Agency (2021) has also emphasized that robust internal communication and clear reporting channels are essential for effective IP management and commercialization. Moreover, the diversification seen in certifications from conventional areas such as patents and trademarks to emerging sectors like traditional medicine and cultural expressions mirrors global trends in higher education, where institutions are increasingly diversifying their innovation portfolios to capture a broader range of economic opportunities.[1]

5. Conclusion

The findings demonstrated that Kenyan universities possess the foundational elements for IP commercialization, such as offices, policies, and early-stage revenue streams, yet fail to translate tangible commercial outcomes. Institutional fragmentation, limited staff awareness, and insufficient IP expertise have hindered the effective exploitation of both conventional (patents, software) and non-traditional assets (cultural expressions, sports talent). Private universities exhibited greater agility, but public institutions hold untapped strengths in specialized domains.

It is recommended that universities should conduct regular, mandatory training and mentorship programs for faculty and staff. In addition, the study recommends the forging of a stronger “Triple Helix” approach amongst universities, industry, and government. It is recommended that future research should incorporate multi-stakeholder perspectives by including students, university administrators, industry partners, and policymakers alongside academic staff. This approach would provide a more comprehensive understanding of institutional dynamics, user experiences, and the commercialization landscape throughout the innovation pipeline. Also, it is recommended that future studies should adopt a longitudinal design to track changes in IP awareness, policy implementation, and commercialization outcomes over time. Such a design would allow for analysis of causality and the effectiveness of specific interventions or national policy shifts. By addressing these elements, future research can yield richer insights into how Kenyan universities can build resilient, inclusive, and innovation-driven IP ecosystems.

References

Aaboen L and Holgersson M, (2019). A Literature Review of Intellectual Property Management in Technology Transfer Offices: From Appropriation to Utilization. *Technology in Society*, 59, 101192.

Abbott R, (2020). *The Reasonable Robot: Artificial Intelligence and the Law*. Cambridge University Press.

Afonso O, P C Neves et al, (2021). The Link between Intellectual Property Rights, Innovation, and Growth: A Meta-Analysis. *Economic Modelling*.

[1] Okutan V, (2024, November 5). Managing University Patent Portfolios: A Smarter Approach to Inventions. IP Business Academy. https://ipbusinessacademy.org/... accessed 24 June 2025.

https://www.sciencedirect.com/science/article/abs/pii/S0264999321000274 accessed 24 March 2024.

Ayiro LP, (2024). *Educational Research Methods: A Functional Approach*. Kenya Literature Bureau.

Ayò O Olukoahi and P T Zeleza, (2018). Universities in the Twentieth Century. African Books Collective. https://www.africanbookscollective.com/books/african-universities-in-the-twenty-first-century.-vol-1 accessed 21 March 2024.

Bejarano J B Padilla et al, (2023). University Technology Transfer from a Knowledge-Flow Approach—Systematic Literature Review. *Sustainability*, 15, 65550.

Bentham J, (1789). *An Introduction to the Principles of Morals and Legislation*. Clarendon Press.

Bentley L and B Sherman, (2022). *Intellectual Property Law*. 6th edn, Oxford Press.

Bettaieb A, (2019). *Technology Transfer and Commercialization of IP Rights by Universities and Research Organizations*. WIPO.

Commission for University Education, (2016). State of University Education in Kenya.

Corsino M and S Torrisi, (2024). University Engagement in Open Innovation and Intellectual Property: Evidence from University–Industry Collaborations. *Journal of Industrial and Business Economics*, *50*, 781-813.

Cowling N, (2023, September). Number of Public and Private Universities in Kenya 2015–2022. *Statista*. https://www.statista.com/statistics/1237787/number-of-public-and-private-universities-in-kenya/ accessed 21 March 2024.

Dedunu H H and I M Weerasinghe, (2019). Impact of Institution Factors to University-Industry Knowledge Exchange: A Study Based on Sri Lankan University System. *International Journal of Management, Innovation & Entrepreneurial Research*, *5*(1), 40-48.

Derclaye E and T Taylor, (2015). Happy IP: Replacing the Law and Economics Justification for Intellectual Property Rights with a Well-Being Approach.

Etzkowitz H et al, (2000). The Dynamics of Innovation: From National Systems and "Mode 2" to a Triple Helix of University-Industry-Government Relations. *Research Policy*, *29*, 109.

Exp Salaries and Remuneration Commission, (2023, March 27). Exploring Solutions Affecting Public Universities. https://src.go.ke/2023/03/27/exploring-solutions-to-challenges-affecting-public-universities/ accessed 19 March 2024.

Gaikwad A, (2020). A Study of Intellectual Property Rights and Its Significance in Business. *Journal of Information and Computational Science*.

Gordon W J, (1993). A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property. *Yale LJ*, *102*, 1533.

Guerrero M and J Roncancio-Marin, (2024). University Technology Transfer Offices' Capabilities in Responding to Societal Challenges: Lessons from an Exploratory Study During the COVID-19 Pandemic. *Journal of Technology Transfer* (forthcoming).

Hashim H M and M H M Khair, (2020). Justifications of Intellectual Property Rights: A Discussion on Locke and Hegel's Theories, *Jurnal Hukum Novelty*, *11*(2).

Hettinger E C, (1989). Justifying Intellectual Property. *Philosophy and Public Affairs*, *18*(1), 31.

Himma K E, (2008). The Justification of Intellectual Property: Contemporary Philosophical Disputes. *Journal of the American Society for Information Science and Technology*, *59*(7), 1143.

Kakonge J, (2014). Raising IP Awareness in Africa: A Call to Action. *WIPO Magazine*. https://www.wipo.int/wipo_magazine/en/2014/02/article_0009.html accessed 3 June 2024.

Kenya National Innovation Agency, (2023, September). *Commercialisation Guidelines Toolkit*. https://www.innovationagency.go.ke/storage/pub-docs/ken_pub_CommercialisationToolkit.pdf accessed 24 June 2025.

Kenyatta University, (2015). Intellectual Property Rights Policy. https://www.ku.ac.ke/ipru/wp-content/uploads/2015/05/IPR_Policy.pdf accessed 3 June 2024.

Khademia T and K Ismail, (2013). Commercialization Success Factors of University Research Output. *Jurnal Teknologi (Social Sciences)*, *64*, 137.

Khair M H M and H M Hashim, (2020). Justifications of Intellectual Property Rights: A Discussion on Locke and Hegel's Theories. *Jurnal Hukum Novelty*, *11*(2).

Law Notes, (2022, November 18). Utilitarian Theory of Property by Bentham.

https://lawnotes.co/utilitarian-theory/ accessed 18 May 2024.

Lei Q and Y Tian, (2024). Construction of Intellectual Property Literacy Education Mode in University Libraries. *Libri*, *74*(2), 185.

Leydesdorff L and M Meyer, (2006). The Triple Helix of University-Industry-Government Relations. *Scientometrics*, *36*.

Liu Y and Zhao Y, (2025). Intellectual Property Information Literacy Education: Evidence from 30 Chinese National IP Demonstration Universities. *Humanities and Social Sciences Communications*, *12*, 366.

Locke J, (1988). *Two Treatises of Government*. Laslett ed, CUP.

Meyer M and L Leydesdorff, (2006). The Triple Helix of University-Industry-Government Relations. *Scientometrics*, *36*.

Moore A D, (2017). *Intellectual Property and Information Control: Philosophic Foundations and Contemporary Issues*. Routledge.

Mount Kenya University, (2017). Intellectual Property Policy. https://cgsr.mku.ac.ke/wp-content/uploads/2017/09/Intellectual-property-Policy.pdf accessed 3 June 2024.

Mudinyu B, (2021). Challenges of Implementing Intellectual Property Protection for Entrepreneurial Innovations among Selected Agencies in Kenya. PhD thesis, University of Nairobi.

Mukhwana E et al, (2016). *State of University Education in Kenya*. Commission for University Education.

Mutua J, (2021). University Crisis Deepens as Deficit Doubles to Sh27bn. *Business Daily*. 2021-December-1. https://www.businessdailyafrica.com/bd/news/university-crisis-deepens-deficits-doubles-sh27bn-3636862/ accessed 19 March 2024.

National Commission for Science, Technology and Innovation, (2024, March 23). Universities Tipped on Maximizing Research Reach. https://www.nacosti.go.ke/2024/03/23/.../ accessed 3 June 2024.

Neves P C, O Afonso et al, (2021). The Link between Intellectual Property Rights, Innovation, and Growth: A Meta-Analysis. *Economic Modelling*.

Ngoasong M and Ozor N, (2023). University-led Ecosystems for Sustained Innovation and Entrepreneurship Development in Kenya. ATPSN Technopolicy Brief November.

Ngwenya S and Onyancha O B, (2025). Intellectual Property Awareness, Education and Training Programmes at Universities in Zimbabwe. *South African Journal of Libraries and Information Science*, *91*(2), 1.

O'Shea R P et al, (2005). Delineating the Anatomy of University Technology Transfer: Autonomy, Competence, and Organizational Culture. *Research Policy*, *34*, 994.

Odhiambo J, (2025, June 4). Commercialization of Intellectual Property in Kenya: Unlocking Innovation for Economic Growth. *Mount Kenya Times*. https://mountkenyatimes.co.ke/.../ accessed 24 June 2025.

Okutan V, (2024, November 5). Managing University Patent Portfolios: A Smarter Approach to Inventions. IP Business Academy. https://ipbusinessacademy.org/... accessed 24 June 2025.

Paul R, (2021). Intellectual Property Rights: A Utilitarian Perspective. SSRN 3842429.

Peredy Z and B Laki, (2021). Possible Ways of IP Commercialisation in the European Higher Education Ecosystem. *International Journal of Engineering and Management Sciences*.

Ranga M et al, (2013). Triple Helix Systems: An Analytical Framework for Innovation Policy and Practice in the Knowledge Society. *Industry and Higher Education*, *27*, 237.

Richards D G, (2002). The Ideology of Intellectual Property Rights in the International Economy. *Review of Social Economy*, *60*(4), 521.

Sattiraju V K et al, (2022). Intellectual Property Rights Policies of Higher Education Institutions (HEIs) in India: A Cross-Sectional Study. *Journal of Science and Technology Policy Management*, *13*(4).

Sherman B and L Bentley, (2022). *Intellectual Property Law*. 6th edn, Oxford Press.

Silicon Cape, (2012, November 13). The Curious Case of Nyagaka Anyona Ouko, the Mobile Money Transfer "Innovator"–Part I. https://www.siliconcape.com/.../ accessed 3 June 2024.

Spitzlinger R, (2011). On the Idea of Owning Ideas: Applying Locke's Labor Appropriation Theory to Intellectual Goods. *Masaryk University Journal of Law and Technology*, *5*(2), 273.

Tavani H T, (2005). Locke, Intellectual Property Rights, and the Information Commons. *Ethics and Information Technology*, *7*, 87.

Taylor T and E Derclaye, (2015). Happy IP: aligning intellectual property rights with well-being. Intellectual Property Quarterly, 1, pp. 1-14.

The EastAfrican, (2023, April 1). EA's Struggle for Shrinking Funds Choking Higher Education. https://www.theeastafrican.co.ke/tea/news/east-africa/shrinking-funds-choking-ea-higher-education-4181310/ accessed 19 March 2024.

Torrisi S and M Corsino, (2023). University engagement in open innovation and intellectual property: evidence from university–industry collaborations. *J. Ind. Bus. Econ.*, *50*, 781-813.

Universities Fund, (2024). Graph 21: Relationship Between Number of Students Funded and DUC Allocation. https://www.universitiesfund.go.ke/universities-data/ accessed 19 March 2024.

Universities Fund, (2024). New Higher Education Funding Model. https://www.universitiesfund.go.ke/new-higher-education-funding-model/ accessed 19 March 2024.

University of Nairobi, (2006). Intellectual Property Policy. University of Nairobi Press. https://www.uonbi.ac.ke/sites/default/files/Intellectual-Property-Policy.pdf accessed 3 June 2024.

Van Dusen V, (2013). Intellectual Property and Higher Education: Challenges and Conflicts. *Administrative Issues Journal: Education, Practice and Research*, *3*(2), 10.

Varden H, (2012). The Lockean "Enough-and-as-Good" Proviso: An Internal Critique. *Journal of Moral Philosophy*, *9*, 137.

Wekesa M and B Shihanya (eds), (2009). *Intellectual Property Rights in Kenya*. Konrad Adenauer Stiftung.

Wekesa M et al, (2024). Commercialization of Intellectual Property Rights at Universities as an Additional Revenue Stream. *Law and Economy*, *3*(3), 37.

World Intellectual Property Organization, (2024). IP Policies for Universities and Research Institutions. https://www.wipo.int/web/technology-transfer/ip-policies accessed 3 June 2024.

Zeleza P T and A O Olukoahi, (2018). Universities in the Twentieth Century.

Zetech University, (n.d.). Intellectual Property Policy. https://research.zetech.ac.ke/... accessed 3 June 2024.

Zhao Y and Y Liu, (2025). Intellectual Property Information Literacy Education: evidence from 30 Chinese National IP Demonstration Universities. *Humanit Soc Sci Commun*, *12*, 366.