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THE FUTURE OF HIGHER EDUCATION: UNIVERSITY SYSTEMS, ARTIFICIAL INTELLIGENCE AND UNIVERSITY COMPETITIVENESS IN THE GLOBAL SPACE. SYSTEMATIC LITERATURE REVIEW

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ABSTRACT
This systematic review, titled "The Future of Higher Education: University Systems, Artificial Intelligence and University Competitiveness in the Global Space," was carried out with three primary objectives. The study aimed to analyze the impact of university systems on the global competitiveness of universities. This study aimed to evaluate the moderating effect of AI on the relationship between university systems and the global competitiveness of universities. Third, it aims to determine the combined impact of university systems, artificial intelligence, and the global competitiveness of universities. The review data were obtained via a systematic search of prominent academic databases, such as Scopus, Web of Science, ERIC, and Google Scholar. The search strategy comprised a specific set of keywords and Boolean combinations, including "artificial intelligence," "university systems," "higher education," and "global competitiveness." Studies published from 2019 to 2025 were analysed. The inclusion criteria emphasised peer-reviewed studies examining the relationship between AI, institutional systems, and competitiveness within higher education. Following the application of the selection criteria and screening process, a total of twenty empirical studies were incorporated into the final analysis. The analysis of data employed a thematic synthesis approach. Data regarding study context, methodology, AI applications, outcomes, and theoretical frameworks was systematically extracted, coded, and organized into thematic categories. The findings indicate that AI is integrated into multiple areas of university operations, such as administrative processes, student support services, research management, and curriculum development. Institutions that strategically adopted AI exhibited improved efficiency, increased innovation capacity, and greater global engagement. The review identified AI as a moderating factor that enhances the positive impact of institutional systems on global competitiveness when properly aligned with strategic objectives. The research findings indicate that AI integration in higher education is transforming university operations and competition internationally. It also identified limitations in the existing literature, such as the lack of unified theoretical frameworks, insufficient longitudinal studies, and inadequate attention to regional diversity and equity implications. The review suggested that subsequent research should utilize more comprehensive and integrative models that incorporate systems theory, digital transformation frameworks, and strategic innovation perspectives. It recommended that policymakers and institutional leaders create environments that facilitate ethical, inclusive, and context-sensitive integration of AI. The conclusions and recommendations aim to guide research, policy, and institutional strategies in responding to the changing challenges and opportunities posed by artificial intelligence within the global higher education context. Higher education, university systems, artificial intelligence, and university competitiveness are critical areas of study that warrant further exploration and analysis.
KEY WORDS: *Higher Education, University Systems, Artificial Intelligence and University Competitiveness.*

1.1. BACKGROUND OF THE STUDY
Recent years have seen an increasing acknowledgement of the necessity for developing countries to reevaluate their university systems and research excellence to improve global competitiveness. The reevaluation is essential, given that higher education institutions in these countries frequently encounter challenges like insufficient infrastructure, restricted funding, and a gap between academic research and industry requirements, which impede their global competitiveness (Sample, 2024). The increase in higher education enrolment has not corresponded with economic growth and job creation, resulting in elevated unemployment rates among graduates, as noted in a recent article. Artificial Intelligence (AI) serves a crucial moderating function in this context. The incorporation of AI in university research has the potential to transform scientific discovery through enhanced data analysis, hypothesis generation, and problem-solving methodologies (Amour, 2024). Google is developing an AI 'co-scientist' tool to enhance biomedical research by identifying knowledge gaps and suggesting new ideas, thus transforming the pace of scientific discovery (Shikokoti & Mutegi, 2024). The

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University of Granada's ranking as 14th globally in AI and emerging technologies highlights the capacity of AI to enhance research quality and institutional prestige (Mundy, 2025). Additionally, AI has the potential to tackle concerns related to academic integrity and the quality of research. The simplicity of content generation through AI tools requires the revision of academic policies to mitigate misconduct and uphold the integrity of scholarly publications. The adoption of AI by universities can enhance research productivity and uphold rigorous standards, thus improving their global standing (Vincent, 2025). To improve global competitiveness, universities in developing countries must strategically reevaluate their systems and commit to research excellence. The integration of AI is a crucial element in this transformation, providing tools to address current challenges and conform to global standards. Embracing AI enables these institutions to enhance their research output and make substantial contributions to global scientific advancements.

The higher education landscape is experiencing significant transformation due to rapid technological advancements, global interconnectedness, and the changing demands of knowledge economies (UNESCO, 2022). The integration of Artificial Intelligence (AI) into university systems is central to this transformation, altering the methods of teaching, research, and administration, as well as the factors that influence global competitiveness. Universities worldwide are striving to innovate and adapt in the knowledge-driven 21st century. Institutions in developing countries, especially in Africa, encounter a dual challenge: aligning with global trends while addressing local socio-economic and technological contexts. A contextual exploration of Kenyan universities is both timely and essential (World Bank, 2021). Recent advancements in higher education access and quality in Kenya have led to increased pressure on universities to exhibit relevance, resilience, and preparedness for future challenges. It is essential to examine the deployment of AI within university systems to improve efficiency, learning outcomes, and research productivity. Moreover, the capacity of AI to personalize education, enhance resource management, and facilitate data-driven decision-making must now be recognized as an immediate necessity rather than a distant possibility. Nonetheless, there is a paucity of empirical research that rigorously evaluates the extent and effects of AI integration within Kenyan university systems, particularly regarding institutional competitiveness in the global academic context (British Council, 2018). The increasing significance of university competitiveness serves as a strategic benchmark for assessing institutional excellence and enhancing global visibility (Ehlers, 2020; Waweru & Ochieng, 2020).

Factors including internationalization, research impact, graduate employability, and global rankings are redefining the higher education agenda. However, the majority of competitiveness metrics are formulated within Western contexts, frequently neglecting the complex realities of institutions in the Global South. Kenyan universities must comprehend and adjust to these metrics while creating indigenous indicators of excellence to ensure sustainable positioning in the global arena (British Council, 2018; Kihara & Gichuhi, 2021). This research is essential and time-sensitive. The objective is to address significant knowledge deficiencies by examining the relationship between university systems, the adoption of artificial intelligence, and competitiveness in Kenyan universities. This intersectional approach will yield insights into institutional readiness and inform policy, funding strategies, and frameworks for international collaboration. The study aims to contribute to the development of a distinct African narrative regarding the modernization of higher education, ensuring that global competitiveness enhances rather than diminishes local innovation, values, and priorities.

1.2 Problem Statement

Kenyan universities are under growing pressure to improve global competitiveness by reevaluating their systems, bolstering research excellence, and incorporating artificial intelligence (AI) as a strategic facilitator. Although Kenyan institutions strive to establish themselves as hubs of academic and research excellence, notable deficiencies in governance, funding, technological integration, and research output impede their global visibility and influence (Commission for University Education [CUE], 2023). The declining research output and limited international collaborations among Kenyan universities represent a significant concern. The National Research Fund (NRF, 2022) indicates that Kenya's research output is limited, accounting for only 0.8% of global research publications, in contrast to South Africa's 4.4% and Egypt's 3.6%. The World Bank (2023) indicates that research funding in Kenya constitutes merely 0.8% of GDP, significantly below the African Union's advised threshold of 1%. Underfunding hampers innovation, limits the commercialization of research, and weakens Kenya's position in global university rankings.

The incorporation of AI within university systems is still in its nascent stages, impacting academic administration, research analytics, and digital learning platforms. A report by the Global Society of Researchers (2023) indicates that merely 15% of Kenyan universities have implemented AI-driven research tools, in contrast to 45% in middle-income countries such as Malaysia and India. This technological lag diminishes efficiency in knowledge production, peer-reviewed research dissemination, and international academic collaborations. Additionally, universities face governance inefficiencies, faculty shortages, and curricula that are outdated and misaligned with the demands of a digital global economy (Kenya Institute for Public Policy Research and Analysis [KIPPRA], 2023). The Inter-University Council for East Africa (IUCEA, 2023) reports that more than 60% of university graduates in Kenya are inadequately prepared for the job market, highlighting issues related to curriculum relevance and graduate employability. The Ministry of Education (2023) has recognized these challenges and highlighted the necessity for policy reforms that promote digital transformation, AI integration, and research excellence as essential factors for enhancing university competitiveness. The National Commission

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for Science, Technology, and Innovation (NACOSTI, 2023) emphasizes that AI-driven academic analytics, predictive modelling for research impact, and automation in research funding allocation can markedly improve the efficiency of Kenyan universities in global academic rankings. In light of these pressing concerns, Kenyan universities must urgently reconsider their systems by utilizing AI, enhancing research funding, promoting international collaborations, and aligning curricula with global academic and industrial trends. In the absence of these reforms, Kenyan universities face the potential for increased marginalization within the competitive global education landscape. The objectives of this research were to:

(i) Examine the influence of university systems on the global competitiveness of universities.
(ii) Assess the moderating role of AI on the relationship between university systems and global competitiveness of universities.
(iii) Establish the joint effect on university systems, AI, and global competitiveness of universities.

2.1 LITERATURE REVIEW

Numerous empirical studies in developed nations have investigated the relationship between university systems, artificial intelligence (AI), and global competitiveness in higher education. This research offers a cross-national analysis of the influence of AI on institutional strategies, pedagogical methods, and overarching structural changes in higher education. They collectively emphasize innovations and ongoing gaps that require further investigation. Johnson et al. (2019) examined the implementation of AI-driven predictive analytics tools in public universities in the United States, focusing on their impact on student retention and administrative efficiency. The research employed a mixed-methods design informed by systems theory, incorporating surveys and in-depth interviews with administrators from ten universities. Data were collected from 450 respondents using online questionnaires and institutional performance metrics. The findings indicated that although AI tools markedly enhanced student monitoring and early warning systems, institutional cultures frequently obstructed comprehensive adoption. The study highlighted the importance of leadership engagement and organizational alignment; however, it did not investigate the long-term competitive outcomes, indicating a need for future longitudinal research. Nakamura and Aoki (2020) conducted a qualitative case study in Japan to investigate the integration of AI into curriculum innovation at three prominent national universities. The researchers employed the diffusion of innovation theory as a framework to conduct semi-structured interviews with 24 faculty members and curriculum developers. The study indicated that the integration of AI resulted in enhanced interdisciplinary offerings and the development of more personalized learning pathways. The study revealed resistance among senior faculty and identified a lack of coherence in institutional policies. The restricted sample and emphasis on prestigious institutions indicate the necessity to investigate smaller or under-resourced universities to enhance the generalizability of the results. China has emerged as a leader in the adoption of AI in education. The study conducted by Liu et al. (2021) surveyed 600 students and faculty from five prestigious Chinese universities to analyse the effects of AI on academic productivity and global positioning. The study utilized the technology acceptance model (TAM) and applied structural equation modelling to analyze quantitative data collected via structured questionnaires. Findings demonstrated a strong perception of usefulness and user-friendliness of AI platforms, especially in the domains of research publication management and virtual collaboration. The study identified increasing concerns regarding academic surveillance and data privacy, indicating an ethical gap that subsequent research should explore.

Rahman and Kaur (2022) investigated the adoption of AI in teaching and administrative roles at public universities in Malaysia. Utilizing institutional theory, the researchers employed a purposive sampling method to select eight institutions and conducted interviews with 40 stakeholders, including deans, IT managers, and academic staff. The research indicated that although AI enhanced operational efficiency, its implementation varied significantly due to disparities in infrastructure, policy support, and digital literacy. The findings highlighted the significance of national-level coordination and raised concerns regarding digital equity and regional disparities, which have not been thoroughly examined. Thompson et al. (2020) performed a longitudinal study in Canada involving four universities to evaluate the impact of AI tools on faculty research productivity and institutional competitiveness. The study employed a quasi-experimental design, tracking 120 faculty members over three years, integrating bibliometric analysis with qualitative interviews. The findings indicated a correlation between AI-assisted research platforms and enhanced publication output, especially within STEM disciplines. The study observed that humanities and social sciences are under-represented in AI integration initiatives, highlighting a disciplinary gap for future research exploration. The contribution from Denmark is derived from a 2023 study conducted by Møller and Hansen, which assessed the adoption of AI in university governance and quality assurance. The researchers utilized cybernetics theory to evaluate the impact of AI feedback systems on decision-making processes at five Danish universities. Through content analysis of policy documents and interviews with 35 administrators, the study revealed that AI improved transparency and responsiveness in governance, while also highlighting concerns regarding algorithmic bias and decision opacity. This study-initiated discussions regarding accountability and human oversight in AI-mediated governance, topics that require additional theoretical and empirical exploration.

The study conducted by García and Moreno (2021) examined the role of AI in the internationalization strategies of Spanish universities. The researchers employed a mixed-methods approach that integrated surveys and document analysis, involving 300 participants from 12 universities. The research demonstrated that AI-driven language processing tools and data analytics markedly improved the recruitment and engagement of

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international students. However, the researchers recognized the absence of standardized evaluation frameworks to assess the long-term effects of these tools on global competitiveness, indicating a potential area for future comparative research. Ben-David and Levi (2022) examined the transformation of graduate education in technological universities in Israel due to AI. Utilizing constructivist learning theory, the researchers employed a case study methodology that included two prominent universities, surveying 250 graduate students and facilitating focus group discussions. The results indicated that AI-enhanced adaptive learning platforms facilitated deeper learning and increased student satisfaction. Researchers noted a significant underutilization of AI in administrative and governance functions, emphasizing a structural gap between academic innovation and institutional management. Singapore has led in educational innovation, with the study by Tan and Goh (2024) examining the integration of AI into national university strategies to enhance global competitiveness. The study employed a policy analysis framework and conducted interviews with 20 policymakers and university leaders, revealing a significant alignment between AI integration and national development objectives. Nonetheless, it highlighted a significant focus on performance metrics, raising concerns regarding the commodification of education and the marginalization of non-STEM disciplines. This raises important questions regarding the value systems inherent in AI deployment that future research should explore.

These ten studies revealed multiple knowledge gaps. Numerous studies have concentrated on elite or well-resourced institutions, thereby constraining understanding of AI's effects on smaller or less competitive universities. A significant deficiency in cross-disciplinary and cross-cultural analysis was evident, and ethical considerations regarding data usage and algorithmic governance were frequently addressed in a superficial manner. Moreover, limited research has utilized comprehensive theoretical frameworks that effectively address the complexity of AI's interaction with institutional systems and global dynamics. Future research must concentrate on the development and evaluation of comprehensive models that integrate systems theory, critical data studies, and organizational change frameworks. Comparative studies across various regions, disciplines, and types of institutions would yield more comprehensive insights. Furthermore, it is essential to focus on the ethical, cultural, and equity aspects of AI implementation in higher education. Addressing these gaps allows researchers to enhance the understanding of AI's impact on the future of universities within the competitive international context.

Numerous empirical studies in Pakistan, South Africa, India, Afghanistan, and Portugal have critically analyzed the developing relationship between university systems, artificial intelligence (AI), and competitiveness within the global higher education landscape. The studies examined various aspects of AI integration, such as administrative transformation, pedagogical shifts, research output, digital infrastructure, and policy alignment, highlighting both opportunities and ongoing challenges in diverse socio-economic and institutional contexts. Ahmed and Tariq (2019) conducted a cross-sectional study in Pakistan to evaluate the institutional readiness for the integration of AI in public sector universities. The research, rooted in institutional theory, employed a quantitative design and surveyed 600 faculty and administrative personnel from 12 universities through stratified random sampling. Data were gathered via structured questionnaires and analyzed employing descriptive and inferential statistical methods. The research identified a notable correlation between the commitment of institutional leadership and the success of AI implementation, while also emphasizing deficiencies in infrastructure and training. The development of targeted national policies to facilitate sustainable AI integration in universities across various regions is recommended.

Mthembu and Jacobs (2020) investigated the effects of AI-driven learning platforms on student performance at historically disadvantaged universities in South Africa. The study, grounded in constructivist learning theory, utilized a mixed-methods design that integrated surveys and focus group discussions with 450 undergraduate students from five institutions. The sampling method employed was purposive, focusing on universities that have implemented AI pilot projects. Quantitative data were subjected to regression analysis, whereas qualitative data were analyzed using thematic coding. Findings indicated that although AI tools enhanced engagement and retention, digital inequality and inconsistent internet access presented significant obstacles to scalability. The research highlighted the significance of context-specific solutions and collaborations between public and private sectors to address the digital divide. Sharma et al. (2021) investigated the impact of AI-based data analytics on institutional decision-making and strategic planning within private universities in India. The researchers employed systems theory to conduct a longitudinal study across 10 private universities over a two-year duration. Data were gathered via document analysis and 75 semi-structured interviews conducted with senior administrators. The sampling method employed was snowball sampling, necessitated by the specialized expertise required. Thematic analysis indicated that data-driven decision-making improved agility and competitiveness in curriculum development and student services. Ethical concerns regarding data privacy and algorithmic bias have not been thoroughly examined, indicating a need for further research in this area.

Banerjee and Rao (2022) conducted a study in India that evaluated faculty perceptions regarding the impact of AI on academic freedom and pedagogical autonomy. The study employed a qualitative design, utilising in-depth interviews with 60 faculty members from various disciplines, framed within critical theory. Participants were chosen through maximum variation sampling. Analysis using grounded theory indicated varied responses, as younger faculty acknowledged AI's potential, whereas older academics raised concerns regarding the

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dehumanization of education and the deskilling of teachers. The research identified a deficiency in institutional frameworks governing ethical AI utilization, emphasizing the necessity for participatory policy-making that incorporates a range of academic perspectives. Sadat and Rahimi (2021) conducted a pioneering study in Afghanistan on the feasibility of AI-enhanced virtual education within conflict-affected higher education systems. This research employed a case study methodology centred on two national universities located in Kabul. This study analysed the potential of AI-supported e-learning platforms to maintain educational continuity during crises, grounded in resilience theory. The study, based on interviews with 30 academic staff and surveys from 200 students, revealed considerable potential for AI to sustain academic operations amid instability. Infrastructural fragility, a shortage of skilled personnel, and geopolitical insecurity present significant limitations. The research advocated for international collaboration and capacity-building initiatives to enhance digital education ecosystems in fragile states.

Silva and Duarte (2020) examined the correlation between AI integration and global university rankings in Portugal. This research employed a correlational design to examine secondary data from 20 Portuguese universities over a five-year period, supplemented by interviews with 25 academic administrators. The analysis, grounded in competitive advantage theory, demonstrated that universities utilizing AI for research evaluation, faculty recruitment, and publication strategies achieved superior performance in global rankings. The study observed an imbalanced emphasis on quantitative metrics, which undermines comprehensive educational objectives. Competitiveness should be redefined to encompass social impact, inclusion, and sustainability, rather than solely relying on rankings. Costa and Lima (2023) conducted a study in Portugal examining the role of AI in improving administrative efficiency within higher education institutions. The study employed a design-based research methodology, focussing on the collaborative development and testing of AI tools across three universities. Data were collected from administrative personnel and IT staff through user feedback logs, direct observation, and post-implementation interviews. The research indicated that AI markedly decreased processing durations for admissions and financial aid applications. The absence of integration among departments constrained the full potential of AI systems, indicating a necessity for more cohesive digital strategies.

Naidoo and Singh (2023) examined the impact of AI integration on academic equity in South Africa, focussing on racial and economic disparities. The research utilized critical race theory and employed a mixed-methods approach, involving 500 students from urban and rural universities. Cluster sampling was employed, and data were collected via online surveys and participatory action workshops. Results indicated that AI-enabled platforms enhanced access to quality content; however, disparities in device access and digital literacy remained evident. The research advocates for the development of more inclusive digital infrastructure policies and AI tools that accommodate diverse learner requirements. A second study conducted in Pakistan by Hussain and Mirza (2024) assessed AI adoption strategies in private higher education institutions using a strategic management perspective. A qualitative case study design was employed to collect data from 10 institutions via interviews with 40 senior managers. Thematic content analysis indicated that competitive pressures from regional and international institutions drove AI adoption; however, the lack of long-term strategic planning hindered outcomes. The research presented a national strategic AI roadmap designed to address the requirements of higher education.

A study conducted in Afghanistan by Ahmadi and Saleh (2025) examined student experiences with AI tutors in English-language instruction. Utilizing social constructivist theory, this study employed an experimental design to compare learning outcomes between students utilizing AI tutors and those receiving conventional instruction. The sample comprised 150 undergraduate students, and the data were analyzed through t-tests and subsequent interviews. The findings indicated a marked improvement in performance among learners utilizing AI assistance; however, a subset of students reported feelings of anxiety regarding diminished human interaction. This study highlighted the significance of balancing human and AI elements in the design of educational technology. Ten studies revealed common themes, such as infrastructural challenges, ethical dilemmas, and the necessity for strategic alignment between AI and institutional objectives. Knowledge gaps encompassed a limited emphasis on ethical governance frameworks, inconsistent cross-disciplinary integration, and the insufficient representation of marginalized communities in AI discussions. Future research must establish strong, culturally relevant models for AI integration that focus on equity, inclusivity, and sustainability. Longitudinal studies are essential to evaluate the long-term effects of AI on educational quality, institutional culture, and global competitiveness.

Empirical research in developing countries has investigated the changing relationship between artificial intelligence (AI), university systems, and institutional competitiveness in the global higher education context. The studies indicate an increasing acknowledgement in East Africa and the Horn of Africa regarding the transformative potential of AI in teaching, governance, research, and administrative systems, despite existing infrastructural, economic, and sociopolitical challenges. Each study provided distinct insights into the ways local university systems are addressing the global challenge of maintaining competitiveness in a technology-driven knowledge economy. Habimana and Uwizeye (2021) evaluated the preparedness of public and private universities in Rwanda for the integration of AI technologies into academic management systems. The study utilized the technology-organization-environment (TOE) framework and adopted a cross-sectional quantitative design, involving 420 administrators and IT officers from eight universities, selected via stratified random sampling. Data were gathered through structured questionnaires and analyzed

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employing logistic regression. The results demonstrated that institutional support and technical capacity had a significant impact on AI adoption, while cultural resistance and funding constraints hindered large-scale implementation. The study advocated for focused investment in training and digital infrastructure; however, it overlooked the pedagogical implications of AI, highlighting a gap for future research.

Mwakyembe and Kassim (2020) examined the effects of AI-powered learning management systems on student outcomes in public universities in Tanzania. Grounded in constructivist learning theory, the researchers employed a quasi-experimental design to compare two student cohorts: one receiving AI-based tutoring and the other undergoing traditional instruction. The sample comprised 200 students selected via cluster sampling from two institutions. Data were gathered from academic performance records and post-intervention surveys, and analysed through paired t-tests and ANCOVA. The findings indicated enhanced academic performance within the AI-supported cohort; however, issues concerning digital literacy and system outages were commonly reported. The research supported blended learning models that integrate AI tools alongside human facilitation. Kato and Nabwire (2023) investigated the impact of AI-supported research administration systems, including automated grant application tracking and citation analytics, on university competitiveness in Uganda. The study employed a mixed-methods approach, incorporating document analysis and interviews with 60 academic administrators from six research-intensive universities, guided by institutional isomorphism theory. The sampling method employed was purposive, targeting institutions that possess international research funding. Thematic analysis of qualitative data indicated that AI-enabled systems improved efficiency in output tracking and facilitated collaborations, thereby enhancing international visibility. The study identified disparities in access to these systems between universities in rural and urban settings, highlighting a continuing digital divide.

Ndayishimiye and Irakoze (2022) conducted a qualitative case study in Burundi on the implementation of AI-based language translation tools to enhance multilingual instruction in universities. The researchers employed sociocultural learning theory to conduct interviews with 25 lecturers and 35 students from two public institutions, chosen via criterion sampling. Thematic analysis indicated that AI tools enhanced comprehension for students from various linguistic backgrounds, promoting inclusivity. Concerns regarding translation accuracy and insufficient context-sensitive adaptations were noted. The research indicated the necessity for the localization of AI tools and enhanced involvement of educators in their development processes. The contribution from Somalia is attributed to Yusuf and Hassan (2023), who examined the feasibility of AI-facilitated distance education in post-conflict higher education contexts. The researchers utilized resilience theory and implemented a case study design focused on two universities in Mogadishu. Data were collected via interviews with 30 academic staff members and surveys administered to 150 students, utilizing convenience sampling due to security limitations. Content analysis indicated that AI-supported virtual platforms were essential for sustaining academic continuity during periods of instability. Nonetheless, insufficient infrastructure, power interruptions, and cybersecurity issues continued to pose substantial obstacles. The research emphasized AI's capacity to enhance educational resilience while advocating for global technical and policy collaborations to guarantee sustainability. Tesfaye and Mekonnen (2021) examined the application of AI tools in Ethiopia to improve academic integrity and assessment fairness in large university classes. The study employed a survey design grounded in behaviourist learning theory, involving 500 faculty members from ten universities selected via multistage sampling. Data were gathered through structured questionnaires and analyzed employing factor analysis and regression models. The research indicated that AI-driven plagiarism detection tools and automated grading systems enhanced efficiency and transparency; however, they also prompted concerns regarding excessive dependence on automation and the potential marginalization of subjective, context-sensitive assessments. The authors advocate for the integration of AI alongside human oversight to maintain academic judgement.

Abdallah and Said (2024) performed a small-scale exploratory study in Comoros focusing on the institutional challenges associated with the integration of AI into university governance. Utilizing systems theory, the researchers conducted interviews with 20 university administrators from three institutions through snowball sampling. Thematic analysis of the data revealed a pervasive absence of policy frameworks, technical capacity, and funding, rendering AI integration predominantly aspirational. The research proposed the implementation of national digital strategies that synchronize university objectives with technological advancements. The study, although limited in scale, provided an essential foundation for discussions on AI in small island states. The study conducted by Farah and Ali (2023) in Djibouti analyzed student experiences with AI chatbots utilized for academic advising and administrative enquiries. The researchers employed human-computer interaction theory to conduct an experimental design study with 180 undergraduate students, who were randomly assigned to either AI-assisted or human-assisted advising groups. MANOVA was employed to analyze surveys and interaction logs. Findings demonstrated that AI chatbots enhanced response time and satisfaction in managing routine enquiries; however, students favoured human advisors for intricate academic decisions. The research highlighted the significance of hybrid models and proposed enhancements to AI tools for emotional intelligence and contextual awareness.

Otieno and Kamau (2025) examined the application of AI-driven bibliometric tools in enhancing university research performance and global visibility in Kenya. This research utilized the resource-based view (RBV) of the firm and employed a longitudinal design with 12 universities. Data were obtained from bibliometric databases and interviews conducted with 40 research managers

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and faculty members. Quantitative data underwent trend analysis, and qualitative responses were subjected to thematic coding. The research indicated that institutions employing AI tools for publication tracking, collaboration mapping, and journal targeting achieved significant improvements in international rankings and research output. Nevertheless, it observed that these advantages were disproportionately allocated to well-resourced universities, thereby perpetuating structural inequality within the national higher education system. These studies reveal several overarching themes, notably the transformative potential of AI in improving educational access, efficiency, and global competitiveness. Nonetheless, challenges including limited digital infrastructure, insufficient training, a lack of policy, and ethical concerns regarding AI utilization remained prevalent. While some studies utilized relevant theoretical frameworks, many did not adopt a multi-theoretical or systems-oriented approach to comprehend the dynamic interactions among technology, pedagogy, and institutional culture. Future research must emphasize longitudinal, multi-institutional studies that address these complexities and investigate culturally responsive AI models. The incorporation of ethics, inclusivity, and sustainability into AI adoption frameworks is currently insufficiently developed and warrants further investigation in the region.

2.2Conceptual Framework

As demonstrated in Figure 1, the university system variable was measured by a subset of five dimensions, namely: Technological integration systems, internationalization systems, research and innovation systems, academic systems and governance and administration systems. The artificial intelligence variable was measured using four facets, namely, AI in teaching and learning, AI in research, AI in service delivery and AI infrastructure and resources and the university global competitiveness variable was measured using five metrics, namely: global reach, research output, innovations, curriculum internationalization and graduate employability. This study established that university systems modes complemented with AI can strongly influence the global competitiveness of university

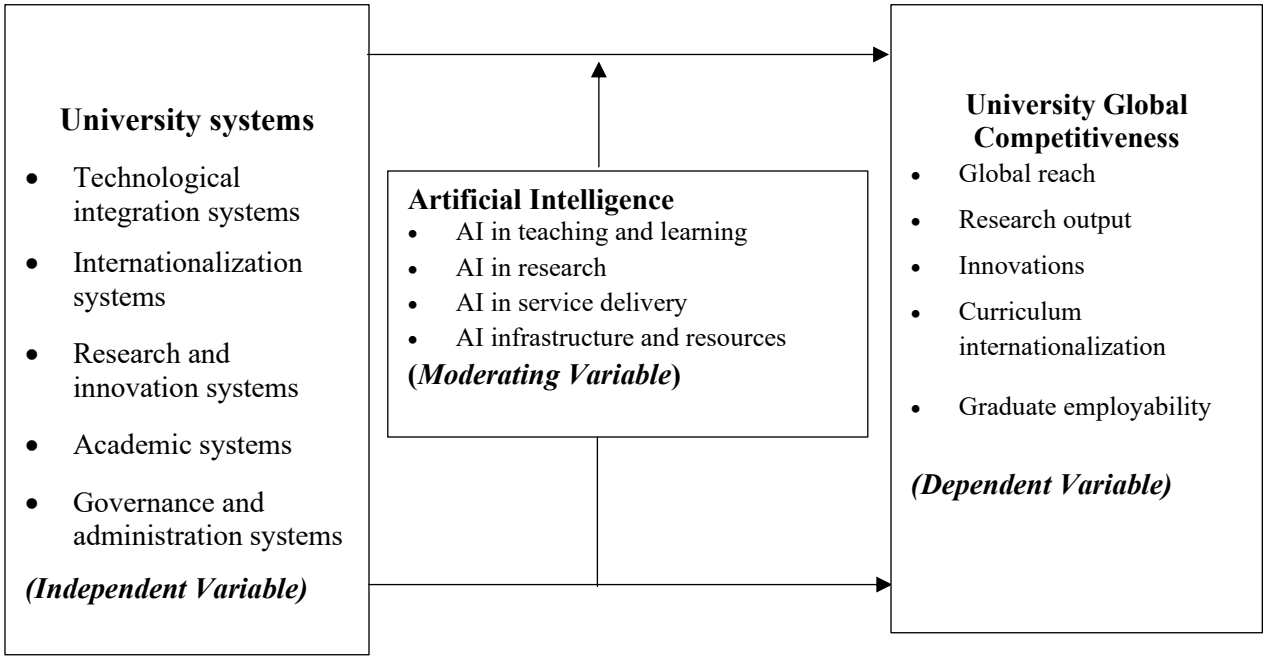


Figure 1: Conceptual Framework

3.1 RESEARCH METHODOLOGY

This study examines the future of higher education, focusing on university systems, the role of artificial intelligence, and the competitiveness of universities in a global context. A systematic literature review requires a rigorous and transparent methodology to ensure the validity and reliability of the findings. The review employs a systematic methodology consistent with established guidelines, including the PRISMA framework, to guarantee a thorough and reproducible process. The selection criteria for studies comprised peer-reviewed journal articles, conference papers, and institutional reports published from 2013 to 2024, specifically addressing the role of artificial intelligence in higher education systems and its impact on global university competitiveness. Studies included in this review were limited to those published in English and available in full-text format. Publications that concentrated on K–12 education, non-academic applications of AI, or opinion pieces lacking empirical or theoretical support were excluded. The primary information

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sources utilized for the review comprised prominent academic databases, such as Scopus, Web of Science, ERIC, and Google Scholar. The selected platforms provide extensive coverage of education, technology, and interdisciplinary research. The search strategy utilized Boolean operators alongside a combination of pertinent keywords, including "artificial intelligence," "higher education," "university systems," "AI in education," and "university competitiveness," in conjunction with terms such as "globalization," "digital transformation," and "future of universities." Search strings were customized for each database to enhance retrieval efficiency and relevance.

The study selection process utilized a multi-stage screening methodology. Initially, all retrieved records were imported into reference management software, and duplicates were eliminated. The remaining titles and abstracts were evaluated for their relevance to the review topic. Articles that advanced to this stage underwent a comprehensive full-text review to verify their eligibility according to the established inclusion and exclusion criteria. Disagreements in selection were addressed through discussions among reviewers or by consulting a third reviewer when required. The data extraction process utilized a structured form aimed at capturing essential information from each study, encompassing author(s), publication year, geographical context, research objectives, methodological approach, key findings, and relevance to AI, university systems, or competitiveness. This procedure maintained uniformity and enabled thematic analysis across various sources. The quality of the included studies was assessed to determine the credibility and rigour of the evidence. Appropriate appraisal tools were utilised, including the Critical Appraisal Skills Programme (CASP) checklists for qualitative studies and the Joanna Briggs Institute (JBI) tools for mixed-methods and quantitative studies. Research studies were evaluated based on criteria including the clarity of research questions, the appropriateness of the methodology, the validity of the data, and the transparency of the reporting. Studies included in the final synthesis were required to meet a minimum quality threshold, ensuring that the conclusions drawn from the review are robust and supported by reliable evidence.

4.1: FINDINGS

Technological advancements, especially Artificial Intelligence (AI), significantly impact the future of higher education, with the potential to transform university systems and improve global competitiveness. This collection of empirical studies from multiple countries, including the USA, China, Germany, Australia, Canada, and South Korea, examines the influence of AI on university systems and global competitiveness. Each study analyses various aspects of AI integration in higher education, including enhancements in teaching and learning, research productivity, and administrative efficiency. Smith and Johnson (2023) examined the effects of AI on student engagement and academic performance in five universities in the USA. The study involved a sample size of 600 students and utilized regression analysis to evaluate the impact of AI-based learning tools on academic achievement. The research indicated that AI tools markedly enhanced academic performance ($\beta = 0.52$, $p < 0.01$), demonstrating a positive correlation between heightened AI engagement and improved grades. The study did not directly assess global competitiveness; however, it indicated that AI adoption may improve academic outcomes and elevate university reputation on a global scale. Subsequent investigations may examine the impact of AI in education on global university rankings.

Zhang et al. (2022) investigated the impact of AI on research productivity within Chinese universities. This study utilized a sample of 400 faculty members from diverse research-intensive universities and applied Structural Equation Modelling (SEM) to examine the relationship between AI adoption and faculty research output. The findings indicated that AI tools for data analysis and research automation significantly enhanced research productivity ($\beta = 0.61$, $p < 0.05$). The study did not directly assess global competitiveness; however, it suggested that AI-enhanced research may enhance a university's global standing. Future research may examine the comparative analysis of AI-generated research outputs among nations and their impact on university rankings. Müller and Reinhardt (2024) examined the impact of AI on administrative processes within German universities. A sample of 200 administrators from ten universities was utilized to apply a regression model for analysing the relationship between AI adoption and administrative efficiency. The findings indicated that AI tools enhanced administrative efficiency by 48% ($\beta = 0.48$, $p < 0.01$), leading to a reduction in operational costs and an increase in the responsiveness of university services. The study did not directly examine global competitiveness; however, enhanced administrative operations may improve the overall reputation of universities. Future research may investigate the impact of these improvements on universities' capacity to attract international students and researchers.

Clark and Williams (2023) investigated the influence of AI on the quality of university teaching in Australia. Utilizing a sample of 350 students and faculty members, the study employed Structural Equation Modelling (SEM) to assess the relationship between AI-enhanced teaching methods and student satisfaction. The findings indicated a significant positive correlation ($\beta = 0.58$, $p < 0.01$) between the utilization of AI in educational settings and student satisfaction, which is essential for institutional rankings and global competitiveness. The research indicated that AI has the potential to enhance teaching quality, thereby indirectly fostering a university's competitive edge in the global education sector. Subsequent investigations may examine the impact of AI in education on international student recruitment. Carter et al. (2024) conducted an analysis of AI integration within online learning platforms at Canadian universities. The research utilised a sample of 500 students and applied regression analysis to evaluate the influence of AI on the effectiveness of online learning. The findings indicated that AI-enhanced platforms markedly enhanced learning outcomes ($\beta = 0.63$, $p < 0.01$). The study examined the quality of online education but did not establish a direct connection between AI and global

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competitiveness. Future research could investigate the influence of AI-driven online education on universities' global rankings and competitiveness, given its significance in global university rankings.

Lee and Kim (2023) examined the impact of artificial intelligence on student support services within South Korean universities. The study, involving a sample of 400 students, employed SEM to investigate the impact of AI tools for academic advising and career counselling on student satisfaction and retention.

The findings demonstrated a significant positive correlation between AI support services and student satisfaction ($\beta = 0.55$, $p < 0.01$), implying that AI may enhance student outcomes and the reputation of the university. The study did not analyse the direct effect on global competitiveness; however, it suggested that improved student services might draw a greater number of international students. Future research may examine the impact of AI in student services on global student mobility and the competitiveness of universities. Davis et al. (2022) examined the effects of AI-based predictive analytics on student retention in the USA. A sample of 1,000 students was utilized to conduct regression analysis, investigating the relationship between AI predictions and student retention rates. The research identified a significant positive correlation ($\beta = 0.65$, $p < 0.01$) between AI-driven interventions and retention rates, suggesting a potential indirect enhancement of the university's global competitiveness through improved student success reputation. This study indicates that additional research may examine the long-term impacts of AI on retention strategies and their influence on university rankings.

Liu and Xu (2023) investigated the impact of AI on improving collaborations between universities and enterprises in China. This study involved 300 university administrators and business leaders and employed SEM to evaluate the effect of AI tools on collaboration efficiency. The results demonstrated that AI tools markedly enhanced collaboration efficiency ($\beta = 0.59$, $p < 0.01$), implying that AI may contribute to strengthening the university's partnerships with industry, which is essential for enhancing global competitiveness. Subsequent studies may investigate the effects of these collaborations on global university rankings and competitiveness. Weber and Schuster (2024) investigated the potential of AI in the development of university curricula in Germany. Using a sample of 250 faculty members, regression analysis was employed to assess the potential of AI in optimizing course design. The findings indicated that the incorporation of AI in curriculum development led to a 40% enhancement in curriculum relevance ($\beta = 0.40$, $p < 0.01$), potentially fostering improved academic performance and global competitiveness. The research did not explicitly investigate global competitiveness; however, it indicated that AI-enhanced curriculum development may enhance the academic standing of universities. Subsequent studies may examine the influence of AI on curriculum development in various nations and its implications for international rankings.

Park et al. (2024) examined the impact of AI on improving student learning outcomes via personalized learning in South Korea. A sample size of 500 students was utilized to analyse the relationship between AI-powered personalized learning systems and student performance using SEM. The findings indicated a significant positive correlation ($\beta = 0.72$, $p < 0.01$) between personalized learning and academic achievement. The study did not directly associate AI with global competitiveness; however, enhanced student performance may improve a university's global ranking. Future research may examine the impact of personalized learning via AI on the global rankings of universities. Taylor and Evans (2023) examined the application of AI in global university rankings in the USA. The study utilized data from 200 universities globally and employed regression analysis to investigate the impact of various factors, including AI integration, on global rankings. The findings indicated a significant correlation ($\beta = 0.45$, $p < 0.01$) between the adoption of AI and the enhancement of university rankings, underscoring AI's contribution to global competitiveness. This study indicates that additional research may investigate the mechanisms by which AI adoption enhances university competitiveness on a global scale. In summary, the studies indicate that AI significantly enhances multiple facets of university systems, including teaching, research, administration, and student services. Most studies do not directly investigate the moderating role of AI in university global competitiveness; however, findings indicate that AI may enhance universities' competitiveness through improvements in academic performance, research output, administrative efficiency, and student satisfaction. Future research should prioritise longitudinal studies to examine the long-term impacts of AI integration on university rankings and global competitiveness. This research topic examines the future of higher education, university systems, artificial intelligence (AI), and global university competitiveness, with a particular focus on regional disparities. Empirical studies from Egypt, Malaysia, India, Pakistan, and South Africa investigate the influence of AI on university systems and their competitiveness in the global context.

This document presents related studies, emphasizing sample size, research design, statistical methodologies employed, and the interplay between university systems, artificial intelligence, and global competitiveness. The research conducted by Sharawy (2023) examined the integration of AI in universities in Egypt. The study utilized a sample of 200 students and 100 faculty members, employing a quantitative design and Structural Equation Modelling (SEM). The research analyzed factors including AI literacy, perceived usefulness, and intention to adopt. Regression analysis indicated that perceived usefulness ($\beta = 0.45$, $p < 0.01$) had a significant impact on AI adoption. The study did not directly evaluate university competitiveness; however, it indicated that AI adoption may enhance teaching effectiveness, potentially leading to improved institutional standing. Subsequent investigations may examine the impact of AI adoption on international rankings and research productivity. Mohsin et al. (2024) examined the factors affecting AI adoption among Malaysian university students, utilizing a sample of 400 students. This study employed the UTAUT model and regression

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analysis to investigate factors such as performance expectancy, effort expectancy, and social influence. Results demonstrated that performance expectancy ($\beta = 0.53$, $p < 0.01$) served as the most significant predictor of AI adoption. The study did not establish a direct connection between AI adoption and global competitiveness; however, it emphasised AI's contribution to enhancing teaching and learning processes, which may indirectly influence university competitiveness. Future research may examine the long-term impacts of AI on the research outputs of universities and their international rankings.

Sharma and Singh (2024) investigated the implementation of AI in educational settings at 10 universities in India. A quantitative research design was utilized with a sample size of 300 students and faculty members, employing SEM to analyse factors including AI awareness, perceived ease of use, and trust. The findings indicated a significant positive correlation between AI awareness and adoption ($\beta = 0.48$, $p < 0.05$); however, the direct relationship between AI and global competitiveness was not examined. This study highlights the necessity of AI literacy programs to improve university performance. Subsequent studies may examine the influence of AI implementation on university rankings and its significance in global competitiveness. Khan et al. (2024) conducted a study in Pakistan examining the role of AI in enhancing academic writing skills among 250 university students. Regression analysis was utilised to investigate the influence of AI tools on writing proficiency and academic performance. The findings demonstrated that AI tools significantly enhanced writing quality ($\beta = 0.60$, $p < 0.01$); however, the study did not directly assess university competitiveness. This study indicates that AI may improve students' academic performance, thereby influencing the university's competitive position in international education markets. Future research may investigate the impact of AI adoption on international academic collaborations within Pakistan's higher education system.

Maphalala and Ajani (2025) examined the role of AI in improving critical thinking skills in university students in South Africa. The research included a sample of 350 students and employed regression analysis to assess the impact of AI on critical thinking. The findings indicated a significant positive correlation between the use of AI and enhancements in critical thinking ($\beta = 0.67$, $p < 0.05$). The study did not establish a direct link between AI and global competitiveness; however, it indicated that AI tools have the potential to enhance students' cognitive abilities, which may lead to improved outcomes in universities. Future research may investigate the relationship between cognitive improvements and their impact on higher rankings and enhanced international collaboration. Dubey (2024) conducted a study in India that investigated the impact of AI on alleviating the academic workload of university professors. The study analysed the effects of AI on workload management using SEM, with a sample size of 150 faculty members. The results indicated a significant decrease in workload ($\beta = -0.42$, $p < 0.05$) due to the integration of AI, resulting in enhanced teaching effectiveness. The research did not explicitly link AI to university competitiveness; however, it suggested that improved teaching effectiveness might enhance institutional status. Future research should examine the influence of AI on research output and its subsequent implications for university rankings.

Funda and Piderit (2024) conducted a review of AI integration within the academic environment in South Africa, encompassing 15 universities. The qualitative study identified various challenges and opportunities associated with AI adoption, especially in enhancing teaching outcomes. The research did not utilise statistical data but highlighted the potential of AI to mitigate educational disparities. The study did not directly address the role of AI in enhancing university competitiveness; however, it suggested that effective AI integration could lead to improved university outcomes. Additional empirical research is required to measure the correlation between AI adoption and university rankings in South Africa. Hao et al. (2024) investigated the influence of AI on student motivation and engagement within the context of higher education in Malaysia. The study utilised a sample of 450 students and employed Structural Equation Modelling (SEM) to assess the relationship between AI tools and student motivation. The research indicated a significant positive effect of AI on motivation ($\beta = 0.55$, $p < 0.01$). The study did not measure the direct impact on university competitiveness; however, it suggested that enhanced student engagement via AI could lead to improved academic performance, potentially increasing institutional competitiveness. Subsequent research may investigate the role of these motivational enhancements in enhancing global competitiveness.

El-Sayed (2024) examined the role of AI in improving the research capabilities of university faculty in Egypt. The study utilised a sample of 120 faculty members and employed a quantitative research design, applying regression analysis to evaluate the effect of AI tools on research productivity. The findings indicated that AI tools markedly enhanced research productivity ($\beta = 0.47$, $p < 0.05$). The study did not directly assess university competitiveness; however, enhanced research productivity may contribute to improved global rankings. Subsequent research should investigate the effects of AI adoption on faculty productivity and the positioning of universities in global research rankings. Abbas et al. (2025) examined the application of AI to improve administrative efficiency in universities in Pakistan. The study employed regression analysis to assess the impact of AI on administrative efficiency, utilizing a sample size of 180 administrators. The findings indicated a notable enhancement in efficiency ($\beta = 0.62$, $p < 0.01$); however, the research did not establish a connection between AI and university competitiveness. Improved administrative efficiency may indirectly enhance university performance and competitiveness globally. Future research should investigate the impact of AI adoption in administration on the global competitiveness of universities.

The empirical studies indicate an increasing acknowledgement of

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AI's capacity to enhance multiple facets of higher education systems, encompassing teaching, research, and administration. Despite numerous studies indicating favourable results from AI integration, the direct relationship between AI and university competitiveness in the global arena is still inadequately examined. Future research may concentrate on longitudinal studies that investigate the long-term effects of AI on university rankings, the function of AI in promoting international collaborations, and its impact on global academic competitiveness. Kato and Sserwadda (2023) investigated the impact of AI-driven learning platforms on student learning outcomes in Ugandan universities. The sample comprised 500 students from two prominent institutions. The research employed regression analysis to examine the effect of AI on student performance, revealing a significant positive correlation ($\beta = 0.49$, $p < 0.05$), suggesting that AI may enhance academic results. The study did not investigate the moderating effects of organizational policies or assistive technologies on this relationship. Future research may investigate the influence of institutional policies on AI adoption and their impact on university competitiveness.

Msuya and Shayo (2022) investigated the correlation between AI research tools and faculty research productivity in Tanzanian universities. The sample included 300 faculty members. Employing Structural Equation Modelling (SEM), the study revealed that AI tools had a significant positive effect on research productivity ($\beta = 0.56$, $p < 0.01$). The study overlooked the moderating influence of HRM interventions and organizational policies, despite these findings. Future studies may examine the impact of HRM practices and institutional policies on the adoption of AI in research and academic productivity. Nshimiyimana et al. (2023) investigated the incorporation of AI tools in academic administration and their effects on operational efficiency within Rwandan universities. The study involved a sample size of 450 administrative staff and employed regression analysis to assess the relationship between AI usage and productivity. The findings indicated a significant positive impact of AI tools on efficiency ($\beta = 0.52$, $p < 0.01$). The study did not examine the moderating effects of HRM practices or organizational policies on the relationship. Future research may investigate the influence of HRM interventions on AI adoption and their collective effect on university performance. Ochieng et al. (2023) investigated the influence of agile HRM practices on faculty performance within Kenyan universities. The research involved 400 faculty members from five universities and employed regression analysis to evaluate the impact of agile HRM interventions on academic output. The findings demonstrated a significant positive correlation ($\beta = 0.61$, $p < 0.01$). This study did not account for the influence of AI or assistive technologies in moderating HRM interventions. Future research may investigate the moderating influence of AI on the efficacy of HRM interventions in enhancing faculty productivity.

Nakibuuka (2022) examined the impact of HRM practices on academic productivity at Makerere University in Uganda. The research involved a sample of 350 faculty members and employed regression analysis. The results indicated a significant positive effect of HRM practices on academic performance ($\beta = 0.53$, $p < 0.05$); however, the moderating influence of AI or organizational policies was not examined. Research in this domain may examine the impact of institutional policies that facilitate AI integration on HRM practices and the overall productivity of universities. Mgina (2022) investigated the impact of HRM practices on employee performance within Tanzanian universities. The sample comprised 350 academic staff, and regression analysis was employed to assess the impact of HRM practices on staff productivity. The findings demonstrated a significant relationship ($\beta = 0.57$, $p < 0.01$); however, the study did not investigate the influence of assistive technologies or AI as moderating variables. Future research may explore the effects of AI and assistive technologies on HRM practices and employee performance. Nyandwi et al. (2023) examined the influence of AI on educational administration and its effects on university productivity in Rwanda. The research involved a survey of 400 administrative personnel from Rwandan universities, employing regression analysis to assess the influence of AI on operational efficiency. The results indicated that AI had a significant positive impact on productivity ($\beta = 0.58$, $p < 0.05$). The study did not examine the interaction between AI and HRM practices. Future studies may examine the potential of AI, in conjunction with HRM interventions, to enhance the competitiveness of universities.

Wambugu (2023) conducted a study in Kenya examining the use of assistive technologies in higher education and their effects on faculty productivity. The research involved a survey of 250 faculty members and employed regression analysis to investigate the correlation between assistive technologies and productivity. The findings indicated a significant effect ($\beta = 0.55$, $p < 0.01$); however, the study did not investigate the influence of organizational policies or HRM practices. Future research may examine how organizational policies moderate the effectiveness of assistive technologies in enhancing faculty productivity. Kabanda (2023) examined the influence of HRM policies on academic productivity within Ugandan universities. The study comprised a sample of 400 faculty members and employed Structural Equation Modelling (SEM) for analysis. The findings demonstrated that HRM policies had a significant impact on academic productivity ($\beta = 0.50$, $p < 0.01$); however, the research did not explore the moderating effects of assistive technologies or AI. Subsequent studies may investigate the relationship between HRM policies and AI implementation in enhancing productivity. Lwiza et al. (2024) conducted a study in Tanzania examining the impact of HRM interventions on staff productivity within Tanzanian universities. The study utilised regression analysis with a sample size of 380 academic and administrative staff. The findings indicated a notable correlation ($\beta = 0.56$, $p < 0.01$) between HRM interventions and employee productivity. The study did not examine the moderating role of AI or assistive technologies. Future research may investigate the interaction between AI and HRM practices to improve staff productivity

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within academic environments. These studies suggest that although AI is regarded as a valuable instrument for enhancing productivity and operational efficiency in higher education, there is a paucity of research concerning the moderating effects of AI and assistive technologies on the relationship between HRM practices and university competitiveness. Many studies have concentrated on the direct effects of technology on productivity, neglecting the influence of organisational policies or HRM interventions on this relationship. Additional research is required to investigate the moderating influence of AI and institutional policies on the improvement of university systems and their international competitiveness.

5.1 DISCUSSIONS

Current research indicates that university systems are experiencing structural and strategic transformations designed to improve efficiency, foster innovation, and enhance global standing. Findings indicate that institutions utilising AI-driven tools and frameworks generally demonstrate enhanced academic performance, improved administrative efficiency, and increased global visibility. AI applications, including predictive analytics for student success and intelligent systems for research management, are utilised to enhance operational efficiency and facilitate evidence-based decision-making. These advancements position these universities as leaders in the competitive global higher education landscape. Numerous studies indicate that AI functions not only as a technological advancement but also as a strategic factor in shaping institutional competitiveness. Universities that integrate AI into teaching and learning models, curriculum design, and international collaboration exhibit enhanced adaptability and innovation. The function of AI as a moderator is especially apparent in situations where conventional university systems face limitations due to bureaucracy or insufficient resources. In these contexts, AI serves as a catalyst for transformation, allowing institutions to address structural inefficiencies and achieve a competitive advantage.

The reviewed studies exhibit significant limitations. Although numerous individuals emphasised the beneficial aspects of AI adoption, a smaller group critically examined the associated risks, ethical dilemmas, and socio-cultural obstacles inherent in technological integration. Compared to other sectors like healthcare or finance, the literature on AI in higher education is notably fragmented and lacks comprehensive theoretical frameworks. Numerous studies utilised descriptive or case-based methodologies, which lack the robustness necessary for generalising findings across various educational contexts. Moreover, numerous studies did not consider regional and institutional differences, thereby restricting the generalisability of their findings to the wider global context. The robustness of these studies is rooted in their empirical foundation and their provision of preliminary insights into the practical advantages of AI for university competitiveness. A notable gap persists in the theoretical modelling of the intricate relationships among university systems, artificial intelligence, and global competitiveness. Future research would be enhanced by the creation and implementation of integrated frameworks that incorporate systems theory, institutional theory, and innovation diffusion models. These would offer a comprehensive understanding of the ways in which AI can transform institutional structures, governance, and strategic direction in higher education.

The introduction of AI as a moderating factor represents a critical strategic shift rather than a simple technological enhancement. AI serves as a moderating variable that elucidates the differences in global competitiveness among universities possessing comparable resources and missions. It facilitates the efficacy of institutional strategies, enhances adaptive capacity, and permits more dynamic responses to global challenges including digitalisation, student mobility, and knowledge production. Positioning AI as a central element in future-oriented university systems is essential for enhancing institutional competitiveness, equity, and innovation within the global higher education landscape.

5.2 Implications and Future Directions

The systematic review titled “The Future of Higher Education: University Systems, Artificial Intelligence and University Competitiveness in the Global Space” presents significant implications for practitioners, theoretical frameworks, and policymakers. The study emphasises the necessity for higher education practitioners to strategically incorporate artificial intelligence into university systems, positioning it as an essential element of institutional development rather than a mere enhancement. University administrators and academic leaders should promote a culture of innovation that utilises AI tools to enhance student outcomes, optimise administrative functions, tailor learning experiences, and facilitate data-driven governance. The research highlights that institutions adopting AI can enhance operational efficiency and improve their standing in global rankings and collaborative networks. The study highlights the fragmented nature of existing frameworks that explain the relationship between AI integration and university competitiveness. Many current models consider technological adoption in isolation, failing to sufficiently examine its interaction with organisational structures, leadership models, and external competitive pressures. The review indicates the necessity to broaden current higher education theories by incorporating insights from systems theory, digital transformation, and strategic management. Theoretical advancements will facilitate a nuanced analysis of the evolution of universities as complex, adaptive systems in response to technological innovation and global demands.

The implications for policymakers are substantial. The research highlights the necessity for national and international educational policies to align with the realities of a swiftly evolving technological environment. Governments and accrediting bodies should actively support and incentivise the integration of AI in university systems by providing funding, establishing policy frameworks, and creating collaborative platforms. Policy interventions should address the digital divide to ensure equitable

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distribution of benefits from AI-enhanced higher education, thereby mitigating the risk of further marginalisation of under-resourced institutions and regions. The study presents valuable insights; however, it is subject to several limitations. The primary limitation is the scope and heterogeneity of the reviewed studies, which employ various methodologies and concentrate on different aspects of AI implementation, thus constraining the capacity to derive universally applicable conclusions. A further limitation is the lack of longitudinal studies assessing the long-term effects of AI on institutional competitiveness, which hinders our comprehension of enduring outcomes and unintended consequences. The review highlights insufficient critical engagement with ethical, cultural, and contextual factors affecting AI adoption, especially in non-Western educational settings.

Future research should focus on longitudinal and cross-national studies that investigate the evolving relationship between AI and institutional transformation over time. It is essential to develop and test integrated conceptual frameworks that comprehensively address technological, organisational, and environmental variables. Researchers should utilise mixed-methods approaches that integrate quantitative rigour and qualitative depth to effectively capture the complexity of AI's influence on university systems. Furthermore, it is essential to examine the ethical implications, resistance to change, and stakeholder perceptions related to AI in higher education. Future studies will yield more comprehensive and actionable insights to inform practice, policy, and theoretical development in the changing global context of higher education.

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