

Human Capital and Graduate Employability in Public Universities in South- Western Uganda

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Abstract: This study investigates the relationship between human capital and graduate employability in public universities in South-Western Uganda. It aims to provide empirical evidence on how university human capital influences graduates' labor-market readiness. Guided by a positivist paradigm, a cross-sectional design was employed. Data were collected from 377 graduates and 122 academic and administrative staff across three public universities. Structural Equation Modelling (SEM) was used to test the hypothesized relationship between human capital and graduate employability. Results indicate a significant positive relationship between human capital and graduate employability. Universities with skilled, motivated, and professionally competent staff enhance graduates' employability by developing relevant skills and supporting processes that ensure these skills are effectively acquired. Deficiencies in human capital constrain the development of employability outcomes. University leaders should strategically invest in human capital through targeted recruitment, continuous professional development, and performance management linked to employability outcomes. Curricula should embed employer-valued skills such as critical thinking, communication, adaptability, and problem-solving. Strengthening institutional employability support, including career services and industry engagement, is critical for translating staff capacity into labor-market-ready graduates. The study contributes to the literature by highlighting the central role of academic and administrative staff in shaping graduate employability in resource-constrained public universities. It provides context-specific evidence from Uganda, clarifying how staff competence, motivation, and leadership collectively influence labor-market outcomes.

Keywords: *South-western Uganda, Human capital, Employability skills, Public universities, Graduate employability*

1. Introduction

Graduate employability has emerged as a critical concern for policymakers, employers, and higher education institutions worldwide, driven by persistent mismatches between graduate capabilities and labor market requirements. Rapid technological change, globalization, and evolving work structures have fundamentally altered skill demands, placing increasing pressure on universities to produce graduates who are adaptable, productive, and employment-ready (Winterton & Turner, 2019; Mainga et al., 2022). Despite expanding access to higher education, many graduates struggle to secure suitable employment, particularly in developing and emerging economies, where labor markets are less absorptive and institutional capacity is constrained (El Baradei & Kadry, 2022; OECD, 2022). Globally, graduate employment challenges cut across both developed and developing contexts. Evidence from countries such as India, China, the United States, and several European economies shows that significant proportions of graduates experience unemployment or underemployment despite holding formal qualifications (Nghia, 2019; Kang & Mok, 2022; Calvo & García, 2021; Sharma & Ahlawat, 2024). These patterns underscore the systemic nature of graduate employability challenges, suggesting that formal educational attainment alone is insufficient to guarantee successful labor market transitions. The situation is particularly acute in Sub-Saharan Africa, where rapid expansion in higher education enrolment has not been matched by commensurate growth in graduate-level employment opportunities. Approximately half of graduates in the region encounter difficulties securing employment annually, largely due to skill mismatches, limited practical competencies, and weak alignment between university training and employer needs (ILO, 2021; Zeleza, 2021; Asumadu et al., 2022). Although graduates possess academic credentials, employers frequently report deficiencies in job-relevant skills, resulting in persistent unemployment, underemployment, and occupational mismatch (Morsy & Mukasa, 2019). In Uganda, graduate employability challenges are especially pronounced. Recent statistics indicate that only about 12.86% of annual graduates—approximately 90,000 out of 700,000—access viable formal employment opportunities (Mastercard Foundation, 2025).

Furthermore, over 30% of individuals with a university degree remain unemployed, with female graduates disproportionately affected (UBOS, 2023). These challenges persist despite extensive public investments in

higher education and the implementation of multiple national programs aimed at enhancing youth skills development and labor market participation. The continued prevalence of graduate unemployment suggests that deeper institutional factors within universities may be constraining graduates' employability outcomes. From a theoretical perspective, Human Capital Theory provides a foundational framework for understanding graduate employability by emphasizing the role of education, skills, and competencies in enhancing individual productivity and labor market value (Becker, 1993). Universities are therefore expected to function as key sites for human capital development, equipping graduates with knowledge, skills, and attributes that improve their employment prospects. Complementing this view, Signaling Theory suggests that educational qualifications signal graduates' capabilities to employers, influencing hiring decisions and labor market outcomes (Spence, 1974). Together, these theories underscore the centrality of human capital in shaping graduate employability.

Applying Human Capital and Signaling theories to Uganda's higher education landscape highlights how deficiencies in institutional human capital may directly impede graduate labor market success. Empirical evidence consistently demonstrates a positive relationship between human capital and graduate employability, with studies highlighting the importance of knowledge, competencies, and transferable skills in facilitating successful school-to-work transitions (Clarke, 2018; Römgens et al., 2020; Abelha et al., 2020; Donald et al., 2024). However, much of the existing literature focuses on students in developed economies or examines employability at the individual level, offering limited insight into how institutional human capital within universities contributes to graduate employability in developing contexts. Notably, in Sub-Saharan Africa—and Uganda in particular—empirical research examining the role of university human capital in shaping graduate employability remains scarce. Existing studies often emphasize curriculum content or student competencies while overlooking the broader institutional human capital embedded in academic and administrative staff responsible for designing, delivering, and assessing learning outcomes. This gap limits understanding of how universities' internal human capital capacity influences graduates' readiness for the labor market. Against this backdrop, this study investigates the effect of human capital on graduate employability in public universities in Southwestern Uganda. By focusing on institutional human capital as a critical determinant of employability outcomes, the study contributes to the literature by extending human capital theory to a developing-country higher education context. Empirically, it provides context-specific evidence on how universities' human capital influences graduate employability, while practically, it offers insights for policymakers and university managers seeking to enhance graduate employment outcomes through targeted investments in academic capacity development.

2. Literature Review

Theory

Human Capital Theory, introduced by Schultz (1972) and developed by Becker (1993), emphasizes the role of education and training in enhancing individuals' productivity, competitiveness, and employability. It views human capital as the combination of knowledge, skills, and experiences that increase one's value in the labor market (Tomlinson, 2017; Mgaiwa, 2021). The theory posits that investment in education leads to higher productivity and economic growth, with the labor market rewarding individuals based on their human capital attributes such as qualifications and skills (Nwajiuba et al., 2020). In relation to this study, the theory is relevant because public universities are expected to equip graduates with knowledge and competencies that enhance their employability and readiness for the labor market (Pitan & Muller, 2019). However, the theory has been criticized for assuming that education automatically translates into employment and for overlooking factors such as labor market conditions, creativity, and informal learning opportunities (Tholen, 2023). Despite these limitations, Human Capital Theory remains a useful framework for examining how investments in higher education and skills development influence graduate employability, especially in the context of public universities in South-Western Uganda.

Signaling Theory

Signaling Theory, introduced by Spence (1974), explains how in labor markets with asymmetric information, employers rely on signals such as educational qualifications, certifications, and other observable attributes to assess a graduate's potential productivity (Tomlinson, 2021; Huntington-Klein, 2020). These signals act as proxies, helping employers interpret candidates' abilities, while graduates use their degrees and skills to demonstrate employability. Signaling is also a two-way process, as employers send signals about job

requirements and organizational culture, which influence graduates' career choices (Rodrigues et al., 2020). In relation to this study, the theory is relevant because it highlights how graduates' academic credentials and acquired skills are interpreted by employers in determining employability and organizational fit (Saini & Jawahar, 2019). However, it has been criticized for oversimplifying education as merely a signal rather than a source of real skills, and for neglecting broader contextual factors such as organizational culture and labor market conditions (Akkermans et al., 2024). Despite these limitations, signaling theory remains a useful framework for analyzing how educational outcomes in public universities influence employer perceptions and graduate employability in South-Western Uganda.

Empirical literature

Universities are under increasing pressure to enhance the employability of their graduates, ensuring that they succeed in an increasingly competitive job market. Graduate employability has emerged as a pivotal concern in higher education, as highlighted by Cheng et al. (2022). This emphasis is driven by concerns that graduates lack the requisite skills for successful professional careers, thereby shifting the responsibility toward universities (Small et al., 2018; Mainga et al., 2022). The development of human capital, encompassing the knowledge and skills possessed by individuals, plays a crucial role in improving graduate employability (Römogens et al., 2020; Clarke, 2018; Donald et al., 2024; Abelha et al., 2020). Existing research often focuses on essential individual graduate competencies for employability in Western contexts, Donald et al. (2024) (North America, Europe, Australia); Healy et al. (2022) (Ireland); Tomlinson & Jackson (2021) (UK); Caballero et al. (2020) (Spain). However, a gap exists in understanding the role of university-based human capital itself (Tomlinson, 2017; Clarke, 2018; Donald et al., 2024).

Although the importance of human capital in shaping graduate employability is well-established (Mokhtar et al., 2022) the specific mechanisms through which human capital influences graduate employability outcomes in the Ugandan context remain understudied and require further investigation. Universities act as hubs of human capital, developing graduates through teaching, research, and management activities (Berchin et al., 2021). Research consistently highlights the critical role of higher education in equipping graduates with employability skills (Behle, 2020). This aligns with Awan and Saeed's (2015) a framework which emphasizes knowledge development, utilization, and application as key drivers of graduate employability (Ng et al., 2022). The expertise of faculty, researchers, and managers constitutes a unique university resource, fostering a valuable environment for student learning and development (Quintero-Quintero et al., 2021).

The teaching and learning approaches employed by lecturers have a profound impact on the development of graduates' competencies (Borah & Malik, 2021). Lecturer's cultural backgrounds and teaching methodologies significantly shape the learning experience, ultimately influencing the knowledge and skills acquired by graduates (Rajaram, 2023; Heng & Song, 2020). Fostering proactive, socially oriented, and autonomous learning environments is critical in this regard (Borah & Malik, 2021). This perspective emphasizes the importance of educators expanding their scope beyond mere academic achievement (Feraco et al., 2023; Sahudin, 2022). By instilling essential skills and promoting self-directed learning, educators can significantly enhance graduates' employability prospects (Al Asefer & Abidin, 2021; Calvo & García, 2021).

Moreover, research highlights that the quality of university personnel, including both faculty and administrative staff, significantly plays a crucial role in shaping graduates' job opportunities and overall employability (Siivonen et al., 2023). Succi & Canovi (2020) and Byrne, (2022) highlight a shift in the literature, where supporting student employability is seen as an academic responsibility. This is achieved through curriculum design aligned with industry skills and knowledge needs. Towers et al., (2020) build on this, emphasizing the importance of fostering entrepreneurial capacity in undergraduates. They argue that the current dynamic competitive job market necessitates graduates with entrepreneurial acumen across disciplines (social sciences: e.g., retail, business; natural sciences: e.g., pharmacy, engineering), highlighting the need for universities to prepare graduates not just for employment, but also for initiating their own ventures, demanding constant, structured, and unstructured learning. Hassock & Hill (2022) found that graduates taught by academics with industry experience have higher employment rates. Their research highlights the importance of industry experience in enhancing graduate employability, noting that academics with practical experience can impart valuable, employer-desired skills and knowledge to students. These findings align with Sultanova et al.'s (2018) study on competency transmission within Kazakhstan's universities, which revealed

that institutions' competitiveness in the knowledge economy depends on their faculty's ability to effectively teach market-relevant skills.

Similarly, Chigbu & Nekhwevha (2022) found that a university's human capital plays a pivotal role in preparing graduates for the workforce, emphasizing that well-developed academic staff are crucial for enhancing graduates' labor market readiness. Further exploring the significance of human capital, Cricelli et al. (2018) conducted a study examining the interplay between intellectual capital and university performance, specifically targeting public universities in Colombia within the context of emerging economies. Their study suggests that universities with high-quality human capital, characterized by strong faculty and administrative staff development, are more likely to produce graduates with industry-valued skills and improved employability outcomes. However, Okolie et al. (2020) highlight challenges faced by Nigerian universities in enhancing graduate employability. While their study confirms a positive correlation between human capital and graduate employability, it also identifies a shortage of trained academics and industry professionals. Their findings suggest that this shortfall limits Nigerian universities' capacity to equip graduates with relevant skills for the contemporary workforce, thereby creating a disconnect between the theoretical advantages of robust human capital and its practical application. Furthermore, developing strong university human capital can be particularly challenging in the developing world. Research by Fomba et al. (2023) and Ogunode & Okechukwu Ezema (2022) draws attention to the problem of political interference in university governance within developing countries, which can have a ripple effect on faculty recruitment. Furthermore, the rapid growth of higher education in these regions has strained resources, potentially leading to a shortage of qualified instructors (Arnhold & Bassett, 2021). Moreover, limited access to professional development opportunities for instructors further compounds this issue, hindering the development of effective teaching skills and potentially leading to rote learning approaches based on memorization (Uzorka et al., 2023). The preceding discussion highlights the importance of the link between human capital and graduate employability, with extensive research demonstrating a strong positive correlation between the quality of university-based human capital and graduates' employability prospects.

Although the significance of human capital is increasingly recognized, the existing literature presents a complex and sometimes contradictory picture. Some studies highlight a robust connection between human capital and graduate employability (Lundgren-Resenterra, 2023; Pangidoan & Nawangsari, 2022; Strazzullo et al., 2022), while other studies advocate for a more nuanced perspective, emphasizing the role of supplementary factors within higher education that extend beyond human capital (Abelha et al., 2020; Clarke, 2018; Robson, 2023). Abelha et al. (2020) highlight the limitations of solely focusing on human capital. They argue that institutions need to consider additional factors beyond traditional human capital development, such as curriculum design and employer engagement. Clarke (2018) and Robson (2023) supports this view, finding that human capital alone does not guarantee graduate employability. Tamrat (2022) further argues that graduate employability outcomes are significantly shaped by government policies, labor market structures, and social contexts, and advocates for a comprehensive strategy that aligns national policies with labor market requirements, acknowledging that university-level human capital alone is insufficient to address the complex issues surrounding graduate employability. Furthermore, limited research has focused specifically on the Ugandan context. In light of these inconsistencies and the research gap within Uganda's context, the following was hypothesized: There is a relationship between human capital and graduate employability.

3. Methodology

The study employed a positivist paradigm with a quantitative approach, anchored in the assumption that human capital and graduate employability can be objectively measured and analyzed. A cross-sectional research design was adopted, allowing for the collection of data at a single point in time to identify patterns and relationships between the study variables. The target population comprised 8,696 graduates from Kabale University, Mountains of the Moon University, and Mbarara University of Science and Technology (MUST) who graduated in 2019, 2022, and 2023, as well as 145 academic and administrative staff members across these institutions. From this population, a sample of 383 graduates was determined using Yamen's (1973) formula, while all 145 staff members were included in the study to ensure comprehensive coverage of those directly involved in planning, supervision, and quality assurance. Graduates were selected through simple random sampling, while staff were chosen purposively given their strategic roles and expertise.

Data were collected using a self-administered questionnaire, adapted from validated instruments by previous scholars and modified to suit the Ugandan higher education context. Constructs were measured on a five-point Likert scale, capturing perceptions of human capital and graduate employability. To ensure validity and reliability, the instruments were pre-tested, and statistical checks such as confirmatory factor analysis, Cronbach's alpha, and tests for common method bias, tests for parametric assumptions were undertaken. Data were managed and analyzed using SPSS version 26 and Structural Equation Modelling (SEM) to test direct, indirect, and interaction effects among variables, with bootstrapping applied for mediation analysis. Ethical clearance was obtained from the un, and measures such as informed consent, confidentiality, and fair compensation were implemented to safeguard participants' rights.

4. Results

Sample Characteristics

The study drew responses from 377 graduates and 122 university staff from three public universities in South-Western Uganda. Graduates were predominantly recent completers (2019–2023), with the majority holding bachelor's degrees, while staff respondents largely occupied academic leadership and management positions and possessed postgraduate qualifications. This composition ensured that the data reflected informed perspectives on institutional human capital and graduate employability.

Descriptive Statistics

Analysis of the study variables showed that human capital had a relatively high mean score ($M = 4.071$, $SD = 0.457$), reflecting strong respondent agreement on the presence and relevance of academic and administrative competencies in public universities. In comparison, graduate employability registered a moderately high mean ($M = 3.966$, $SD = 0.380$), indicating that although employability outcomes exist, they remain below the perceived level of institutional human capital.

Measurement Model Assessment

Confirmatory Factor Analysis (CFA) was conducted to assess the validity and reliability of the measurement models for human capital and graduate employability before hypothesis testing. The refined human capital model retained six indicators with standardized factor loadings ranging from 0.658 to 0.774 ($p < .001$), demonstrating strong construct representation. Model fit indices indicated excellent fit ($CFI = 0.988$; $TLI = 0.974$; $RMSEA = 0.059$), with composite reliability ($CR = 0.81$) and average variance extracted ($AVE = 0.63$) exceeding recommended thresholds. Similarly, the graduate employability measurement model demonstrated satisfactory fit ($CFI = 0.952$; $TLI = 0.931$; $RMSEA = 0.058$), with all indicators loading significantly on their respective dimensions. Composite reliability values ranged from 0.82 to 0.88, confirming internal consistency and convergent validity. These results confirm that the constructs were measured reliably and were suitable for subsequent analysis.

Relationship between Human Capital and Graduate Employability

Pearson correlation analysis revealed a strong and statistically significant positive relationship between human capital and graduate employability ($r = 0.551$, $p < .01$). This indicates that higher levels of institutional human capital are associated with higher levels of graduate employability in public universities in South-Western Uganda.

Predictive effect of Human Capital on Graduate Employability

To test the predictive influence of human capital on graduate employability, hierarchical regression analysis was conducted while controlling for respondents' age and level of education. The control variables explained a minimal proportion of variance in graduate employability ($R^2 = 0.015$). When human capital was introduced into the model, it accounted for an additional 29.8% of the variance in graduate employability ($\Delta R^2 = 0.298$, $p < .001$). Human capital emerged as a strong and positive predictor of graduate employability ($\beta = 0.547$, $p < .001$), providing empirical support for Hypothesis 1. This finding indicates that universities with higher levels of academic competence, professional expertise, and staff capability are more likely to produce graduates who are better positioned for labor market participation.

Discussion of results

The study found a significant positive relationship between human capital and graduate employability in public universities in South-Western Uganda ($\beta = 0.547$, $p < .001$). This indicates that universities with higher-quality human capital—comprising professional competence, motivation, and leadership capacity of staff—are more effective in producing employable graduates.

This finding aligns with Human Capital Theory (Becker, 1993), which posits that investment in knowledge and skills enhances productivity and labor market outcomes. In the Ugandan context, where public universities face infrastructural deficits and bureaucratic constraints (Ndibuuza et al., 2021; Kibuuka, 2025), human capital functions as the critical adaptive resource that sustains employability outcomes. Unlike physical infrastructure, skilled staff provide interpretive flexibility, adapt curricula responsively, and creatively leverage limited resources and industry linkages to enhance student learning (Annala et al., 2023).

The results are consistent with international studies demonstrating that faculty quality directly influences graduate outcomes. Phusavat et al. (2025) and Asiedu et al. (2023) found that faculty involvement in curriculum design and industry engagement is vital for embedding market-relevant skills. Similarly, Cricelli et al. (2018) showed that universities with high-quality human capital produce graduates with stronger industry-valued competencies. In Africa, Okolie et al. (2020) confirmed this positive correlation in Nigerian universities, while noting that shortages of trained academics constrain institutional capacity—a challenge equally relevant to Uganda.

Within Uganda, Mbabazi et al. (2020) demonstrated that improvements in staff quality enhance graduates' practical skills and workplace confidence. The current study extends this by quantifying the predictive strength of human capital on employability outcomes in public universities. The finding that human capital explains 29.8% of the variance in graduate employability underscores its central role. Crucially, human capital must operate cohesively across teaching, mentoring, and program support functions to maximize employability outcomes (Valero et al., 2020; Päivi Siivonen et al., 2023). Skilled academic staff transmits disciplinary knowledge while modeling critical thinking and problem-solving. Administrative staff ensure supportive institutional processes, including career services and internship coordination. When these functions align, universities create an ecosystem where student capabilities are systematically developed and translated into labor-market readiness.

The practical implication is clear: in resource-constrained settings like Uganda, human capital is not merely additive but transformative. Strategic investments in recruitment, professional development, and performance management linked to employability outcomes are essential. Initiatives empowering staff to innovate pedagogically and deepen industry partnerships directly enhance graduate outcomes.

In summary, this study demonstrates that human capital is the central driver of graduate employability in Ugandan public universities. Its coordinated deployment across institutional functions bridges the gap between educational inputs and labor market outcomes, reinforcing the critical role of skilled staff in sustaining institutional resilience and graduate readiness.

5. Conclusion and Recommendations

This study examined the role of human capital in shaping graduate employability in public universities in South-Western Uganda and found that human capital is a strong and significant predictor of graduate employability. Skilled, motivated, and professionally competent academic and administrative staff directly enhance graduates' labor-market readiness by developing employability skills and supporting processes that ensure these skills are effectively acquired, while deficiencies in human capital constrain the development of employability outcomes.

The study contributes to the literature by providing empirical evidence that human capital is the central driver of graduate employability in resource-constrained university settings, clarifying how staff competence, motivation, and leadership collectively shape graduate outcomes, and highlighting the mediating role of employability skills in translating human capital into labor-market success. Based on these findings, university

leaders should prioritize strategic investment in human capital through targeted recruitment, continuous professional development, and performance management tied to employability outcomes; embed employer-valued skills such as critical thinking, communication, adaptability, and problem-solving into curricula and pedagogy; and strengthen institutional employability support structures, including career services, internships, and industry engagement, to translate staff capacity into market-ready graduates. Policymakers should implement outcome-oriented quality assurance and funding mechanisms that incentivize universities to enhance human capital and employability skills development. In conclusion, human capital is the primary driver of graduate employability, and deliberate investment in staff competence, motivation, and leadership, coupled with institutional support, is essential for producing graduates equipped for the labor market and advancing national human capital development.

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