



## REIMAGING PUBLIC-PRIVATE NEXUS IN ACCELERATING WOMEN'S PROGRESSIVE EDUCATION

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### **Abstract:**

Despite significant progress in recent years, gender disparities in education persist! The main objective of the study is to establish the role of public-private nexus in accelerating women's progressive education. The significance of the study is to expand access to progressive and quality education for women, inform policies, enhance capacity to upscale women's holistic learning and, most importantly, alleviate Kenya's weak nexus between women empowerment policies and quality education. The study also seeks to promote resilience and innovativeness among higher education institutions so as to emerge stronger and holistically support women's empowerment and girls' education. The study adopted John Dewin's theory of education and Social Capital Theory as the study underpinning theory to support the variables. The study adopted a mixed-method research design strengthened with pragmatism and constructivism as the appropriate research paradigm. The study focused on students as the key unit of observation. The lecturers' views were sought since the researcher adopted a learner-centered approach using cross-sectional data. In addition, secondary data and key informant interviews were used to get facts from government published data, industry-based reports and

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community-based organisations. Questionnaires were used to collect primary data from the study respondents. The study sample size comprised 129 students. The study also targeted 60 lecturers who were teaching during the same period. The study adopted stratified sampling techniques. The study findings revealed that 29(67.44%) of the respondents stated that public-private partnerships provide access and avenues for women's progressive education. The overall regression results revealed that there is a statistically significant relationship between the public-private nexus and women's progressive education with a regression coefficient of 0.164, a t-value of 1.62, and a p-value of 0.1000. The result implies that the coefficient of the public-private nexus is statistically significant at a 10 per cent level of significance. The magnitude of the coefficient of public-private nexus is 0.164. This implies that *ceteris paribus*, one percent increase in the score of public-private nexus leads to a 16% change in women's progressive education. The study also found a 16% projection rate of student enrollment annually with enhanced public-private nexus. The study concludes that synergistic-quadripartite partnership enhanced and collaboration plays a vital role in accelerating women's progressive education. The study recommends strengthening synergistic-quadripartite partnerships with industry partners to enhance the public-private nexus and women's progressive education while integrating gender perspectives in curriculum development. To enhance sustainable partnerships, institutions should forge a framework for a memorandum of understanding with industry players and agree on partnership and collaborative opportunities. Higher learning institutions should leverage innovation through transformative pedagogical approaches and fostering institutional-industry collaboration to address skills mismatch in the labour market.

**Keywords:** public-private nexus, women, progressive education, quadripartite-partnership, collaboration, nexus

## 1. Introduction

In this globally competitive world, the interplay between institutions, the government, employers and the community should be welcomed because they represent the solid foundation for innovation and institutional development strategies, as well as the broadening of institutional objectives and goals so that they can effectively respond to labour market and societal needs. Harnish and Angel (2024) reported that universities need to prove their value to local communities. The two researchers argued that forging nexus is the way to make universities palpate, be vibrant and more integral in their community. However, it is evident that lack of access to quality education widens the gender inequality gap, which remains deeply entrenched in our societies, locally, regionally and globally. In the long run, it affects learners' progression. Specifically, women lack access to decent work and inadequate access to higher education and health care services.

Globally, universities participate in activities with a range of stakeholders and collaborators. The partnerships with stakeholders are often connected to the missions of a university research, teaching and learning, and service (Amand *et al.*, 2024). Indeed, public-private partnerships (PPPs) serve as a critical tool for fostering infrastructure and economic stability globally. Researchers have described a partnership as a formal agreement between two or more parties that provides mutual benefits to those parties.

Partnership as a process of engagement uniquely foregrounds qualities that put reciprocal learning at the heart of the relationship, such as trust. The general motivation of partnership or nexus is to upscale financial and physical resource mobilization, enhance communication and information sharing, provide expertise to the industry, and gain support for authenticity and legality among institutions. To enhance the public-private nexus in higher learning institutions, all these stakeholders have a role to play – the government, community-based organisations, private sector partners, the universities, the lecturers, students and parents.

Mathews, Cook-Sather, and Acai (2019) defined partnership as a collaborative, reciprocal process through which all participants have the opportunity to contribute equally, although not necessarily in the same way in the curricular or pedagogical conceptualization, and in decision-making, the debate and studies have been conducted emphasizing Students as Partners (SaPs) in higher learning institutions. Many institutions have implemented the SaPs by including student leaders in management meetings. Mathews *et al.* (2019) in their study argue that educators differ in how they see in considering SAPs. The researchers identified three analytical approaches, which include building on concepts, drawing on constructs and imaging through metaphors. Partnership seeks to increase learning opportunities for adolescent girls and women.

Through partnership, institutions can solve some of women's education's biggest obstacles or challenges. The main reason is to improve the quality of education for women and girls. Partnerships in higher learning institutions integrate student engagement but not all student engagement is partnership initiated. Koigi, Kiragu, Marwa, and Theuri (2018) in their study argued that an effective education partnership is a dynamic, collaborative process that brings mutual benefit to both parties.

## **2. Status of Women's Only Universities**

The status of women's universities globally is a complex and evolving landscape due to inadequate data available. While some regions have seen a decline in the number of women's colleges and universities, others, particularly in Africa, Asia, and the Middle East, are experiencing growth in women's only universities. In the United States, the number of women's colleges has decreased significantly over the past few decades, from 230 in the 1970s to around 45 today (Ladika, 2024). The decline could be attributed to various factors, such as changing societal attitudes towards women's education, financial pressures, and declining enrollment, which is evident in most universities.

In contrast, many countries in Asia, Africa, and the Middle East have witnessed a rise in women's universities. In South Korea, there are seven women's only universities,

with one of them being Ewha Woman's University, which is the oldest and most prestigious women's university in South Korea. The women's only universities play a crucial role in providing educational opportunities for women in regions where access to higher education may be limited. Women's only universities offer specialized programs and a supportive environment that caters to the specific needs of women students around the world. In Rwanda, a women's college was founded to help develop their economic potential. The Akilah Institute for Women opened its doors in Kigali, Rwanda, in 2010 and is the only all-women's only in the country (Ladika, 2024).

In Kenya, there is only one women's only university. Kiriri Women's University of Science and Technology, often referred to as KWUST, is a non-state-funded women's university in Nairobi, Kenya. It was started in 2002. Its aim is to empower women holistically. To date, KWUST is the only women's university in East and Southern Africa that has also opened its doors to both local and international female students. The university has established linkages with many organisations such as government agencies, state departments, parastatals, county governments, non-governmental organisations, and more strategic nexus with the National Industrial Training Authority (NITA) to facilitate school-to-work transition through industrial attachment opportunities, internship and job opportunities. The state departments and hotels offer the highest number of attachment opportunities.

## **2. Objective of the Study**

The main objective of the study is to reimage the public-private nexus in accelerating women's progressive education.

### **2.1 Specific Objective of the Study**

- To establish how public-private nexus accelerates women's progressive education at KWUST.

### **2.2 Research Question**

- How does public-private nexus accelerate women's progressive education at KWUST?

### **2.3 Statement of the Problem**

Despite significant progress in recent years, gender disparities in education persist. While enrollment rates for girls have significantly increased, challenges remain in ensuring equal access to quality education and progression, particularly in rural areas. In addition, early marriages, teenage pregnancies, poverty, and cultural norms continue to hinder women's and girls' progress in education, thus limiting their potential and contributing to socioeconomic inequalities. The above arguments are consistent with results revealed in the 2019 Sustainable Development Goal (SDG) Gender Index Report by Equal Measures 2030. The report found that with just six years to go until 2030, nearly 40% of the world's girls and women live in countries falling on gender equality.

Similarly, a study in Kenya revealed that only 29% of women between the ages of 15 and 49 are empowered (KNBS, UNICEF and UN Women, 2020). Thus, universities are the key to fairer and more inclusive societies, providing quality education for all and increasing access to higher education institutions. However, progression in higher learning heavily depends on access to primary and secondary education. The crisis in accessing quality education is also evident in low student enrollment and progression experienced in most universities in Kenya. Unfortunately, many girls remain out of school due to poverty and unplanned pregnancies and remain exposed to gender-related barriers in education, pushing them further behind and deeper into poverty (Mararo, 2021).

The low enrollment and progression rate can be attributed to the poverty rate in Kenya, which stood at 39.8% of the country's population of 54.3 million people as of 2022. Access to quality education and gender equality is not only a basic human right but a key pillar in achieving Sustainable Development Goals 4 and 5. UN Women (2024), in their report on Women's Economic Empowerment, stated that valuing women's work means recognizing the tremendous contribution that paid care jobs in health, education, and domestic work make to the everyday functioning of economies and societies. Thus, properly representing and rewarding women for this work is key.

### **3. Literature Review**

#### **3.1 Theoretical Review**

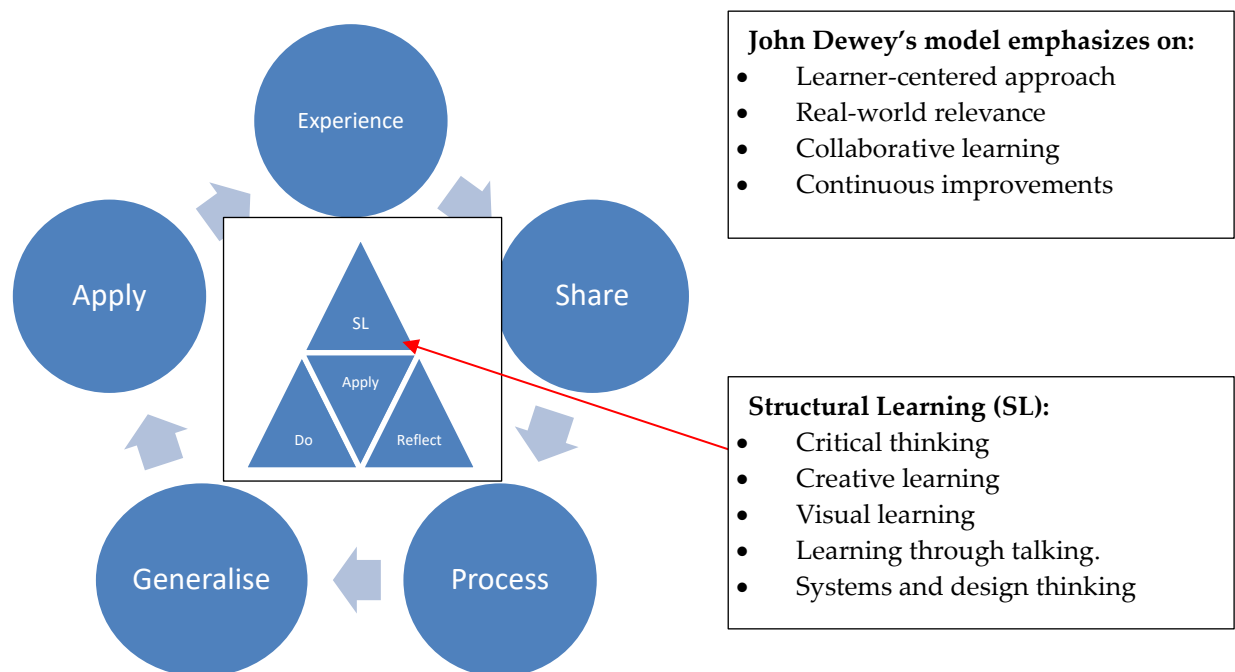
Theory is an already refined construct that provides a deeper understanding of concepts and describes the phenomenon. In this study, the underpinning theories that support progressive education include:

##### **2.1.1 John Dewey's Theory of Learning**

John Dewey (1859-1952) was an influential philosopher, reformer, intellectual and psychologist in education. Dewey developed a theory of education that emphasized the importance of experiential learning or learning by doing. This concept has since supported competency-based education and curriculum development. According to Lee and Oh (2019), Dewey, in 1916, argued that there is a need for education to be more pragmatic and democratic. In 1956, the curriculum harnessed by Dewey consisted of three elements, which included knowledge, intellect and recreation. In formal education, Dewey's philosophy of progressive education has the potential to extend to cultural and art education. In this context, the researchers Theuri, Waitherero and Nyabul (2020) simply defined progressive education as a school of thought that emphasizes the need to learn by doing (hands-on learning). Dewey felt that "hands-on" learning, which involved offering direct practical experience in the operation or functioning of anything, helped learners learn much better.

Dewey, in 1916, formulated the theory of progressive education due to the challenges that arose from dissatisfaction with traditional education, which imposed adult norms, subject matter, and methodology only. Dewey assumed that all parties are

equal and share the main aim of creating a social consciousness among learners Lee and Oh (2019). Using Dewey's approach, we see the need to re-model our education systems as described in Dewey's framework while integrating ICT and gender perspectives. This is a key aspect that drives the study's dependent variable, which is the pragmatic philosophy. Therefore, the study adopts John Dewey's Theory of Learning to support the dependent variable. The cycle presented in Figure 1 is continuous in the process of learning and repeats as learners continue to engage in them, apply their learning, evaluate and examine.



**Figure 2.1:** John Dewey's Learning Cycle Model Adapted from Main (2023)

### 3.1.2 Social Capital Theory

Social capital theory was not formulated by a single author in a specific year. Instead, the theory emerged from the work of various scholars over time. However, some key authors and their contributions to the development of the theory are as follows: the first author was Lyda Judson Hanifan (1916). Hanifan is credited with coining the term "social capital" to describe the collective value of social networks and relationships within a community. The second author was Pierre Bourdieu (1986). Bourdieu viewed social capital as a form of capital that individuals can accumulate through their social networks and relationships. Bourdieu emphasized the role of social capital in reproducing social inequalities (Claridge, 2015). Third, the author was James Coleman (1988). Coleman focused on the functional aspects of social capital, highlighting its role in facilitating social action and achieving collective goals.

Lastly, Robert Putnam (1993) popularized the concept of social capital and its importance for civic engagement and social cohesion. Putnam emphasized the decline of social capital in modern societies and its negative consequences. Social capital theory, the

collective value of social networks and relationships, plays a crucial role in accelerating women's progressive education. World Bank (2021) report on *Better Together: Empowering Women Through Stronger Networks*, indicated *that strong social networks can connect women to mentors, advisors, and other individuals who can provide guidance and support*. The theory supports women's progressive education in that its application can provide various benefits that empower women to pursue their educational goals by enhancing access to information and resources, mentorship and support, community and peer support, cultural and social norms, and building trust and collaboration.

## 3.2 Empirical Review

### 3.2.1 Collaboration and Women's Progressive Education

Koigi *et al.* (2018) conducted a study which aimed to explore the influence of university partnerships and collaborations on the performance excellence of universities in Kenya. A survey was carried out on 12 Universities in Kenya. The population of interest was the 40 public and private Universities that were accredited in Kenya as of May 2016. A sample size of 277 management staff was. Primary data was collected using questionnaires. The unit of measure was the departmental heads, which comprised the deans, directors, chairpersons, and heads of section. A response rate of 86.6% was realized. The bivariate regression results indicated that collaboration and partnership explain approximately 28.3% of the variations in university performance. These results imply that collaborations and partnerships present an opportunity for the university to universities to enhance their performance.

Collaboration in higher education is an indispensable tool that promotes quality education and increases research uptake. Queupil and Munoz-Garcia (2019) conducted a study to establish the role of women scholars in Chilean collaborative educational research. The study applied social network analysis (SNA) to examine the relationship and patterns that emerge from datasets retrieved from the Web of Science (WoS) of coauthored scholarly publications using sociograms, network centrality indicators, and bibliometric results. Specifically, the study focused on detecting the role of women. The study found that the presence of women in the research space has been stable since 2000. The researchers recommended a robust reflection of research policies and genders, as well as positionality of women doing knowledge education.

A study conducted by McKay and Sridharan (2023) sought to investigate student perceptions of the effectiveness of technology-enhanced group work assessments in developing teamwork and self-evaluation skills. While the study initially aimed to evaluate traditional in-person group work, the unexpected onset of the COVID-19 pandemic shifted the learning environment online. The study adopted a qualitative inductive research methodology. The findings suggest that students generally perceive collaborative group work as beneficial, but the transition to remote learning posed significant challenges to collaboration and teamwork. The study's insights contribute to a better understanding of the complexities of implementing CGW, especially in online contexts.

Stephanie and Ujala (2024) conducted a study to explore the impact of women's leadership on access and equity in global higher education. The study discussed the challenges faced by women in leadership positions, including gender discrimination and limited opportunities for career advancement. The study also discusses the historical context and current status of women's leadership in higher education, highlighting the increasing presence of women in leadership positions in various fields. It addresses the challenges women face in progressing to leadership positions and emphasizes the importance of increasing gender diversity in leadership roles. The study concludes by emphasizing the importance of mentorship and networking organizations in empowering women to pursue higher education and leadership positions. The study emphasized the importance of inclusive leadership that values and respects diverse identities. It calls for greater support and resources to empower women in higher education leadership roles.

### **3.2.2 Synergistic-Quadripartite Partnership**

Khayyan and Edling (2016) conducted a study on the public-private nexus for the educational development of the Central-Tribal Region of Pakistan. The article focused on policy strategies over the years, from the national education institutions facilitated by the non-for-profit sector to increase net enrolment rate, gross enrolment ratio and reduction in gender parity through a package of developed infrastructure. The study adopted quantitative and qualitative approaches in analysis and cluster sampling techniques when conducting the interviews. The study recommended sequential educational policies, strategies, and investments in financial resources.

The authors, Sajida and Kusumasari (2023), conducted a study to explore the Public-Private Partnership (PPP) implementation in the education sector: a systematic literature review. The study explains that one of the educational development challenges solved by a public-private partnership solution became a concern for various parties. The authors discuss the pros and cons of implementing PPP in education using practices from various countries. Using keywords related to PPP in education, the study adopted a systematic literature review from studies conducted between 1999 – 2022. Four clusters revealed that the diversity of sub-discussions has been at the public policy level, namely input, goals and process, output and outcome.

A study conducted by Massouti, Shaya, and Shaimaa (2024) sought to explore the nexus between female school leaders' perception of distributed instructional leadership, socio-cultural dynamics and student achievement in the Arab World. To achieve the study objective, the study employed the socio-empowerment theory to explore the collective impact of gender, instructional leadership and socio-cultural dynamics in improving student outcomes within public schools. An inductive-qualitative research methodology was utilized, followed by a thematic analysis of data obtained from Emirati senior female school leaders. The study results showed that Emirati female school leaders have effectively embraced and implemented a distributed instructional leadership style, thereby transforming their school's climate into learning organizations.



#### 4. Methodology

The study adopted pragmatism and constructivism as the appropriate research paradigm. Kaushik and Walsh (2019) in their study described paradigms as conceptual and practical tools that are used to solve specific research problems. The study also adopted a mixed-method research design and stratified random sampling technique. Mixed method research design is a procedure for collecting, analysing and mixing both quantitative and qualitative research and methods in a single study to understand the research problem (Creswell & Creswell, 2020; Fischer, 2021). In this study, secondary data was obtained from government reports on government-sponsored student' enrollment. The study adopted key informant interviews from community-based organisation representatives, private sector partners, university lecturers, students and parents. The study analysed both primary data and secondary data to draw conclusions on the nexus, quadripartite partnership and collaboration. The study sample size was calculated as follows:

Given that the target population is 408 students, the estimate is within 2 per cent of the true value, with a 95 per cent confidence level. In this case, e(error margin) in this case is 0.02; the level of significance is 0.05 %; the Z-tabulated value is 1.96. The study adopted Krejcie and Morgan's formulae in the computation of the sample size since the study population is known. The choice of sampling formulae is supported by (Bukhari, 2021).

$$N = 408$$

$$e = .02 \text{ (since the estimate should be within 2\% of the true value);}$$

$$z = 1.96 \text{ (as per the table of the area under the normal curve for the given confidence level of 95\%).}$$

Assume p to be p = .02

$$\frac{(1.96)^2(0.02)(1-0.02)(408)}{(0.02)^2(408-1)+(1.96)^2(0.02)(1-0.02)} = 129 \text{ students} \quad (3.1)$$

$$\frac{(1.96)^2(0.02)(1-0.02)(60)}{(0.02)^2(60-1)+(1.96)^2(0.02)(1-0.02)} = 26 \text{ lectures} \quad (3.2)$$

Equal representation of the study population has been taken into consideration.

**Table 3.1: Sampling Frame**

Type of Respondents	Target Population	Sample Size
Lecturers	60	26
Students	408	129

To establish the validity and reliability of the study instruments, the researchers conducted a pilot test. The study considered 10 per cent of the sample size 20 questionnaires for the pilot test. Further, reliability was determined through Cronbach's Coefficient Alpha. The results showed that the strength of the variables was above 0.7; hence all variables used were accepted.

The study adopted both descriptive statistics and statistical inference, so as to be able to draw objective conclusions and make generalizations based on the study results. The multiple regression model is represented below:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon \quad (3.3)$$

Where  $Y_s =$

$\beta_0 =$  Constant

$X_1 =$  Synergistic quadripartite partnership

$X_2 =$  Collaboration

$\varepsilon =$  error term

## 5. Findings, Analysis and Discussions

The study attained a high response rate of 81(63%) among students and 24(92%) among the lecturers. The study results concur with the results of the study conducted by Koigi *et al.* (2018), which aimed to explore the influence of university partnerships and collaborations on the performance excellence of universities in Kenya. A survey was carried out on 12 universities in Kenya, and a response rate of 86.6% was obtained.

### 5.1 Demographic Statistics

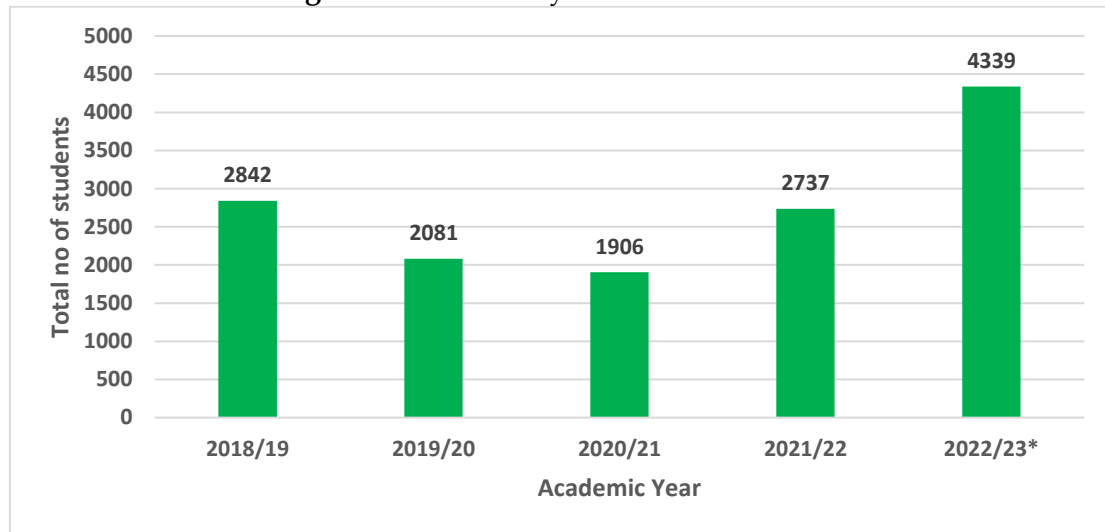
The study results show that 69(88.46%) of the students are aged between 18 – 24 years, 8(10.26%) of the students are aged between 25 – 31 years. The study results concur with that of Mugenyi *et al.*, (2017), who in their study found that 67% of the students were aged 31-39, while 62% were aged between 20 – 30. The above data implies that the University attracts young female students who have accelerated fairly well from primary to secondary school to university level. Understanding age-related differences can provide guidance for the deployment of new technologies that may be beneficial to students and lecturers in terms of learning, social interaction and cognitive engagement (Rogers *et al.*, 2017).

#### 5.1.1 Five-year Enrollment Trend

A review of the Statistical Abstract 2023 showed an encouraging enrollment trend of Government Sponsored Students (GSS) at KWUST. The data revealed a 26% decrease in enrollment for the academic year 2019/20 and an 8% decrease during 2020/21. This could be attributed to the impact compounded by the COVID-19 pandemic for the 2020/2021 period. The data also revealed a sharp increase of 30% for the academic year 2021/2022

and a 58.5% projected number for the period 2022/2023. The data presented in Figure 4.1 further shows a 31% enrollment projection rate.

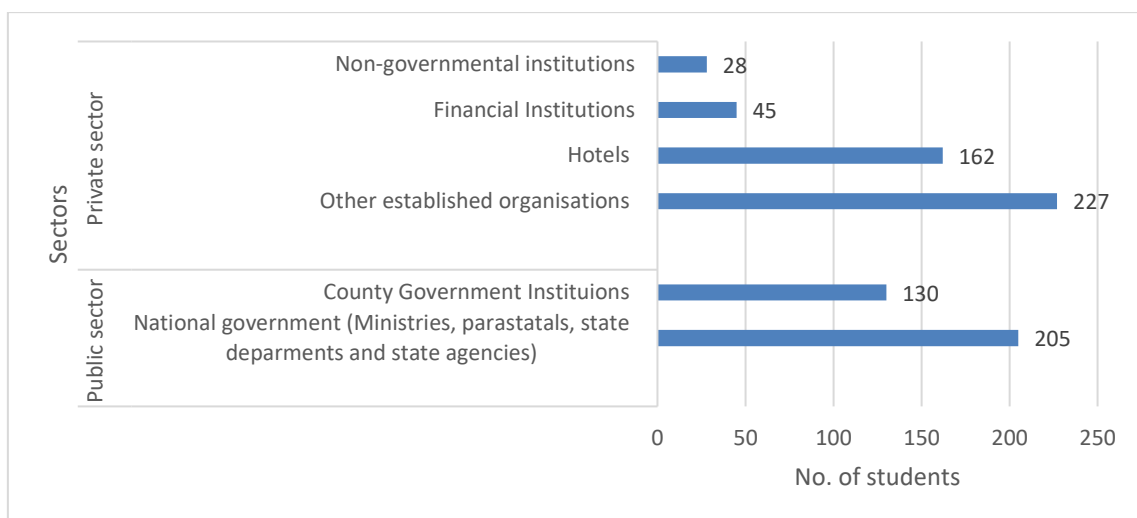
**Figure 4.1: GSS Five-year Enrollment Trend**



Source: KNBS, 2023.

### 5.1.2 Institutional-industry Nexus through Attachment/Internship Opportunities

Through the public-private nexus, institutions can enhance school-to-work transition through collaboration opportunities. The most immediate outcomes are the opportunities for attachment, internship, and volunteerism, as well as job opportunities for graduates. Figure 1.1 shows the estimated distribution of KWUST students offered attachment opportunities in various public and private institutions/organisations. The data drawn from the attachment data coordination office during the September-December 2024 semesters shows the positive outcome of a strong institutional-industry partnership. The overall data revealed that private sector organisations offer more opportunities for attachment than the public sector by up to 15%.



**Figure 4.2: Distribution of Students Offered Attachment Opportunities through Institutional-industry Linkages**

## 5.2 Descriptive Statistics

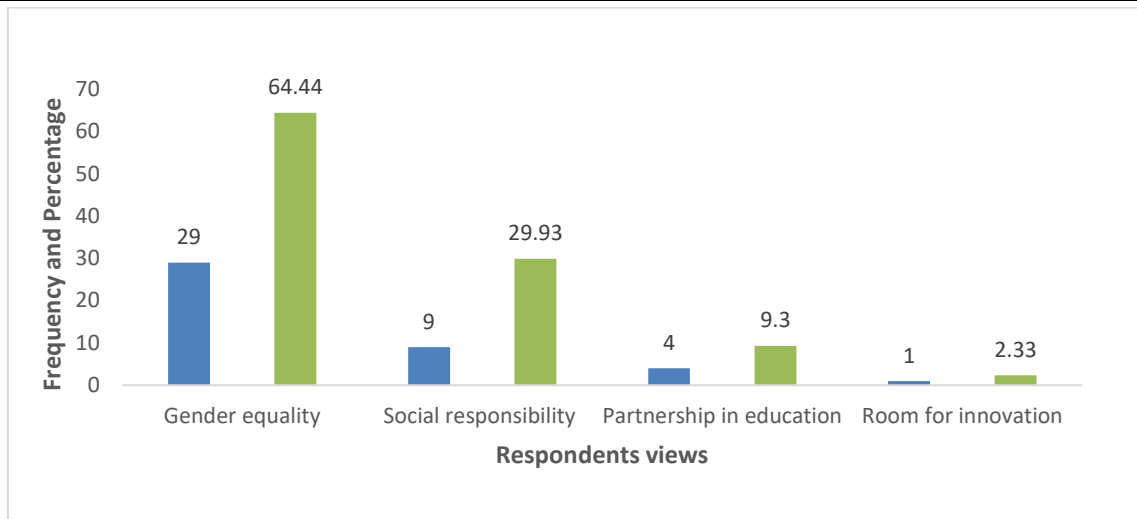
### 5.2.1 Public-Private Nexus and Women's Progressive Education

The study sought to establish the role of public-private nexus in accelerating women's progressive education at KWUST. In this section, the respondent was expected to state how public-private nexus accelerates women's progressive education. Out of 81 students, 43 responded and gave their views regarding the above research question. The study findings revealed that 29(67.44%) of the respondents stated that public-private partnerships provide access and avenues for women's progressive education. The study results also revealed that 40% of the study respondents stated that synergistic quadripartite partnership leads to increased access to education for girls due to improved infrastructure, scholarships, and awareness campaigns.

About 55% of the study respondents agreed that meaningful partnership with industry leaders also leads to enhanced quality of education through teacher training, curriculum development and provision of learning materials. In addition, the study findings also reveal that quadripartite partnership leads to improved community engagement and parental support for girls' education. The study findings concur with UNESCO's (2023) report, which indicated that 61% of higher education institutions strongly agree that gender equality is one of the principal goals of their lifelong learning efforts.

The study results are also in line with the findings of the American Institute of Research (2023) in their report on mapping opportunities. The report revealed that 39% of the study respondents referenced educating individuals as the primary goal of their initiative through a public-private partnership, 26% of the respondents also indicated that PPPs help in targeting the skills gap through education, training and upskilling, and 22% described their work as focused on addressing workforce growth (Odhong and Achieng, 2023).

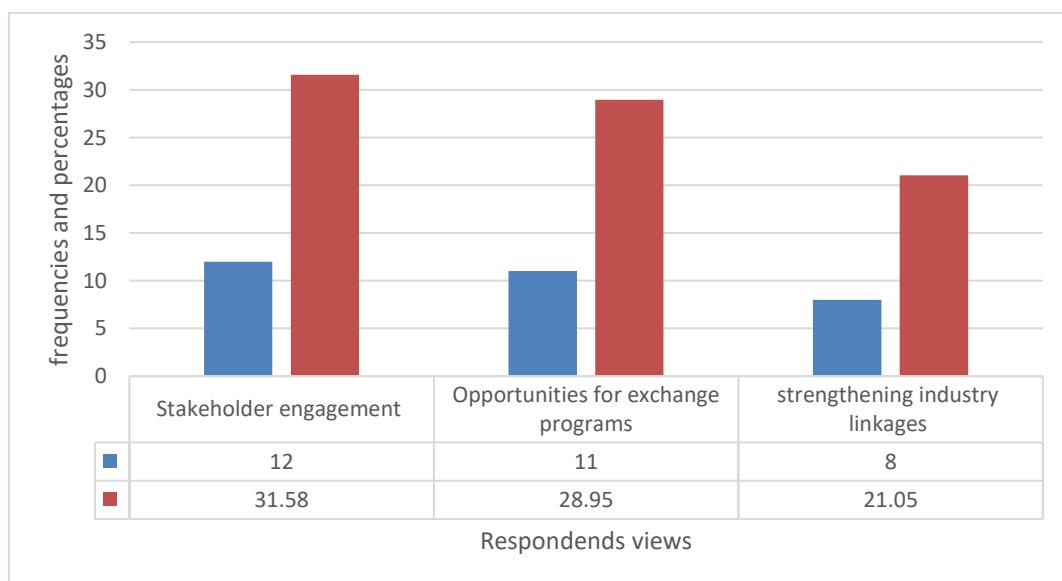
The study findings also revealed that 9(29.93%) of the respondents also indicated that PPNs improve women's living standards and enhance women's contribution to society. The study finding is consistent with the UNESCO (2023) report, which shows that 74% of higher education institutions see community engagement and social responsibility as the main driver for their involvement in lifelong learning. The above findings are consistent with the findings of the American Institute of Research, which indicated that institutions that are open to collaborating can receive 70% state funding and 57% funding from the private sector through research.



**Figure 4.3:** Public-Private Nexus and Women's Progressive Education

In summary, the study results provide a clearer understanding of the importance of each statement. The data presented in Figure 4.2 reveals that gender equality has the highest frequency (29) and the percentage of 67.44% indicating dominance in the data and implying that public-private nexus is key towards achieving gender equality.

The study results reveal that out of 81 respondents, only 38 students responded to this question. The study findings reveal that 12(31.58%) of the respondents suggested that stakeholder engagement - engaging students from public and private institutions in common forums will be helpful. The study findings also reveal that 11(28.95%) of the study respondents suggested that institutions of higher learning should create and make available opportunities for exchange programs – provide platforms and forums for knowledge sharing and acceleration of ideas through academic conferences. About 8(21.05%) of the study respondents suggested that public-private partnerships with a focus on strengthening industry linkages will create room for sustainable scholarship and funding.



**Figure 4.4:** How PPNs Accelerate Women's Education: The Students' Views

The study findings revealed that 31.58% stated that PPNs enhance stakeholder engagement. While 28.95% of the study respondents also indicated that through PPNs universities can create opportunities for student exchange and staff mobility programmes. In addition, the findings revealed that PPNs will facilitate financial assistance and funding by 21% while collaboration and teamwork at 10%, as shown in Figure 4.4. The study findings corroborate existing research and literature reviews in this study that highlight the importance of collaborative efforts between the public and private sectors to enhance educational opportunities for women.

Stakeholder engagement ensures that the needs and priorities of all relevant parties are considered in the design and implementation of educational programs. Sustainable scholarships and funding are crucial for attracting and retaining talented women in education, particularly in marginalized communities. In addition, investing in research and universal basic education lays the foundation for a strong and equitable education system. It is important to note that while these suggestions are valuable, their implementation requires careful consideration of contextual factors and resource availability.

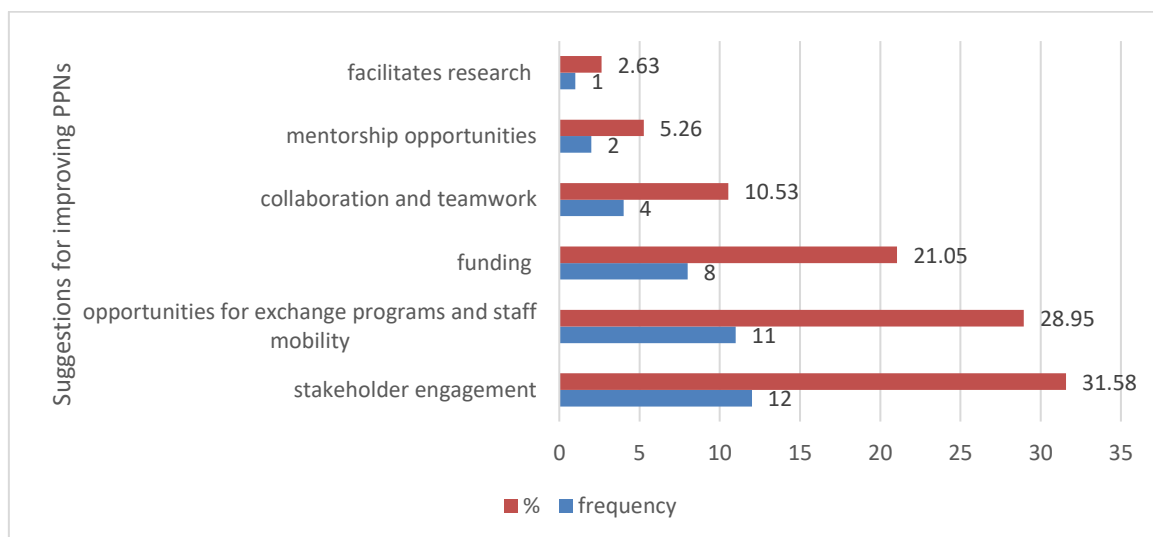


Figure 4.5: Ways of Promoting PPNs to Enhance Women's Education

## 5.2 How Does Public-private Nexus Influence Female Student's Enrolment, Retention and Education Outcome

The study found that 58.32% of the study respondents agreed that PPNs enhance students' enrolment through increased access to education, helping them make the right choices and be affordable. In addition, 30.12 % of the study respondents agreed that PPNs enhance retention through flexible learning options, enhanced student support systems and improved quality service delivery in institutions. In regard to enhancing educational outcomes, 52% of the study respondents agreed that PPNs enhance students' learning experience, academic performance, and lecturers' skills development. The study findings are in line with the suggestion made by Davis (2023), which is that policymakers should adopt approaches that can make it easier for educators to find and use innovative,

evidence-based approaches to help accelerate learning, especially in the current post-pandemic environment.

The study further analysed the student enrolment trend from the year 2021 – 2024. The four-year trend collectively shows the combined total number of Degree, Diploma and Certificate students. Based on the trends, the total number of students in 2021 was 3,598, and in 2022, it was 4,816. In 2023, a total of 5,914 enrolled, and in 2024, a total of 6,011 enrolled for various programmes from degrees, diplomas and certificates. The trend, therefore, reveals that, on average, the student enrolment rate can increase by up to 16.53%. Hence, the projection stands at 17% in a women's only university.

### 4.3 Overall Regression Results

The study sought to establish the role of public-private nexus in accelerating women's progressive education at KWUST. The regression results show that there is a positive statistically significant relationship between the public-private nexus and women's progressive education with a regression coefficient of 0.164, a t-value of 1.62, and a p-value of 0.1000. The estimation results imply that the coefficient of the public-private nexus is statistically significant at a 10 per cent level of significance. The magnitude of the coefficient of public-private nexus is 0.164. This implies that *ceteris paribus*, one percent increase in the score of public-private nexus leads to a 16% change in women's progressive education.

The magnitude of the coefficient of public-private nexus is 0.164. This implies that *ceteris paribus*, a one percent increase in the score of public-private nexus leads to a 16% change in women's progressive education. The study finding is consistent with the study conducted by Mwiya, Bwalya, Siachinji, Sikombe, Chanda, & Chawala (2017), who studied higher education quality and student satisfaction nexus: evidence from Zambia. Their study findings revealed that  $R=0.141$ ;  $R\text{ Square} = 0.020$ ; Adjusted  $R\text{ Square}$  of 0.17, and  $F\text{-Statistic}$  of 6.303\*\*. Similarly, Koigi *et al.* (2018), who conducted a study aimed at exploring the influence of university partnerships and collaborations on the performance excellence of universities in Kenya, found bivariate regression results, which indicated that collaboration and partnership explain approximately 28.3% of the variations in university performance.

The overall regression results on progressive education also show that group work, lecturers as facilitators, corporate social responsibility and practical relevance contribute 93 per cent change in women's progressive education with a p-value of 0.0000. This implies that there is a statistically significant relationship between the study indicators. The results revealed that group work enhances students' performance by 30%, while lecturers as facilitators enhance students' performance by 25%. The study results also show that corporate social responsibility, 23% and practical relevance, 23%) and women's progressive education.

## 6. Conclusion and Recommendations

The study recommends synergistic- quadripartite partnerships with industry partners to enhance the public-private nexus. This will inculcate a culture of creativity and innovation while embracing change and promoting collaboration with industry partners so as to enhance progressive education for all women and girls. The nexus between industry and institutions should be strengthened by a clear framework for a memorandum of understanding and agreed collaboration opportunities such as internships, student and staff mobility, and research and innovation opportunities to help in skills transfer and development. This will address the perennial skills mismatch in the labour market.

A major initiative should be taken at the high school level to increase access to education and enhance female students' progression in higher learning institutions. For instance, the female secondary school assistance project is not an option but a vital project which entails funding for quality education, partial scholarship for up to 50% of the school fees, curriculum reforms to be learner-centred, gender perspective and integrated with ICT, developing interactive instructional materials, continuous capacity building of the teachers, and lecturers at all levels, and improvement of institutional infrastructure to create a friendly learning environment for female students at the universities.

Finally, achieving the vision of SDG 4 requires a significant transformation of higher education institutions into lifelong learning institutions. Therefore, promoting a culture of progressive education demands a focus on practical relevance in course content and delivery of the course content, engagement in corporate social responsibility, and engagement in community service/outreach as a success factor. In addition, embracing progressive education implies that lecturers should facilitate learning while giving the learners the opportunity to reinvent their learning approaches and enhance group work through discussions, peer-to-peer learning, and continuous consultation.

Promoting progressive education involves enhancing diverse metacognitive approaches in students' evaluations, and lecturers should be ready to transfer knowledge while using different approaches, such as focusing on the critical awareness of learners and preparing the learners to understand themselves self as thinkers, innovators, a learner and a potential job holder and a job creator, and not a job seeker. The study points out that institutions should make research more attractive for women to enter as a career by unlocking their potential and identifying the women's untapped talents and potential.

### Conflict of Interest Statement

The authors declare no conflict of interest.

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