



Munich Personal RePEc Archive

Women's Access to Post-Secondary Education and Structural Inequalities

Alnaa, Samuel Erasmus and Matey, Juabin

Bolgatanga Technical University, Bolgatanga Technical University

4 May 2023

Online at <https://mpra.ub.uni-muenchen.de/118327/>
MPRA Paper No. 118327, posted 25 Aug 2023 07:37 UTC

Women's Access To Post-Secondary Education And Structural Inequalities

Abstract

UN Sustainable Development Goal No.5 urges the attainment of gender equality and women empowerment by 2030. This has intensified the fight for gender parity and female empowerment in Africa with some successes. Despite this, changes in Ghana's educational system have not dispelled the widespread belief that men are better equipped for careers. This is especially in the technical and vocational fields. This misconception has hampered disadvantaged young women's motivation, making them less likely to pursue careers in technical and vocational education and training (TVET). Entrenchments of gendered divisions in higher education and the labour market contribute to structural inequality in society. This study looks at women's access to post-secondary education and structural inequalities. Additionally, the article updates recent changes in the ratio of female students enrolled in university programs and employment statistics in Ghana. The paper argues that although there are improvements in female enrolment numbers in post-secondary institutions, there is a need for a deliberate policy to increase female intake into tertiary institutions, especially technical universities by granting female-favoured scholarships and opening more online/distance learning platforms for degree programs as well as services to support online enrolment. Employment opportunities should favour the female for a deepening supplementary role at all levels of their participation. Besides, to encourage women gradually shift from conventional roles, it is necessary to invest in their human capital.

Keywords: Enrolment; Female employment; Women's access to education; Universities.

Introduction

Throughout the last decade, female education and empowerment have increasingly been prioritized in sub-Saharan Africa, partly in fulfilment of the UN Sustainable Development Goal No. 5 which seeks to achieve gender equality in education and empowerment in all structures of the global economy (United Nations Educational, Scientific, and Cultural Organisation [UNESCO], 2022; UN Women, 2022; Twum & Dome, 2022). Ideally, women with higher educational attainments have more employment options. In their study, Yousefy and Baratali (2011) found that women's educational attainment and economic advantage positively correlate with their employment and career advancement.

Inadequate accessibility to post-secondary education of women has limited their career options as the skills and opportunities available to them do not replicate those on offer to their male counterparts (Calvo, 2012). This devalues and undermines women's contributions to the overall well-being of society (Calvo, 2012; Matin & Barnard, 2013). In Ghana, for example, the tertiary education gender parity index (GPI) stood at 0.90 in 2020 [see Figure 1] (unfavourable to the female). Female enrolment in tertiary institutions lagged their male counterparts by a margin of 14.84 percent (42:58%) in 2020, highlighting the need for reforms to increase enrolment in Ghana's higher learning institutions (www.thebusiness24online.net). An Afrobarometre survey conducted in Ghana in 2022 revealed that women have limited access (only 13%) to post-secondary education as compared to their male colleagues [24%] (Twum & Dome, 2022). This works against women's ability to seek and secure decent job opportunities which leads to economic independence.

This paper scrutinises the challenges and facilitators that Ghanaian women encounter as they attempt to access higher education. The sections below explore historical legacies and philosophical underpinnings of education in Ghana as well as male dominance alongside societal expectations of modern-day women roles while also examining current initiatives,

hindrances to their success and the enablers that can support women to be accepted and visible in tertiary education.

Philosophical Underpinnings of Education in Ghana

We follow the work of Adjei (2018) to situate the theoretical and practical foundations of Ghanaian education tracing to works undertaken by Kwame Nkrumah in the early 1940s. Nkrumah emphasized the importance of the connection between education and culture as a means of decolonization, with the goal of uncovering the African intellect. For Nkrumah, there must be an unassailable link between theoretical knowledge and practical experience. It is the goal of education, according to Nkrumah (1941 & 1943) to bring students into the "fullest and most fruitful relationship with the culture and ideals of the society in which [they] find [themselves], thereby fitting [them] for the struggle of life" (Education as exposure to prepare an individual for participating efficiently in the activities of life). Nkrumah's prior position, presented in "Education and Nationalism in Africa," was that education is the most effective tool for the maintenance and development of cultural traditions, and that colonial education in West Africa opposes this purpose.

Nkrumah's staunch support for hands-on learning combined with Ghanaian tradition inspired the creation of technical and vocational education and training (TVET) to supply on-the-job training that may lead to self-employment. And so, in 1951, Nkrumah unveiled the Accelerated growth Plan for Education, which became an icon of national rehabilitation and growth. The plan's stated goal was to expand equal access regardless of gender to higher education across the country. A college of technology was founded in Kumasi in 1951 to provide education in the fields of civil, mechanical, and electrical engineering to a wide range of students. In 1963, this institution morphed into what is now known as Kwame Nkrumah University of Science and Technology (KNUST). Following its implementation, the plan prioritized technical and vocational education and training by establishing four secondary-technical schools in 1952 and a fifth in 1956. By the end of 1963, Accra, Kumasi, and Takoradi had all received Polytechnic status to meet the growing demand for skilled middle-level workers in the country.

There have been numerous added voices down the line ever since Nkrumah's initiative. For instance, the Ghana News Agency (GNA) reports that "there is an urgent need for young girls and women to embrace TVET to improve their livelihoods by acquiring employable skills in order to help eliminate gender disparities in TVET in Ghana" (2022). Identifying with GNA reports, Farm Radio International (2022) and Amoamah et al. (2016) argue that increasing female enrolment in technical and vocational education and training (TVET) is an important step towards ending the high rates of unemployment and underemployment among Ghana's young women. To guarantee that women participate and succeed by taking advantage of possibilities in these high-growth industries, the cultural norm that the majority of those enrolled in public TVET are men must be modified.

To ensure women have access to equitable employment opportunities and to boost economic growth, it is crucial to invest in their formal education, through improved access to higher and post-secondary education. Women with a higher level of education have improved cognitive and non-cognitive abilities (UNESCO, 2021), which raise their level of productivity, and make them more likely to continue learning throughout their lives. Even in personal health, a study (Organisation of Economic Cooperation and Development [OECD], 2011) has shown a correlation between higher rates of female education and improved overall health. Increased funding for pre-school programs in low-income nations has also been associated with higher

educational levels among women. Further statistics show, as cited by Mlshel (2022) from the 2021 Population and Housing Census (PHC) in Ghana, that the total ratio of female to male enrolment in higher education is 5.6 million:15.2 million.

In a separate assessment by the Ghana National Accreditation Board (NAB), 254,237 male and 186,288 female students enrolled in tertiary institutions in Ghana during the 2020 academic year (www.thebusinessonline.net). It is important to add that the disparity of women’s access to post-secondary education is much noticeable in Ghana’s public tertiary institutions, compared to the private post-secondary institutions with a respective disparity representation of 40 percent to 42 percent (Christel, 2020).

Women’s Access to Higher Education

As seen from Figure 1, women's access to higher education, although improving, has nevertheless, experienced challenge. Gender differences and lack of access to higher education by learners, especially from disadvantaged backgrounds are still evident, despite the Ministry of Education’s effort to close the gender gap in literacy by creating the Girls' Education Unit under the Ghana Education Service (Campaign for Female Education [CAMFED] Ghana, 2012) along with stakeholders’ repeal of gender-unfriendly policies (Christel, 2020) such as early marriages, female genital mutilation, child labour, etc.

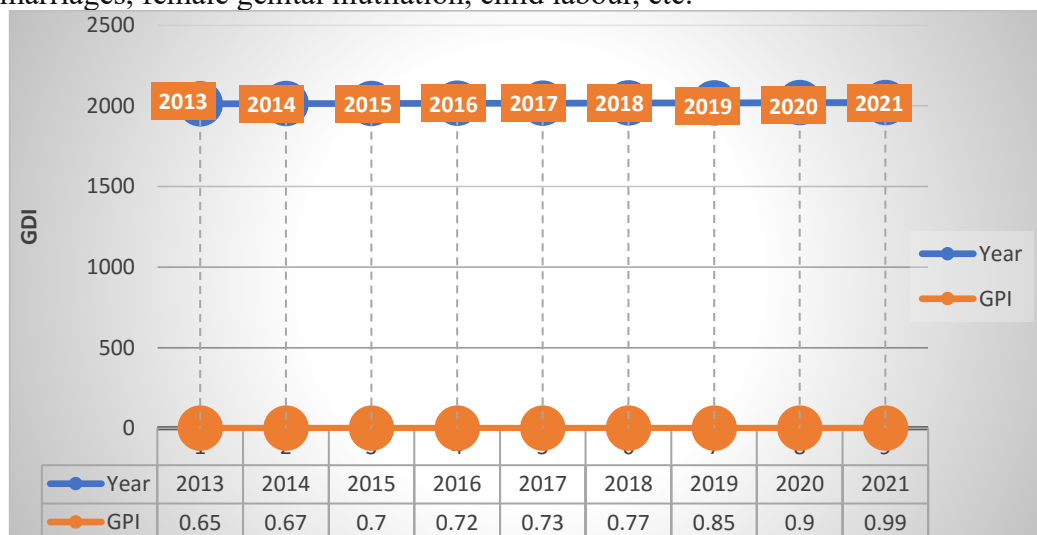


Figure 1: Gender Parity Index (GPI) in Tertiary Institutions in Ghana

Source: World Bank Data (2021)

Figure 1 is a graphical representation of the parity index for enrolment in tertiary institutions in Ghana spanning 2013 to 2021 (World Bank, 2021). Although the expected high parity index in favour of women in tertiary education, especially in technical education has not been fully achieved, some perennial positive progress is witnessed throughout the period under consideration.

In an earlier report by UNESCO (2012), male dominance over their female counterparts in education dates to ancient time. This is because of traditional society's unexplained preference for the male over their female counterparts, a practice that widens gender disparities worldwide. As Papadopoulos and Radakovich (2005) revealed, the situation gets worst at higher education, since the crude assumption is that tertiary education is not a female domain. As a result, women have had a long-standing challenge in accessing higher education although improvements are made as the years passed by.

Enrolment Statistics in Selected Ghanaian Public Universities for the 2020/2021 Academic Year

The University of Ghana, Legon (UGL), had a total enrolment of 40,342, of which 56.7 percent was male as opposed to 43.3 percent female (www.ghanaweb.com). While there were 29,278 male students at the Kwame Nkrumah University of Science and Technology (KNUST), 16,360 were female (about 36%). Another confirmatory finding about the disparity was that, in 2020, out of a total enrolment of 57,909 students, women made up 43 percent of the University of Cape Coast's (UCC) enrolment population, while the remaining went to male. Statistics from the University of Education, Winneba, showed that of the 61,836 students enrolled, 61 percent were men (www.ghanaweb.com). This continues to prove how underrepresented women are in the universities.

Table 1: Enrolment of Male and Female into Technical Universities for the 2019/2020 Academic Year

Programme Type	Male	Female	Total
Short Cycle Tertiary Programmes	29,334	19,306	48,640
Bachelor/Equivalent	4,920	2,984	7,904
Masters/Equivalent	49	17	66
Total	34,303	22,307	56,610

Source: Ghana Tertiary Education Commission [GTEC] Data (2021)

Only 39.4 percent of the 56,610 students admitted to Ghanaian Technical Universities for the 2019/2020 academic year were female. The percentage of women with bachelor's and master's degrees combined was a paltry 5.3 percent. As shown in Table 1, male students outnumbered their female counterparts at all levels of learning.

It is well acknowledged that TVET is one of the most effective means by which young women can break the cycle of poverty that has plagued their families for generations. Societies that fail to recognize and value women's contributions often fall behind economically and socially. And so, one of the reasons to undertake this qualitative study was to emphasise the disparities that existed long before now and still prevail between males and females in all endeavours of society. One area is the lagging employment numbers of women that could be resolved through improved admissions into Technical Universities to learn self-employable skills such as masonry, carpentry, textiles, leather works, domestic electrical engineering, IT repair, auto mechanics, etc. (Farm Radio International [FRI], 2021).

When more women in a Ghana acquire vocational education, workforce is more diverged and well-rounded. Providing women with the scholarships and tools they need to enter the workforce through TVET increases the family's disposable income, which is a major factor in reducing poverty. Young women who are economically independent are better able to care for their families, especially their children, a role that has historically fallen on women. Through TVET, young women are able to attend schools and trainings alongside their male peers, facilitating their social integration (see FRI, 2021).

Young women can improve their chances of establishing their own businesses and employing others by acquiring technical and vocational education and training (TVET) in fields such as engineering, carpentry, sewing, etc. Young women can have the knowledge and skills, as well as the self-assurance to make decisions about their careers and personal life, when they participate in TVET courses and gain employment. Graduates of Ghana's technical and vocational education (TVET) programs who find work in the informal or formal economy contribute to the country's efforts to combat high unemployment and boost economic activity

and GDP development. When women have equal access to and control over economic resources, this becomes much more feasible. Companies that actively recruit and retain women in traditionally male-dominated fields report higher profits, a lower risk profile, and a more positive influence on their local communities. Gender parity improves and future generations benefit from increased output thanks to women's education and employment (FRI, 2021).

Disciplinary Orientation

Women's disciplinary orientation (choices) in tertiary institutions differs from men's as reflected in their application for admissions records. While some think of physiological factors (Schriebinger, 2014; Wrigley-Asante, Ackah & Frimpong, 2021) as being reasons for differences in programme choices, the position of an earlier study by Breakwell and Beardsel (1992) is that women's disciplinary choices are partly decided by socio-cultural factors. This is corroborated by research carried by Christel (2020) who explained among others the underpinnings of the woman as a childbearing and home-maintenance "person" as well as actively involved in commercial activities. Yin et al. (2021; Yin, 2022) found that for women, the most important programme choice determinants were intrinsic motivation, familiarity with the field, the ability to strike a work-life balance, and the satisfaction that comes from accomplishing goals. Socialization into gender roles, parental expectations, instructor attitudes, the stereotyping of academic disciplines, and the skewed professional opportunities for women all play a part (Mutekwe, Modiba & Maphosa, 2011). As of 2019, the programme choices by males and females in Ghanaian universities were recorded as indicated in Figure 2.

Several initiatives have been triggered by UNESCO following the identification of certain challenges prevalent in the woman's struggle to liberate herself educationally, including focusing on advancing women's status and equity in higher education, as well as expanding access to safe and high-quality post-secondary education across the globe (Christiana, 2016). These initiatives have been quite fruitful, given the increased enrolment figures in courses and disciplines that originally were regarded 'no go areas' for females.

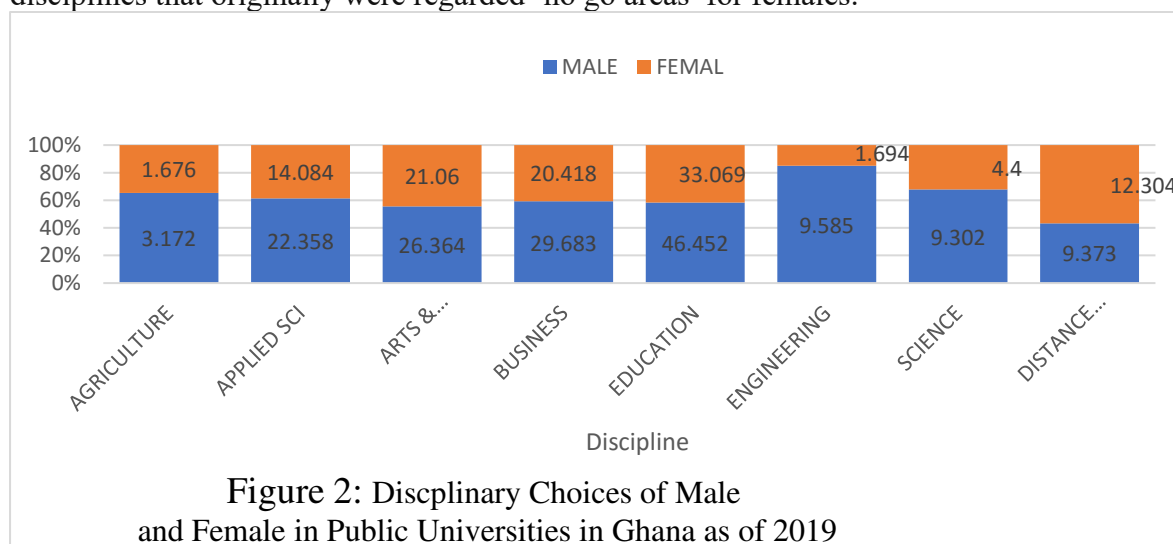


Figure 2: Disciplinary Choices of Male and Female in Public Universities in Ghana as of 2019

Source: Sasu, Statistica (2020)

From Figure 2, Education and Business are the two most popular majors in Ghana's universities as portrayed by the data. Reporting from this, there are more male students across all programmes. Education majors attracted the biggest number of female students (33,069), followed by those in the arts and social sciences (21,060) with business taking the third position.

Facilitators to Women Participating in Greater Numbers at Tertiary Level

In terms of enrolment in distance learning, women have topped with 12,304. This is understood, home chores and learning could be well combined as against regular enrolments that need physical appearance on university campuses. Not only that, BestColleges [BCs] (2022), an educational platform, found that many women prefer online and distance education over traditional classroom settings because it allows them to better juggle their personal and professional responsibilities. When it comes to online and remote learning, women continue to be the clear winners. A researcher in the field of women's studies, Cheris Kramarae (n.d) coined the term "third shift" to describe the rise of online and distance higher education among female students (BCs, 2022). He says, after working all day, many women return home to complete a "second shift" in the home. The third shift consists of logging on to an online learning platform after a long day of work. The "less disruptive to the home environment" argument is accepted by many women who pursue university degrees via distant learning.

Access to University Education and Women's participation and inclinations towards certain fields of study in higher education are hampered by several circumstances (Chanana, 2000) Some of these problems originate from a lack of adequate post-secondary institutions and a poorly functioning system for delivering education, both of which contribute to an environment where basic physical amenities are unavailable. Due to the sexism inherent in the system's approach to providing services, it is not a good fit for female students (Chanana, 2000). This results in numerous issues, including the dearth of women tutors, a lack of counselling for discipline and career alternatives, and inadequate facilities (such as restrooms, common areas, and hostels) for female students. Gender stereotypes in the lecture halls, sexual harassment by professors and administrators, a dearth of positive role models in academia, and other similar phenomena are all examples of the social elements of institutional setbacks.

Women's access to higher education is nevertheless hindered by cultural norms, ingrained social roles, and the perception that such opportunities are outside of their sphere of influence (Christel, 2020). One of the most common and well-known obstacles is a lack of financial support from family members. the absence of positive role models in the home, the pressure to choose between a dowry and a college education (prevalent in remote and disadvantaged settlements), the general belief that schooling serves little practical purpose in the workplace, etc (Chanana, 2000).

Gender Equality in Higher Education and the Labour Market

Women's empowerment can be characterized as an increase in their access to the components of development, such as healthcare, education, economic opportunity through employment opportunities, legal protections, and political representation. Duflo (2012) argues that empowering women and economic growth/development are mutually beneficial, but the former is especially important since it can help reduce gender disparities that have persisted despite progress in the last decade. And so, one of the questions that this research answers theoretically is, does this mean that a pull of either of women's empowerment or economic growth/development would initiate a positive feedback loop?

Table 2: Employment Statistics of Male and Female in Ghana (2020-2022)

Year	EM- Male	EM- Female	UNE- Male	UNE- Female
2010	5361	4761	278.7	296.8
2011	5478	4850	305.8	306.4
2012	5589	4933	339.7	321.3

2013	5701	5017	373.6	335.3
2014	5812	5099	410.7	350.8
2015	5925	5181	446.9	364.8
2016	6162	5381	362.8	312.5
2017	6408	5589	272.5	256.0
2018	6556	5735	282.3	266.7
2019	6706	5885	291.2	276.7
2020	6789	5954	319.2	302.3
2021	6975	6082	327	317.6
2022	7165	6258	322.8	312.8

Source: Statista (2022)

Note: EM: Employment

UNE: Unemployment

Table 2 relates to the employment statistics of females side by side their male counterparts between 2010 and 2022 in Ghana. No doubt, throughout the period under study females are structurally marginalised whether in terms of admissions into tertiary institutions or into employment. An estimated 323,000 males were unemployed in 2022 in Ghana. However, it was predicted that the number of unemployed women would be little lower, coming in at around 313,000. Since 2010, there has been some variation in the number of adults of working age who are unemployed. The unemployment rate in Ghana peaked at approximately 7% in 2015 (Sasu, 2022).

Although there has been some improvement in women's employment rates since 2010, there is still a significant gender disparity in the labor force. According to Ostry, Alvarez, Espinoza, and Papageorgiou (2018), no high- or middle-income country has succeeded in closing the gender gap to below 7 percent. The gender wage gap expands as the discrepancy in college enrolment between men and women persists.

The economy stands to gain by hiring more women into the workforce than from hiring more men. As Ostry et al. (2018) point out, this is because the elasticity of substitution between women and men in production is clearly minimal. This gender gap has a substantial economic impact since it reduces productivity and slows growth. Ostry et al. (2018) demonstrate that the costs of tax distortions, discrimination, and social and cultural factors that discourage women from entering the workforce are higher than previously estimated, but the benefits of reducing these disparities are even greater. Therefore, it is imperative that policymakers work quickly to remove these roadblocks.

Women's Participation in Public and Decision Making at Faculty Level

Higher levels of education relate to women's leadership, ability to actively participate in public life, and decision-making skills (UNESCO, 2021). Due to persistent income disparities between the sexes, women are underrepresented in higher education decision-making organizations and at the senior faculty level in many countries. Despite increased employment in these professions, they remain disproportionately underrepresented in STEM (science, technology, engineering, and mathematics) fields. Furthermore, a better representation of women in academia is not due to an increase in the number of women enrolling in higher education. Furthermore, a study (UNESCO, 2021) revealed that women in higher education face discrimination, such as glass ceilings, gender salary disparities, and sexual harassment and assault. Gender equity progress evaluations must consider concerns such as these, as well as the intricacies connected with demographic disparities such as colour, sexual identity, and women's socioeconomic status (UNESCO, 2021).

Women in Faculty Leadership

Even though there are good statistics about women's access to higher education, some barriers remain for women who wish to hold important academic roles in universities, participate in relevant research, or lead. Another revelation made by UNESCO (2021) is that women are more likely than men to work in postsecondary education but are disproportionately represented in tertiary education. The same holds true for educational policymaking and school administration. There is still an underrepresentation of women in higher education decision-making bodies and senior faculty positions in many nations (UNESCO, 2021).

A valid assumption is that women, after they graduate, are also able to proceed and study for higher degrees that would enable them to occupy most academic positions in universities, be involved with relevant research, take on leadership roles, and even earn competitive and comparable wages. Yet, as it will be shown in this section, this has not been the case. The failure of universities, for instance, to recruit, retain, and promote women academics has increasingly raised attention.

Women, Governance, and Politics in Ghana

According to ABANTU (Means People), a non-governmental organization, women have gotten more involved with local government to bring government closer to the people throughout time, although they have fallen short of the 30% UN mandated minimum level of representation in assemblies. Women's empowerment and gender equality are measured in part by their ability to participate fully and equally in political and electoral processes (Kpogli, 2023).

Female Advantage Analysis

The analysis of the gender gap in labour market outcome has received much more attention than the female advantage in educational attainment which is comparatively understudied. The forces that led women to accumulate human capital faster than men during the post-1975 period and outperform them in higher education are still relatively well understood (Chiappori, Iyigun, & Weiss, 2009; Fortin, Oreopoulos, & Phipps, 2015; Bossavie & Kanenin, 2018).

This gender revolution has been facilitated by a wide range of variables and regulatory developments. Among women, for example, contraceptive methods have made it possible to postpone childbearing (Bailey, 2006). The development of antidiscrimination laws and regulations prohibited gender discrimination in schools and the workplace. A rise in the demand for educated workers, as well as an increase in the demand for women's labor, for instance, as the service sector expands, have all changed the qualifications of women (Becker, Hubbard, & Murphy, 2010b).

Labour Market Inequalities

The choice of degrees and fields of study explains between 15 and 25 percent of the male-female earnings gap among higher education graduates (Bobbitt-Zeher, 2007). Male students continue to choose higher-paying degrees and receive higher earnings after graduation than women (Conger & Dickson, 2017). Compared to other historically disadvantaged groups, women experience overwhelming success in higher education. The reasons for that

accomplishment, however, are still mostly unknown and haven't regularly or clearly translated into greater socioeconomic attainment or success on the job market. Given that women's educational successes have not translated into socioeconomic achievement, the "female advantage" may be a myth in this regard (Niemi, 2017). This is partly because broader economic, social, and political responses have stifled gains among a population of women who are becoming more and more educated (Williams & Wolniak, 2021). Gender segregation persists despite growing female involvement in the labor force and educational sectors. Horizontal gender segregation, or the disproportionate concentration of men or women in specific occupational sectors, has been shown to be more pronounced and consistent over time (Charles, 2011; UNESCO, 2021). This is in contrast to vertical gender segregation.

Factors that Impede Female Educational Advancement

Many young girls in Ghana, especially those living in rural areas, want to finish school, but several obstacles prevent them from doing so, leading to dropouts. These elements have been divided into several categories. For instance, Lungwangwa, Kelly, and Sililo (2005) classified them as socio-cultural, socio-economic, political, and institutional aspects (see also Odaga & Heneveld, 1995). The four main elements that influence girls' education in Nigeria, according to Randell & Gergel (2009), are macro-level factors, legal and policy considerations, school-related factors, and socio-cultural factors. Poverty, insufficient educational opportunities, HIV/AIDS, persistent economic reliance on former colonial powers, and resource inequities between urban and rural areas are the macro-level issues.

Lack of government funding for schools and instructors, lack of free basic education, and lack of financial incentives for girls' education are the legal and policy factors. They define school-related variables such as curricula that perpetuate traditional gender stereotypes. According to Bista (2004) and Houston (2003), societal and cultural beliefs, behaviours, and attitudes frequently disadvantage girls in their pursuit of education when compared to boys. Negative ideas about girls' responsibilities and the value of education, early marriage, teen pregnancy, and gender-based violence are among the socio-cultural impediments to girls' involvement in school that have been highlighted.

Methods

This article is qualitative in nature, although it makes use of secondary data on tertiary enrolment statistics, programme preference by the female and employment figures, etc, to analyze gender differences in educational and program selections. Women's enrolment rates were compared to those of men using secondary sources such the World Bank's Development Indicators, Statista, and other websites the GhanaWeb, etc, making it semi-quantitative.

Conclusion and Recommendations

The issue of female structural marginalisation has been around for a while, but suddenly they seem much more pressing. There has been numerous calls on closing the inequality gap as a vanguard of policy analysis for years, shedding light on the financial toll of inequality and proposing solutions. The research is clear: when women and men are not treated equally at any level of the global structure, economies suffer. The case for greater gender equality is more powerful now that we have all the facts. Therefore, this study set out to assess women's access to post-secondary education, especially Ghanaian tertiary institutions, as well as explore issues and perspectives in the labour market. Enrolment numbers were used in this research, although the data were not enough to fully capture changes.

There are highlights for critical need to create a database in the academic sector that juxtapose opportunities, responsibilities, and benefits vis-a-vis males and females. Gathering

trustworthy quantitative and qualitative data, coordinating, disseminating to relevant stakeholders, and managing are all parts of this process is one step into the solution. Together with this quantitative data, a qualitative analysis of the situation can help pinpoint the push and pull forces, social groupings, and geographical areas where women lag in higher education and offer solutions to close the gender gap. As a result, micro-studies could be encouraged to contribute to the making of policies and their subsequent implementation on improved access to post-secondary education that has the strength to close the structural inequality.

Women with advanced degrees are still underrepresented in the scientific community, albeit to a lower level. This prejudice must be eradicated, and it is possible that funding organisations may single out the tertiary education as a key location for this initiative, especially TVET institutions. To effectively create, implement, and manage state policies aimed at neutralising social role expectations, it is necessary to first understand these expectations. There is need for a shift in the structure, culture, and functioning of tertiary institutions to make them more welcoming to female students. Besides, the lagging employment numbers of women could be resolved through improved admissions into Technical Universities to learn self-employable skills such as masonry, carpentry, textiles, leather works, domestic electrical engineering, IT repair, auto mechanics,

Without targeted efforts to increase the number of women enrolling in and working in higher education, it will be difficult to achieve the much talked about goal of gender parity. If this does not happen, it is not a stretch to think that women's advancement in academia will really be hampered.

REFERENCES

REFERENCES

- Adjei, M.O. (2018). Educating Africans: Perspectives of Ghanaian philosophers. *Up-Journals*, 19. <https://doi.org/10.25159/2413-3086/5277>
- Amoamah M. O., Brew, E.M., Ampiaaw, R.E., & Dadzie, J. (2016). Gender inequality in TVET institutions-bridging the gap: The case of Accra Polytechnic. *Mathematical Theory and Modelling*, 6(1), 27-35.
<https://www.iiste.org/Journals/index.php/MTM/article/viewFile/28229/28975>
- Bailey, R. (2006). Physical education and sport in schools: A review of benefits and outcomes. *Journal of School Health*, 76, 397-401.
<https://doi.org/10.1111/j.1746-1561.2006.00132.x>
- Becker, G.S., Hubbard, W.H.J., & Murphy, K.M.. (2010b). The market for college graduates and the worldwide boom in higher education of women. *American Economic Review*, 100(2), 229-233. <https://doi.org/10.1257/aer.100.2.229>

- BestColleges (2022, January, 21). Women poised to reap benefits of online education. <https://www.bestcolleges.com/blog/women-online-education/>
- Bista, M.B (2004). Review of research literature on girls' education in Nepal. Kathmandu. UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000138640>
- Bobbitt-Zeher, D. (2007). The gender income gap and the role of education. *sociology of education*, 80(1), 1-22. <https://doi.org/10.1177/003804070708000101>
- Bossavie, L., & Kanenin, O. (2018, January). What explains the gender gap reversal in educational attainment?. Policy Research Working Paper, No. 8303. *World Bank Group*.
<https://documents1.worldbank.org/curated/en/659501516200427470/pdf/What-Explains-the-Gender-Gap-Reversal-in-Educational-Attainment.pdf>
- Breakwell, G. M., & Beardsell, S. (1992). Gender, parental and peer influences upon science attitudes and activities. *Public Understanding of Science*, 1(2), 183-197.
- Calvo, J. (2012). Women's access to higher education. *Global university network for innovation*. UNESCO. <https://www.guninetwork.org/articles/womens-access-higher-education>
- Chanana, K. (2000). Treading the hallowed halls: Women in higher education in India. *Economic and Political Weekly*, 35(12), 1012–1022.
<http://www.jstor.org/stable/4409055>
- Charles, M. (2011). A world of difference: international trends in women's economic status. *Annual Review of Sociology*, 37, 355-371.
- Chiappori, P., Iyigun, M., & Weiss, Y. (2009). Investment in schooling and the marriage market. *American Economic Review*, 99(5), 1689-1713.
- Christel, K. (2020). Gender disparities in Ghana's tertiary education system. *ERIC*, 34-39. New York University <https://files.eric.ed.gov/fulltext/EJ1341788.pdf>
- Commission for Technical and Vocational Education and Training (CTVET). (2021, December). Ghana Technical Vocational Education and Training (TVET) Report 2021. Ministry of Education. <https://ctvet.gov.gh/wp-content/uploads/2022/09/GHANA-TVET-REPORT-2021SIGNED.pdf>
- Conger, D., & Dickson, L. (2017). Gender imbalance in higher education: Insights for college administrators and researchers, research in higher education. Springer. *Association for Institutional Research*, 58(2), 214-230. <https://doi.org/10.1007/s11162-016-9421-3>
- Duflo, E. (2012). Women Empowerment and Economic Development. *Journal of Economic*

Literature, 50(4), 1051-1079. <http://www.jstor.org/stable/23644911>

Fortin, N.M., Oreopoulos, P., & Phipps, S. (2015). Leaving boys behind: Gender disparities in high academic achievement." *Journal of Human Resources*, 50(3), 549-579.

Houston, L.(2003). It is a man's world: Overcoming barriers to female education in Ghana. African Diaspora ISPS, Paper 61. <http://digital.collections.sitedu/African-diaspora-ISP/61>.

Kpogli, B.D. (2023). Increase women's participation, representation in 2023 district level elections - ABANTU for Development. *Modern Ghana*. <https://www.modernghana.com/news/>

Lungwangwa, G., Kelly, M.J., & Sililo, A. (2005). Basic education for some: Factors affecting primary school attendance in Zambia. Lusaka: A study fund on social recovery project

Martin, P., & Barnard, A. (2013). The experience of women in male-dominated occupations: A constructivist grounded theory inquiry. *SA Journal of Industrial Psychology*, 39(2). <https://dx.doi.org/10.4102/sajip.v39i2.1099>

Mlishel, T. (2022, May, 24th). Female enrolment in tertiary education seeing steady progress at Webster University Ghana Campus. <https://www.myjoyonline.com/female-enrollment-in-tertiary-education-seeing-steady-progress-at-webster-university-ghana-campus>

Mutekwe, E., Modiba, M., & Maphosa, C. (2011). Factors affecting female students' career choices and aspirations: A Zimbabwean example. *Journal of Social Sciences*, 29(3), 133-141.

Nkrumah, F. N. (1941). Primitive education in West Africa. *Educational Outlook XV* (2), 87.

Nkrumah, F. N. (1943). Education and nationalism in Africa. *Educational Outlook XVIII* (8), 32-34.

Niemi, N.S. (2017). Degrees of difference: Women, men, and the value of higher education (1st ed.). Routledge. <https://doi.org/10.4324/9781315521817>

Odaga, A., & Heneveld, W. (1995, September). Girls and schools in sub-Saharan Africa. *World Bank Technical Paper No. 298*. <https://documents1.worldbank.org/curated/en/524471468740135955/pdf/multi-page.pdf>

Papadópulos, J., & Radakovich, R. (2005). Comparative study of higher education and gender in Latin America and the Caribbean. http://www.cned.cl/public/Secciones/SeccionRevistaCalidad/doc/52/CSE_res...

Organisation of Economic Cooperation and Development (2011). Report on the gender initiative: Gender equality in education, employment, and entrepreneurship. OECD, <https://www.oecd.org/education/48111145.pdf>

Ostry, J.D., Alvarez, J., Espinoza, R., & Papageorgiou, C. (2018, October). Economic gains from gender inclusion: New mechanisms, new evidence. *International Monetary Fund*. SDN/18/06.

<https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2018/10/09/Economic-Gains-From-Gender-Inc>

Randell, S. K., & Gergel, D. R. (2009). The education of girls in Africa. Opening address presented at the Federation of University Women of Africa Conference, Lagos, Nigeria. Retrieved on August 2, 2013, from www.ifuw.org/fuwa/docs/Education_of_Girls_Africa.pdf

Sasu, D.D. (2022, September, 2nd). Gender distribution of students in public universities in Ghana as of 2019, by program discipline . *Statista*.

<https://www.statista.com/statistics/1180711/gender-distribution-of-students-in-public-universities-in-ghana-by-program/>

Schiebinger, L. (2014). Gendered innovations: harnessing the creative power of sex and gender analysis to discover new ideas and develop new technologies. *A Journal of University-Industry Government Innovation and Entrepreneurship*, 1(9), 1-17

Singhal, R. (2003). Women, Gender, and Development: The evolution of theories and practice. *Psychology and Developing Societies*, 15(2), 165-185.

<https://doi.org/10.1177/097133360301500204>

Thebusiness24online.net (2020, June 1st). Women still behind men in tertiary education enrolment -Analysis.

<https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Women-still-behind-men-in-tertiary-education-enrolment-Analysis-967906>

Twum, M.A.A., & Dome, M.Z. (2022). Amid Persistent Gender Inequalities, Ghanaians Call for Government Action to Bridge the Gaps. *Afrobarometer*, Centre for Democratic Development. Afrobarometer Dispatch No. 573.

<https://www.afrobarometer.org/publication/ad573-amid-persistent-gender-inequalities-ghanaians-call-for-government-action-to-bridge-the-gaps/>

UNESCO. (2022). Education in Africa: Placing equity at the heart of policy.

<https://unesdoc.unesco.org/ark:/48223/pf0000384497>

UNESCO (2012). World atlas of gender equality in education.

<http://unesdoc.unesco.org/images/0021/002155/215522E.pdf>

Williams, T. M., & Wolniak, G. C. (2021). Unpacking the “Female advantage” in the career

and economic impacts of college. In N. S. Niemi & M. B. Weaver-Hightower (Eds.), *The Wiley Handbook of Gender Equity in Higher Education*, 7-28. *John Wiley & Sons*.

Women still behind men in tertiary education enrolment -Analysis .(2020). GhanaWeb. <https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Women-still-behind-men-in-tertiary-education-enrolment-Analysis-967906>

World Bank. (2021). School enrolment, tertiary (gross), gender parity index (GPI). <https://data.worldbank.org/indicator/SE.ENR.TERT.FM.ZS?locations=GH>

Wrigley-Asante, C., Ackah, C.G., & Frimpong, L.K. (2022). Career aspirations and influencing factors among male and female students studying Science Technology Engineering and Mathematics (STEM) subjects in Ghana. *Ghana Journal of Geography*, 14(1), 85-103. <https://dx.doi.org/10.4314/gjg.v14i1.5>

Yin, K., Yang, L., Zhang, R., Zheng, D., Wilkes, M.S., & Lai, Y. (2021). Gender differences and influencing factors in specialty choices: Findings from one medical school in China. *Front Public Health*. <https://doi.org/10.3389/fpubh.2021.648612>

Yin, Y. (2022). Missing Women: A quantitative analysis. https://yongkunyin.com/Documents/JMP_Yin.pdf