Gender Inequalities in Higher Education in Tanzania: Investigating the Influence of Parents' Socioeconomic Status

Patrick Severine Kavenuke[1] & Mjege Kinyota[2]
[1&2]Dar es Salaam University College of Education, University of Dar es Salaam
Corresponding author's email[1]: patrickkavenuke@gmail.com

Abstract

This study investigated the extent to which gender inequality manifests in higher education in Tanzania. Furthermore, through a gendered lens, the study investigated the influence of parents' socioeconomic status on gender inequality among students who major in STEM and teacher education programmes. The study used a sample of 1714 students across four higher education institutions. It was found that gender is an aspect that forms inequality. For instance, the study revealed that gender differences were reflected in our sample, where female students were underrepresented in both STEM majors and teacher education majors. Also, parents' education, occupation, educational background (in STEM), and income are some of the socioeconomic statuses that reinforce gender inequality. Finally, the implications for future research and policy are discussed.

Keywords: *femininity; gender inequality; higher education; masculinity; meritocracy*

DOI: https://dx.doi.org/10.56279/ped.v41i2.3

Introduction

In recent years, there has been a notable surge in higher education enrolment across the globe, raising concerns about the impact of this expansion on gender disparity in academia (Morley et al., 2009). Various studies (see, for example, Bhopal & Maylor, 2014; Boliver, 2016; Detourbe & Goastellec, 2018) have highlighted the emergence of heightened competition and stratification within higher education, where factors such as students' gender, socioeconomic background, social class, race, and ethnicity play pivotal roles in shaping disparities in access. This phenomenon has prompted higher education institutions worldwide to grapple with the imperative of achieving gender parity among their student populations (Bhopal & Maylor, 2014; Marginson, 2016; Mountford-Zimdars & Sabbagh, 2013; Yao et al., 2015). Consequently, the inadvertent reproduction of gender disparities resulting from increased enrolments has often gone

unnoticed, thereby underscoring the urgency and significance of the present study. Globally, the widening participation in higher education has undeniably increased access for students. For instance, Chien et al. (2017) reported a staggering enrolment figure of 210,245,000 in global higher education by 2013. While this surge is advantageous for countries with high participation rates, those with lower rates find themselves in competition for limited quotas. This tendency potentially exacerbates gender disadvantages among less privileged students. Morley et al. (2009) observed that men from wealthier families enjoyed better prospects of entering higher education compared to women. This observation highlights the need for nuanced considerations beyond meritocratic principles. The ongoing debate centres on whether higher education policies should prioritise meritocratic principles or adopt targeted strategies to uplift marginalised groups.

Meritocracy, a fundamental principle in social organisations (Castilla & Benard, 2010; Duru-bellat & Tenret, 2012; Meroe, 2014), particularly in democratic countries like Tanzania, emphasises equality, equity, and fairness. Tanzania's government policy documents, such as the Arusha Declaration of 1967 and the Tanzania Education and Training Policy of 1995, strongly advocate for meritocracy to ensure equality and equity in educational opportunities. In particular, the Arusha Declaration, outlined in 1967, championed principles emphasising the equality of all human beings, the entitlement of every individual to a just return for their labour, and the government's commitment to providing equal opportunity to both men and women irrespective of their religion or social status (Nyerere, 1968). While these policies were crafted with the laudable goal of fostering meritocratic ideals that have played a role in fortifying the peace currently experienced in Tanzania, they have inadvertently obscured the underlying existence of gender disparities within higher education institutions.

Study Purpose

Despite the earnest pursuit of meritocracy within higher education institutions, various forms of social divisions, including but not limited to gender, social class, race, family income, and ethnicity, have endured as recurrent themes in higher education literature. Concerning gender, gender gaps have persisted in many circumstances despite the scientific proof that males and females have similar cognitive abilities (Hyde & Linn, 2006). For instance, globally, in higher education, females have been consistently underrepresented in Science, Technology, Engineering and Mathematics (STEM) (Ehrenberg, 2010; Fischer, 2017; Sassler et al., 2016; Smeding, 2012). In the Tanzanian context, only a few studies have examined issues of gender disparities in higher education. For instance, Morley et al. (2009) explored how social inequalities, including gender, prevailed in one public and one private university in Tanzania.

Given that few studies have been conducted in the Tanzania context on social inequalities, including how gender prevails in higher education in Tanzania (e.g. Morley et al., 2009), this present study was deemed essential to add literature on gender inequalities in relation to parents' socioeconomic status in Tanzanian higher

education. In that regard, through a gendered lens, this study aimed to investigate the extent to which gender is a form of social inequality in higher education in Tanzania, particularly in teacher education programmes and STEM programmes. Also, the study investigated the influence of parents' socioeconomic status on gender inequalities in higher education in Tanzania. In particular, this study was guided by the following research questions:

i. To what extent is gender a form of social inequality in higher education in Tanzania?

ii. How does parents' socioeconomic status influence gender inequalities in higher education in Tanzania?

Femininity and Masculinity: A Conceptual Framework

Femininity and masculinity provide a framework for understanding why a certain gender may be underrepresented in higher education in its entirety, as well as in STEM programmes. Femininity and masculinity are associated with the cultural construction of gender roles as well as STEM occupations. The femininity and masculinity framework represents two types of personality traits. While femininity is associated with communal behaviours such as nurturance, supportiveness, gentleness, humility, friendliness, and being empathetic and unselfish, masculinity tends to be associated with agentic behaviours such as being skilful, independent, competent and instrumental (Pozzebon et al., 2015; Strough et al., 2007; Weisgram et al., 2011). Additionally, the femininity and masculinity framework has been linked with biological sex, where femininity is associated with females while masculinity is considered to represent males' personality traits (Banchefsky et al., 2016; Krahé, 2018; Leavy & Ross, 2009; Simon et al., 2017; Weisgram et al., 2011).

Concerning gender, two conceptions are identified. On the one hand, femininity and masculinity are viewed as two opposite poles of personality traits. In other words, an individual can either possess femininity or masculinity traits (Ogletree et al., 2014; Strough et al., 2007). Females are said to possess feminine personality traits, while males possess masculine traits (Ogletree et al., 2014; Pozzebon et al., 2015; Strough et al., 2007). According to Weisgram et al. (2011), the core features of masculinity have remained unchanging, even though social roles have changed over the years. On the other hand, other scholars have critiqued the treatment of femininity and masculinity as two opposite poles of personality traits. Instead, femininity and masculinity are perceived as traits that vary between individuals irrespective of gender (Laurie, 2011; Mehta & Dementieva, 2017; Savin-Williams et al., 2016). By this conception, males and females are capable of flexibly performing both femininity and masculinity to

meet task demands as well as satisfying social pressures (Mehta & Dementieva, 2017).

Furthermore, the femininity and masculinity framework has been associated with career choice (Pozzebon et al., 2015; Simon et al., 2017). For example, while femininity (females) is associated with "people-oriented" careers such as nursing and teaching, masculinity (males) is linked to "things-related" to careers such as science and technology studies, engineering and other natural science disciplines (Mehta & Dementieva, 2017; Pozzebon et al., 2015; Simon et al., 2017, p. 292). Additionally, it has been observed that some STEM fields of study and subjects such as engineering (Simon et al., 2017) and physics (Francis et al., 2017) are compatible with the cultural and social construction of masculinity. The mismatch between femininity and some STEM fields of study and subjects is what Simon et al. (2017, p. 385) have referred to as a "chilly climate" for females. It somewhat explains females' underrepresentation in higher education programmes, particularly in STEM.

In relation to the socialisation process — the main engine driving the construction of femininity and masculinity is that from early ages, males are encouraged to act and think scientifically (Simon et al., 2017). As a consequence, females experience lower belonging to STEM compared to males. Additionally, the framing of femininity and masculinity in relation to STEM contributes to negative stereotypes about females in STEM. For instance, according to Carli et al. (2016), females are usually seen as lacking the qualities of scientists. Also, femininity and masculinity influence gender identity. Settles et al. (2016) argue that the femininity and masculinity framework influences the importance that an individual places on his/her gender when defining one's self-concepts and beliefs about how another gender positively views the other. Given females' gender roles that are usually in conflict with the cultural construction of STEM, females feel excluded from the field. With this in mind, the presence of role models is seen as an essential tool for combating these feelings of exclusion among females in higher education in general and mainly those majoring in STEM.

Moreover, in relation to the femininity and masculinity framework, Sahin (2014) has observed that in many societies, females are denied the right to education. If they happen to get it, the majority of them end up with incomplete schooling. Thus, many societies offer schooling opportunities and many other enjoyable privileges to males than their female counterparts (Bul Ajak, 2019). When females miss the chance to go to school, studies (Food and Agriculture Organization [FAO], 2014; Manzanera-Ruiz et al., 2016) have shown that they tend to engage in activities of low status, such as peasantry and casual labour as a means of making their ends meet.

Several reasons have been used to justify such decisions of not taking females to school, leading to gender disparity in societies and education, notably higher education. These include females staying at home as housekeepers and servants helping with house chores (Jayachandran, 2015; Okorie, 2017), female children getting married and

leaving their families (Ebestein & Leung, 2010; Hannum et al., 2009), males taking care of the parents when they grow old than females (Hannum et al., 2009; Jayachandran, 2015), and parents' low income which make them choose using the little income they have to send boys to school (Omede & Etumabo, 2016; Okorie, 2017).

Additionally, Anyalebechi (2016) has argued that some societies have distinguished males as strong, fit and unique, while females are seen as weak. Consequently, many opportunities, including getting educated to higher levels of education, remain a privilege for males who are regarded as masterful and competent (Pozzebon et al., 2015; Strough et al., 2007; Weisgram, 2011) but not for females who are seen as weak (Anyalebechi, 2016) and housekeepers (Jayachandran, 2015). Therefore, the femininity and masculinity framework helps us to understand better why males are more privileged than females in accessing higher education. Such privilege has led to the existing gender inequalities that this study intends to uncover.

Methodology

This study adopted a quantitative approach, employing a survey research design to elicit responses that address the research questions guiding the investigation. The design permitted the researchers to examine the opinions of participants regarding the prevalence of gender inequality in higher education and the influence of parents' socioeconomic status on gender inequality in higher education in Tanzania. Survey research design ensures that accurate data are collected from a large sample in a short period. The guidelines for designing survey research, such as adapting reliable survey items from tested instruments, minimising central tendency errors, and careful sampling to minimise bias (Ary et al., 2010), guided the researchers.

The study sample came from four Tanzanian higher education institutions. Of the four institutions, we purposively selected one teacher education institution and three institutions from a comprehensive university that offers STEM programmes. The purpose was to investigate how gender inequality features among higher education students from various degree programmes, particularly in teacher education programmes, which are considered to be less expensive (University of Dar es Salaam [UDSM], 2021) compared to STEM programmes which are thought to be more expensive (UDSM, 2021; Walsh, 2014).

The sample of the study consisted of 1714 participants, comprising 965 students enrolled in teacher education programmes and 749 students majoring in STEM programmes. The study included final-year students, selected purposively due to their extended duration of stay in the university compared to students in their first and

second years. Upon completing the purposive selection of third-year students, a random sampling technique was employed to select study participants. Subsequently, questionnaires were distributed randomly among the chosen participants.

The researchers' initial plan was to collect data from 1,200 students distributed in accordance with the proportion of the total number of students from each cluster of teacher education degree programmes. Hence, the researchers expected to have a sample of 284, 236, 179, and 501 from Bachelor of Science with Education (B.Sc.Ed.), Bachelor of Education in Arts (B.Ed. (Arts)), Bachelor of Education in Science (B.Ed. Science), and Bachelor of Arts with Education (B.A.Ed.) respectively. Nevertheless, 228, 190, 142, and 401 students from B.Sc.Ed., B.Ed. (Arts), B.Ed. (Science), and B.A.Ed. responded to questionnaires, leading to a total response rate of 80.4 per cent.

Similarly, 1011 questionnaires were distributed to three higher learning institutions majoring in STEM in a ratio of 570: 232: 209 according to the total population in institutions 1, 2 and 3, respectively. Finally, a total of 377, 192, and 180 questionnaires were returned from institutions 1, 2, and 3, respectively, yielding a total response rate of 74 per cent. To ensure content validity, the questionnaires were sent to experts for review before being administered to the target population.

Participants were requested to include their last semester Grade Point Average (GPA) as a dependent variable used to measure students' academic achievement. It is important to note that, in the context of higher education in Tanzania, university GPA ranges from 2.0 to 5.0, whereby 4.4-5.0 is a first-class, 3.5-4.3 is an upper second-class, 2.7-3.4 is a lower second class and 2.0-2.6 is a pass.

In analysing data, firstly, the researchers identified variables that revealed gender disparities in higher education institutions. Such variables include gender, parents' occupation, students' GPA, parents' level of education, school type, and parents' background in STEM. Secondly, by using Statistical Package for Social Science (SPSS) version 22, the researchers conducted analyses such as descriptive statistics and an Independent Samples *t*-test to respond to the research questions guiding the study.

Results

As stated earlier, this study aimed to investigate the extent to which gender is a form of social inequality in higher education in Tanzania. Also, the study investigated the influence of parents' socioeconomic status on gender inequalities in higher education in Tanzania. The study results were presented in accordance with the research questions as follows.

To what extent is gender a form of social inequality in higher education in Tanzania?

Descriptive statistics (see Table 1 and Table 2) indicated differences between males and females in terms of enrolment and participation in higher education. Even though our sample was randomly selected from a few strata, gender differences were reflected in our sample, where female students were underrepresented in both STEM majors and teacher education majors. Female students represented 39.5 per cent among teacher education majors, while only 32.4 per cent of female students represented those who majored in STEM (See Table 1 & 2). These results provide a snapshot of gender issues as a form of social inequality in higher education in Tanzania.

Table 1

Demographic Characteristics of Students Majoring in Teacher Education (n=965)

Characteristics	**N**	**Per cent**
Sex		
Male	580	60.5
Female	379	39.5
Level of Education of Female Parents		
Never went to school	98	10.3
Primary education	522	54.6
Secondary education	169	17.7
Certificate	96	10
Diploma	43	4.5
Bachelor and above	24	2.5
Level of Education of Male Parents		
Never went to school	73	7.7
Primary education	440	46.6
Secondary education	166	17.6
Certificate	108	11.4
Diploma	93	9.8
Bachelor and above	64	6.8
Mother's occupation		
Civil servant	146	15.5
Small entrepreneur	207	22
Smallholder farmers	589	62.5

Father's occupation		
Civil servant	197	21.8
Small entrepreneur	196	21.7
Smallholder farmers	510	56.4
Worked as a teacher before?		
Yes	170	18.4
No	752	81.6
Year of Study		
First	543	56.8
Second	14	15.1
Third	269	28.1
Degree programme		
B.A.Ed.	401	41.7
B.Sc. Ed	228	23.7
B.Ed. (Arts)	190	19.8
B.Ed. (Science)	142	14.8

Table 2

Demographic Characteristics of Students Majoring in STEM (n=749)

Characteristics	**N**	**Per cent**
Sex		
Male	506	67.6
Female	243	32.4
Level of Education of Female Parents		
Primary education	337	46.2
Lower secondary (O-Level)	121	16.6
Certificate	56	7.7
High school (A-Level)	21	2.9
Diploma	58	7.9
Bachelor and above	137	18.7
Level of Education of Male Parents		
Primary education	283	39
Lower secondary (O-Level)	96	13.2
Certificate	35	4.8
High school (A-Level)	26	3.6
Diploma	57	7.9
Bachelor and above	228	31.4

Degree programmes		
Engineering	250	33.5
Physical sciences	244	17.1
Life Sciences & Medicine	253	33.9
School type		
Lower Secondary	491	65.7
Public	256	34.3
Private		
High school		
Public	601	80.8
Private	143	19.2
Parents' Background in STEM		
Yes	311	43.7
No	400	56.3
Institution		
Institution 1	377	50.3
Institution 2	192	25.6
Institution 3	180	24.1
B.Sc. Ed	228	23.7
B.Ed. (Arts)	190	19.8
B.Ed. (Science)	142	14.8

In particular, findings indicated that males outnumbered females in all specific degree programmes, with variations across programmes of study (See figure 1). For instance, in programmes such as BED Sc. and BED (Arts), males slightly outnumbered females. Nonetheless, the gap was so large among students majoring in programmes such as BAEd and B.Sc. Ed., life sciences, physical sciences, and medicine. This noted gender imbalances in the specific programmes of study continue to depict gender as an issue that forms the existing inequality in higher education in Tanzania.

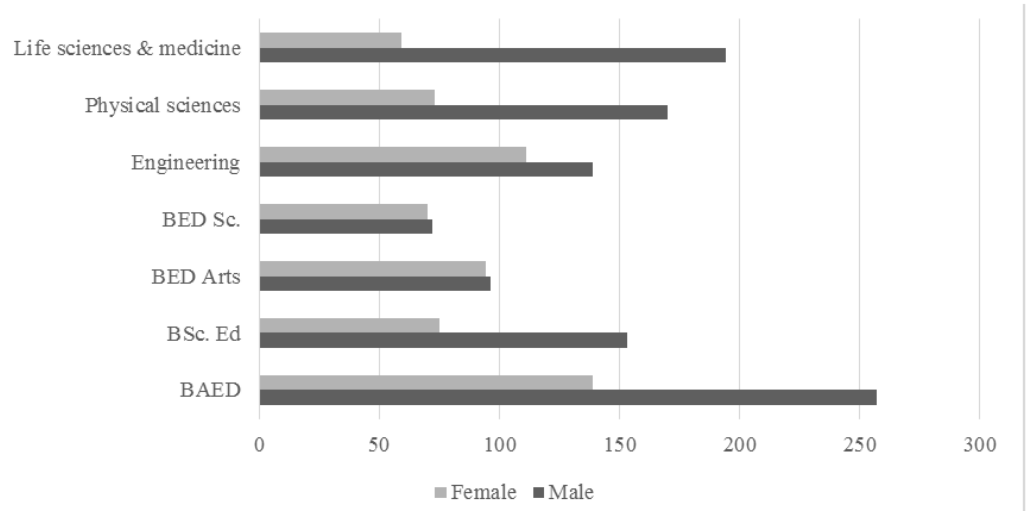

Figure 1*: Students' Enrolment in Degree Programmes by Gender*

Source: Field data (2022)

Also, the study investigated whether gender inequality was reflected in students' academic achievement (GPA). Findings indicated that female students specialising in teacher education significantly ($p < .05$) outperformed their male counterparts in the same programme of study. On the contrary, there was no significant difference in academic achievement among students majoring in STEM programmes (See Table 3).

Table 3
Mean Scores and Independent Samples t-test for GPA

	Sex	*M*	*SD*	F	*p* Value
Teacher Education	Male	3.158	.5600		
Majors	Female	3.255	.5615	.220	.024*
STEM Majors	Male	3.501	.5928		
	Female	3.578	.5494	2.514	.112

How does parents' socioeconomic status influence gender inequalities in higher education in Tanzania?

In this research question, the study aimed to investigate the influence of parents' socioeconomic status on gender inequalities in higher education in Tanzania. In this study, Socioeconomic Status (SES) was used to refer to parents' education (educational background and educational level attained), parents' occupation and parents' income, which basically define the type of school children attended in secondary education. Thus, we dealt with variables such as parents' education, parents' occupation, parents' background in STEM, and the type of secondary school which students attended.

Table 4

Mean Scores and Independent Samples t-test for Students Majoring in Teacher Education

	Sex	*M*	*SD*	F	*p* Value
Mothers' Education	Male	2.39	1.065		
	Female	2.75	1.197	13.966	.000*
Fathers' Education	Male	2.69	1.290		
	Female	3.21	1.454	19.868	.000*

The findings have consistently indicated that parents of female students have significantly higher levels of education when compared to parents of male students (See Tables 4 & 5). Furthermore, descriptive statistics indicated that the majority of parents of children majoring in teacher education have lower levels of education, causing them to work as smallholder farmers (see Table 1), which corresponds to low SES in the Tanzanian context. In particular, more female parents (62.5 per cent) were smallholder farmers compared to male parents (56.4 per cent). Additionally, compared to female parents counterparts, male parents were more in the civil servant's occupation, which corresponds to high SES (see Table 1).

Table 5

Mean Scores and Independent Samples t-test for Students Majoring in STEM

	Gender	*M*	*SD*	F	*p* Value
Mother's Education	Male	2.43	1.992		
	Female	3.30	2.143	11.633	.000*
Father's Education	Male	3.00	2.243		
	Female	4.02	2.416	10.905	.000*

Table 6

Mean Scores and Independent Samples t-test Of GPA for Students Majoring in STEM by Gender with Their Parents Having a Background in STEM

	Parents with a background in STEM?	***M***	***SD***	**F**	**p Value**
Male	Yes	3.564	.5917	.0491	
	No	3.458	.5586	.0365	.084
Female	Yes	3.651	.4944	.0478	
	No	3.486	.6113	.0671	.046*

As shown in Table 6, the findings indicated that female students whose parents had a background in STEM significantly outperformed fellow female students whose parents did not have a background in STEM (p <.05). On the contrary, parents' background in STEM did not have any significant effect on male students' achievement (p >.05).

Since we explained earlier that family income influences parents' decisions to enrol their children on a particular school type, the study also investigated whether attending a public or a private school at the Ordinary Level (O-Level) and Advanced Level (A-Level) significantly affects students' achievement at the university level.

Table 7

Mean Scores and Independent Samples t-test of GPA for Students Majoring in STEM by O-level School Type Attended and by Gender

	O-level type of school attended	***M***	***SD***	**F**	**p Value**
Male	Public	3.497	.5881		
	Private	3.508	.6062	.250	.864
Female	Public	3.494	.5677		
	Private	3.679	.5115	.189	.015*

Findings (Table 7 & 8) indicated that female students who attended private schools in both O-Level and A-Level had significantly (p<.05) higher GPA mean scores compared to their fellow female students who attended public schools in both levels.

Table 8

Mean Scores and Independent Samples t-test of GPA for Students Majoring in STEM by A-level School Type Attended and by Gender

	A-level type of school attended	*M*	*SD*	F	p Value
Male	Public	3.479	.5955		
	Private	3.617	.0722	.002	.084
Female	Public	3.504	.5682		
	Private	3.737	.4722	1.890	.003*

On the contrary, findings (Tables 7 & 8) indicated that attending a public or a private school did not have any significant effect on male students' academic achievement. In other words, attending a private secondary school predicted achievements for female students only.

Discussion and Conclusions

This study aimed to investigate the extent to which gender is a form of social inequality in higher education in Tanzania. Also, the study sought to investigate the influence of parents' socioeconomic status on gender inequalities in higher education in Tanzania. Overall, descriptive statistics indicated that the majority of students in both STEM programmes and teacher education programmes were male students. This continues to replicate earlier findings (Ehrenberg, 2010; Fischer, 2017; Morley et al., 2009; Sassler et al., 2016; Smeding, 2012) that female students are underrepresented in higher education. Such findings relate to femininity and masculinity assumptions that, from an early age, males are encouraged to think and act scientifically (Simon et al., 2017). Such practices are likely to make females experience lower sense of belongingness to STEM programmes compared to males.

Other than female students being underrepresented in higher education, they were further underrepresented in specific programmes of study. Male students outnumbered female students in all degree programmes involved in this study. Thus, female students' participation in higher education is limited. Such findings may be due to the fact that many parents have not tended to take female children to school. Literature has asserted that parents do not enrol female children on school because they view a female child as a housekeeper and servant helping with house chores (Jayachandran, 2015; Okorie, 2017). Other scholars (e.g. Ebestein & Leung, 2010; Hannum et al., 2009) have related this decision by parents to the fact that female children get married early as they grow up. Thus, parents have tended to use the little income they have to take male children to school.

In particular, female students were mainly underrepresented in STEM disciplines. The possible explanation for this may be due to femininity and masculinity assumptions that females are seen as weak (Anyalebechi, 2016) to deal with 'things related' careers such as science and technology studies, engineering and other natural sciences (Mehta & Dementieva, 2017; Pozzebon et al., 2015; Simon et al., 2017). Scholars have argued that such programmes of study are considered to be for males who are strong, independent and skilful (Anyalebechi, 2016; Pozzebon et al., 2015; Weisgram et al., 2011). Interestingly, though female students are underrepresented in many programmes of study, results from teacher education data showed that female students significantly outperformed male students in academic achievement (See Table 3).

Furthermore, data from students majoring in teacher education indicated that many parents have a lower level of education. Implicitly, this made them work as small farmers. Subsequently, working as smallholder farmers might have influenced their income. Income, on the other hand, is likely to oblige parents to enrol their children in teacher education programmes, which in the Tanzanian context are regarded as cheap

to pay compared to STEM programmes (UDSM, 2021; Walsh, 2014).

On the contrary, as presented earlier, data from students majoring in STEM indicated that 31.4 per cent of male parents and 18.7 per cent of female parents had a bachelor's degree and above (see Table 2). These percentages are higher when compared to male parents (6.8 per cent) and female parents (2.5 per cent) of students majoring in teacher education programmes (see Table 1). Basically, the higher the level of education, the higher the possibility of earning better (Stryzhak, 2020; Turčínková & Stávková, 2012). Having enough income might again influence parents' decision to enrol their children in STEM programmes, which are considered expensive to pay (UDSM, 2021; Walsh, 2014) but have high future returns.

Additionally, compared to female parents, male parents were more in the civil servant's occupation, which corresponds to high SES. These findings replicate earlier findings (FAO, 2014; Manzanera-Ruiz et al., 2016), which found that females tend to engage in low-status activities such as smallholder farming and casual labouring. Moreover, the background of parents of children majoring in STEM significantly affected female students' achievement. This reminds us that parents' background in STEM plays a crucial role in ensuring female students' academic achievement in higher education.

Furthermore, the type of school which students attended presented interesting findings. This is because female students who attended a private school in both ordinary and advanced levels of secondary education significantly performed better in higher education compared to female students who attended a public school. This suggests that the type of school which female students attend is associated with students' academic achievement in higher education. Principally, it is parental income that determines parents' school type choice (Altenhofen et al., 2016; Altrichter et al., 2011; Bosetti, 2004; Erickson, 2017; Prichard & Swezey, 2016). This is because family income makes parents free to choose the type of school regardless of the expenses and distance between home and school. Therefore, family income is acknowledged as a principal source that made students enrol in private schools, hence influencing their participation and academic achievement in higher education.

Implications for future research

This study provides a snapshot of the status of gender inequalities in higher education in Tanzania. From the study findings, we recommend the following for future research. First, a qualitative study should be conducted to find out why females are underrepresented in higher education. Also, a study should be conducted to determine what other factors influence male students choosing to study STEM-related fields. Methodologically, our study covered only the quantitative aspects of gender inequalities in higher education. Thus, future studies must illuminate the qualitative

aspects (e.g., gender negative stereotypes and sense of belongingness) in the context of a male-dominated education. For instance, the fact that our study revealed incidents where females outperformed males is not a guarantee that female students experience a happier school life. To conclude, these findings should alert policymakers to craft gender sensitive policies for widening participation in Tanzania's higher education.

References

Altrichter, H., Bacher, J., Beham, M., Nagy, G., & Wetzelhu, D. (2011). The effects of a free school choice policy on parents' school choice behaviour. *Studies in Educational Evaluation, 37,* 230–238. https://doi.org/10.1016/j.stueduc.2011.12.003.

Anyalebechi, L. (2016). The issue of gender inequality in Nigeria. *Journal of Policy and Development Studies*, *10*(2), 63–71.

Ary, D., Jacobs, L. C., Sorensen, C. K., & Walker, D. A. (2010). *Introduction to research in education* (8th ed.). Wadsworth Cengage Learning.

Banchefsky, S., Westfall, J., Park, B., & Judd, C. M. (2016). But you don't look like a scientist!: Women scientists with feminine appearance are deemed less likely to be scientists. *Sex Roles*, *75*, 95–109.

Barbara Krahé. (2018). Gendered self-concept and the aggressive expression of driving anger: positive femininity buffers negative masculinity. *Sex Roles*, *79*, 98–108. https://doi.org/10.1007/s11199-017-0853-9.

Boliver, V. (2016). Exploring ethnic inequalities in admission to russell group universities. *Sociology*, *50*(2), 247–266. https://doi.org/10.1177/0038038515575859.

Bosetti, L. (2004). Determinants of school choice: understanding how parents choose elementary schools in Alberta. *Journal of Educational Policy*, *19*(4), 387–405. https://doi.org/10.1080/0268093042000227465.

Bul Ajak, B. E. (2019). The factors contributing to low school enrolment of females in South Suda. *Achieves of Community Medicine and Public Health*, *5*(1), 29–34.

Carli, L. L., Alawa, L., Lee, Y., Zhao, B., & Kim, E. (2016). Stereotypes about gender and science: Women ≠ scientists. *Psychology of Women Quarterly*, *40*(2), 244–260. https://doi.org/10.1177/0361684315622645.

Chien C., Mountjourides, P. & Van Der Pol, H. (2017). Global trends of access to and equity in postsecondary education. *In*: Mountford-Zimdars A. and Harrison N (Ed.), *Access to Higher Education: Theoretical Perspectives and Contemporary Challenges* (pp. 3–32). Routledge.

Carli, L. L., Alawa, L., Lee, Y., Zhao, B., & Kim, E. (2016). Stereotypes about gender and science: women ≠ scientists. *Psychology of Women Quarterly*, *40*(2), 244–260. https://doi.org/10.1177/0361684315622645.

Chien C., Mountjourides, P. & Van Der Pol, H. (2017). Global trends of access to and equity in postsecondary education. *In*: Mountford-Zimdars A. and Harrison N (Ed.), *Access to Higher Education: Theoretical Perspectives and Contemporary Challenges* (pp. 3–32). Routledge.

Detourbe, M. A., & Goastellec, G. (2018). Revisiting the issues of access to higher education and social stratification through the case of refugees: a comparative study of spaces of opportunity for refugee students in Germany and England. *Social Sciences*, *7*(186), 1–20.

Ebestein, A., & Leung, S. (2010). Son preference and access to social insurance: evidence from China's rural pension program. *Population and Development Review*, *36*(1), 47–70.

Ehrenberg, R. G. (2010). Analysing the factors that influence persistence rates in STEM field, majors: Introduction to the symposium. *Economics of Education Review*, *29*(6), 888–891. https://doi.org/10.1016/j.econedurev.2010.06.012

FAO. (2014). *Gender inequalities in rural employment in Tanzania mainland: An overview*.

Fischer, S. (2017). The downside of good peers: how classroom composition differentially affects men's and women's STEM persistence. *Labour Economics*, *February* 1–16. https://doi.org/10.1016/j.labeco.2017.02.003.

Francis, B., Archer, L., Moote, J., Dewitt, J., Macleod, E., & Yeomans, L. (2017). The construction of physics as a quintessentially masculine subject: young people's perceptions of gender issues in access to physics. *Sex Roles*, 156–174. https://doi.org/10.1007/s11199-016-0669-z.

Hannum, E., Kong, P., & Zhang, Y. (2009). Family sources of educational gender inequality in rural China: a critical assessment. *International Journal of Educational Development*, *29*, 474–486. https://doi.org/10.1016/j.ijedudev.2009.04.007.

Jayachandran, S. (2015). The roots of gender inequality in developing countries. *The Annual Review of Economics*, *7*, 63–88. https://doi.org/10.1146/ annurev-economics-080614-115404.

Laurie, N. (2011). Gender water networks: femininity and masculinity in water politics in Bolivia. *International Journal of Urban and Regional Research*, *35*(1), 172–188. https://doi.org/10.1111/j.1468-2427.2010.00962.x.

Leavy, P., & Ross, L. S. (2009). Femininity, masculinity, and body image issues among college-age women: an in-depth and written interview study of the mind-body dichotomy. *The Qualitative Report*, *14*(2), 261–293.

Manzanera-Ruiz, R., Lizarraga, C., & Mwaipopo, R. (2016). Gender inequality, processes of adaptation, and female local initiatives in cash crop production in Northern Tanzania. *Rural Sociology, 81*(2), 143–171.

Marginson, S. (2016). *The worldwide trend to high participation higher education: dynamics of social stratification in inclusive systems*. 413–434. https://doi.org/10.1007/s10734-016-0016-x.

Mehta, C. M., & Dementieva, Y. (2017). The contextual specificity of gender: femininity and masculinity in college students' same – and other-gender peer contexts. *Sex Roles, 76*(9–10), 604–614. https://doi.org/10.1007/ s11199-016-0632-z

Meroe, A. (2014). Democracy, meritocracy and the uses of education. *Journal of Negro Education, 83*(4), 485–498.

Morley, L., Leach, F., & Lugg, R. (2009). Democratising higher education in Ghana and Tanzania: opportunity structures and social inequalities. *International Journal of Educational Development, 29*(1), 56–64. https://doi.org/10.1016/j.ijedudev.2008.05.001.

Mountford-Zimdars, A., & Sabbagh, D. (2013). Fair access to higher education: a comparative perspective. *Comparative and International Education Society, 57*(3), 359–368.

Nyerere, J. K. (1968). *UJAMAA: Essays on socialism*. Oxford University Press.

Ogletree, S. M., Fancher, J., & Gill, S. (2014). Gender and texting: Masculinity, femininity, and gender role ideology. *Computers in Human Behavior, 37*, 49–55. https://doi.org/10.1016/j.chb.2014.04.021.

Okorie, M. (2017). An assessment of factors militating against girl child education in Nigeria. *International Journal of Advanced and Multidisciplinary Social Science, 3*(2), 49–53.

Omede, A., & Etumabo, A. G. (2016). The implications of girl-child education to nation building in the 21st century in Nigeria. *Global Journal Human-Social Science, 16*(3), 1–4.

Pozzebon, J. A., Visser, B. A., & Bogaert, A. F. (2015a). Vocational interests, personality, and socio-sexuality as indicators of a general masculinity/ femininity factor. *Personality and Individual Differences, 86*, 291–296. https://doi.org/10.1016/j.paid.2015.06.019.

Pozzebon, J. A., Visser, B. A., & Bogaert, A. F. (2015b). Vocational interests, personality and socio-sexuality as indicators of a general masculinity/ femininity factor. *Personality and Individual Differences, 86*, 291–296.

Pozzebon, J. A., Visser, B. A., & Bogaert, A. F. (2015b). Vocational interests, personality and socio-sexuality as indicators of a general masculinity/ femininity factor. *Personality and Individual Differences, 86*, 291–296.

Sahin, E. (2014). Gender equity in education. *Open Journal of Social Sciences, 2*(59–63). https://doi.org/10.4236/jss.2014.21007.

Sassler, S., Glass, J., Levitte, Y., & Michelmore, K. M. (2016). The missing women in STEM? Assessing gender differentials in the factors associated with transition to first jobs. *Social Science Research, 63,* 192–208. https://doi.org/10.1016/j.ssresearch.2016.09.014.

Savin-Williams, R. C., Chivers, M. L., & Bailey, J. M. (2016). Sexual arousal and masculinity-femininity of women. *Journal of Personality and Social Psychology, 111*(2), 265–283.

Settles, I. H., O'Connor, R. C., & Yap, S. C. Y. (2016). Climate perceptions and identity interference among undergraduate women in STEM: the protective role of gender identity. *Psychology of Women Quarterly, 40*(4), 488–503. https://doi.org/10.1177/0361684316655806.

Simon, R. M., Wagner, A., & Killion, B. (2017a). Gender and choosing a STEM major in college: femininity, masculinity, chilly climate, and occupational values. *Journal of Research in Science Teaching, 54*(3), 299–323. https://doi.org/10.1002/tea.21345.

Simon, R. M., Wagner, A., & Killion, B. (2017b). Gender and choosing a STEM major in college: femininity, masculinity, chilly climate, and occupational values. *Journal of Research in Science Teaching, 54*(3), 299–323.

Smeding, A. (2012). Women in science, technology, engineering, and mathematics (STEM): an investigation of their implicit gender stereotypes and stereotypes' connectedness to math performance. *Sex Roles, 67,* 617–629. https://doi.org/10.1007/s11199-012-0209-4.

Strough, J., Leszczynski, J. P., Neely, T. L., Flinn, J. A., & Margrett, J. (2007). From adolescence to later adulthood: femininity, masculinity, and androgyny in six age groups. *Sex Roles, 57*(5–6), 385–396. https://doi.org/10.1007/ s11199-007-9282-5.

Stryzhak, O. (2020). The relationship between education, income, economic freedom and happiness. *SHS Web of Conferences, 75,* 1–6. https://doi.org/10.1051/shsconf/20207503004.

Turčínková, J., & Stávková, J. (2012). Does the attained level of education affect the income situation of households? *Procedia – Social and Behavioral Sciences, 55,* 1036–1042. https://doi.org/10.1016/j.sbspro.2012.09.595.

University of Dar es Salaam. (2021). *Undergraduate prospectus 2021/2022*. Dar es Salaam University Press. https://doi.org/10.1017/s0305862x00001643.

Walsh, K. (2014). Why is medical education so expensive? *Journal of Biomedical Research, 28*(4), 326–327. https://doi.org/10.7555/JBR.28.20140040.

Weisgram, E. S., Dinella, L. M., & Fulcher, M. (2011). The role of masculinity/ femininity, values, and occupational value affordances in shaping young men's and women's occupational choices. *Sex Roles, 65*(3), 243–258. https://doi.org/10.1007/s11199-011-9998-0.

Yao, G., Zhimin, L., & Peng, F. (2015). The effects of family capital on the academic performance of college students—A survey at 20 higher education institutions in Jiangsu province. *Chinese Education & Society Journal*, *48*, 81–91.