

## **Participation in Technical Education, Vocational and Entrepreneurship Training in Zambia: are there Gender Differences?**

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### **Abstract**

The 5th Sustainable Development Goal focuses on gender equality, which is to ensure no disfranchisement from participating in socio-economic activities based on their sex. In Zambia, the majority of learners in Technical Education, Vocational and Entrepreneurship Training registered institutions in highly technical programmes are mostly male. A number of women are denied the chance to achieve their potential in mostly male programmes due to societal stereotypes, lack of requisite school qualifications or self-intimidation. Some scholarship incentives have tried to encourage more women participation in mostly male training programmes but the uptake is not very high. However, there are socio-economic returns that accrue workplaces and women for participating in male dominated sectors. This paper seeks to assess the gender differences in the participation of students in mostly male programmes in Technical Training. The main concern was that highly technical programmes have lower female enrolment and participation. A descriptive survey design was employed in this study and data analysed using descriptive (tables and charts), and inferential (Mann-Whitney U-test) statistics. The findings showed that 26.3 % of the total student population was female, while only 15.1% of females were enrolled in mostly male programmes. This study could contribute to the body of knowledge on gender studies in technical training, and guide policy on interventions of increasing gender equity, and open and distance learning.

**Key words:** *Gender equality, mostly male, participation, TEVET*

## 1.0 INTRODUCTION

The 5th Sustainable Development Goal focuses on gender equality. The importance of this gender equality is ensure that no one is disfranchised from participating in political, economic and social activities based on their sex. In Zambia, the majority of learners in Technical Education, Vocational and Entrepreneurship Training registered institutions in highly technical programmes are mostly male.

A number of women are denied the chance to achieve their potential in mostly male programmes due to societal stereotypes, lack of requisite secondary school qualifications or self-intimidation. Some scholarship incentives have tried to encourage more women participation in mostly male training programmes but the uptake is not very high. Nevertheless, there are economic benefits that can be derived for industry and women through increased female participation in the male-dominated trades (Sthruthers and Strachan, 2019).

There is also need for role models for the female students to encourage them to persevere in mostly male programmes. The findings of the study for Jones (2017) suggested that mentoring may be part of the solution towards empowering women beyond their current role. Dickerson (2015) also indicated that female electrician technicians reported that personal independence was a reason for leaving their prior occupations that lacked decent wages, health benefits, and retirement options.

This report is intended to provide information on the assessment of the gender differences in the participation of students in mostly male programmes in Technical Training institutions in Zambia. The main concern was that highly technical, and skills programmes as well as science education have lower female enrolment and participation. The following operational definitions were used in the study.

1. **Gender equality:** No one is disfranchised from participating in political, economic and social activities based on their sex.
2. **Mostly male:** An entity or sector that is dominated by more males and less females.
3. **Participation:** The active involvement by enrolling and learning in a training programme.
4. **TEVET:** Those aspects of the educational process involving the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life [integrated with entrepreneurship] (UNESCO, 1999).

The purpose of the survey was to assess the gender differences in the participation of learners in mostly male programmes in Technical Training institutions in Zambia. The objectives of the survey were as follows:

1. Examine female participation in mostly male programmes;
2. Determine gender equality in subject selection;
3. Evaluate gender sensitive training and learning environment; and
4. Evaluate the barriers that can limit female participation in training.

The following research questions will be addressed:

1. What is the female participation in mostly male programmes?
2. Is there gender equality in subject selection?
3. Why is there gender sensitive training and learning environment?
4. How can barriers limit female participation in training?

## 2.0 REVIEW OF RELATED LITERATURE

This chapter presents the literature that was perused to provide the theoretical underpinning of the study. This chapter begins with a synopsis of females in male-dominated programmes.

### Females in Male-Dominated Occupations

The Technical Education, Vocational and Entrepreneurship Training (TEVET) sector has training programmes that are considered male-dominated or mostly male because there are more male learners than female learners participating in such programmes, courses or subjects. The low participation of females in these training programmes ultimately leads to low female representation in these industrial sectors and occupations. The U.S. Department of Labour defines these occupations as male-dominated when there are 25% or less female employees. More females are being drawn to these male-dominated occupations because, unlike some jobs traditionally held by females, the income is higher than female-dominated occupations (Dickerson, 2015).

In addition, female representation in examinations is also low. From a total of 15,138 candidates who registered to sit for Zambia Qualifications Framework (ZQF) Levels 4-6 Programme [that is certificate to diploma]: 10,315 males passed, 547 males failed 4,017 females passed, 147 females failed (TEVETA, 2019). This means that there are lower numbers of TEVET graduates in highly technical programmes.

The students have had no female archetypes to aspire to follow and thus lacked a certain confidence in their outlook. The reflection was that there was a negative viewpoint in the industry, which was not being challenged (Alves and English, 2018). This shows that female learners and females in male-dominated industries have very few role models.

The concern for role models highlights the need for trainers, supervisors and other personnel to treat females professionally on an equal basis with dignity and respect, and not based on their sex. The quotation below sheds light on what some females experience in some training institutions and workplaces where females are in the minority.

The female participants in this study shared common experiences where they were not allowed to perform functions on site, which were deemed too difficult for the female student. For example, one participant describes how her supervisor specifically prevented her from using a jack hammer (despite having used it before elsewhere) claiming that “it’s heavy” and granted permission for the male student to use the tool (Alves and English, 2018: 11).

### **Policy Initiatives for Inclusion of Female Participation**

To increase female participation in training; some of the following barriers need to be considered. According to Shan (2021) given a male-dominated class or cohort, small subgroups in which women are not in the minority can even counteract the effect of an unbalanced environment. This reiterates the need to have groupings where women can team up so that they do not feel isolated in the larger class, which can also boost their self-esteem in a male-dominated environment.

The other strategy that can be considered is increasing female participation in politics. The political leaders can act as role models for aspiring learners, and they can also act as champions for increasing female participation in socio-economic and political spheres. The champions can help to address some of the barriers that have been identified in the quotation below.

“Whenever women take up Panchayat works and role seriously, some oversight in family responsibilities will only be inevitable simply because they will not be able to devote the same amount of time and energy compared to when they were not Panchayats members. One respondent faced constraints like family interference in their work; still another respondent faced lack of support by family that is family did not support them economically” (Kaul and Sahni, 2009: 34).

There must be support for women in some positions to help them balance up work and family responsibilities so that they are not stressed in leadership positions. In 2020 USAID partners, Frankfurt Zoological Society and the Zambia CRB Association, tested a pilot to use the Community-Based Natural Resource Management Board (CRB) elections as an entry point to increase women’s participation in four CRBs located in the North Luangwa ecosystem.

“Before the meeting I knew very little about the role of the CRBs and that as a woman I could be involved. When I heard that Chief Mukungule was asking women to join the CRB, I decided to try because I knew the Chief’s word is respected” (Malasha, 2021).

The testimony cited above scores the need to sensitise traditional leaders to increase female participation in community leadership positions and in socio-economic activities.

## **3.0 METHODOLOGY**

A descriptive survey design was employed in this study and data obtained from questionnaires administered in 10 training institutions.

**Population:** The study population comprised of Gender Focal Point Persons.

**Sampling:** The sample was obtained from training institutions that were willing to participate in the pilot study.

**Research Instruments:** The data was obtained from a Survey Questionnaire that was administered to 10 Gender Focal Point Persons in the respective training institutions.

**Data Analysis and Presentation Procedures:** The data were analysed using descriptive statistics and inferential analysis derived from Microsoft Excel 2010 and SPSS Statistics 20. Frequencies, tables, and charts will be used to display descriptive data of the findings of the study, while Mann-Whitney U-test will be used for inferential analysis.

#### 4.0 FINDINGS AND DISCUSSION

This section provides the findings of the study presented in form of descriptive statistics and inferential analysis.

##### 4.1 Descriptive statistics of Learner Population

Table 1 shows the characteristics of the learner population in training institutions that were documented in the study.

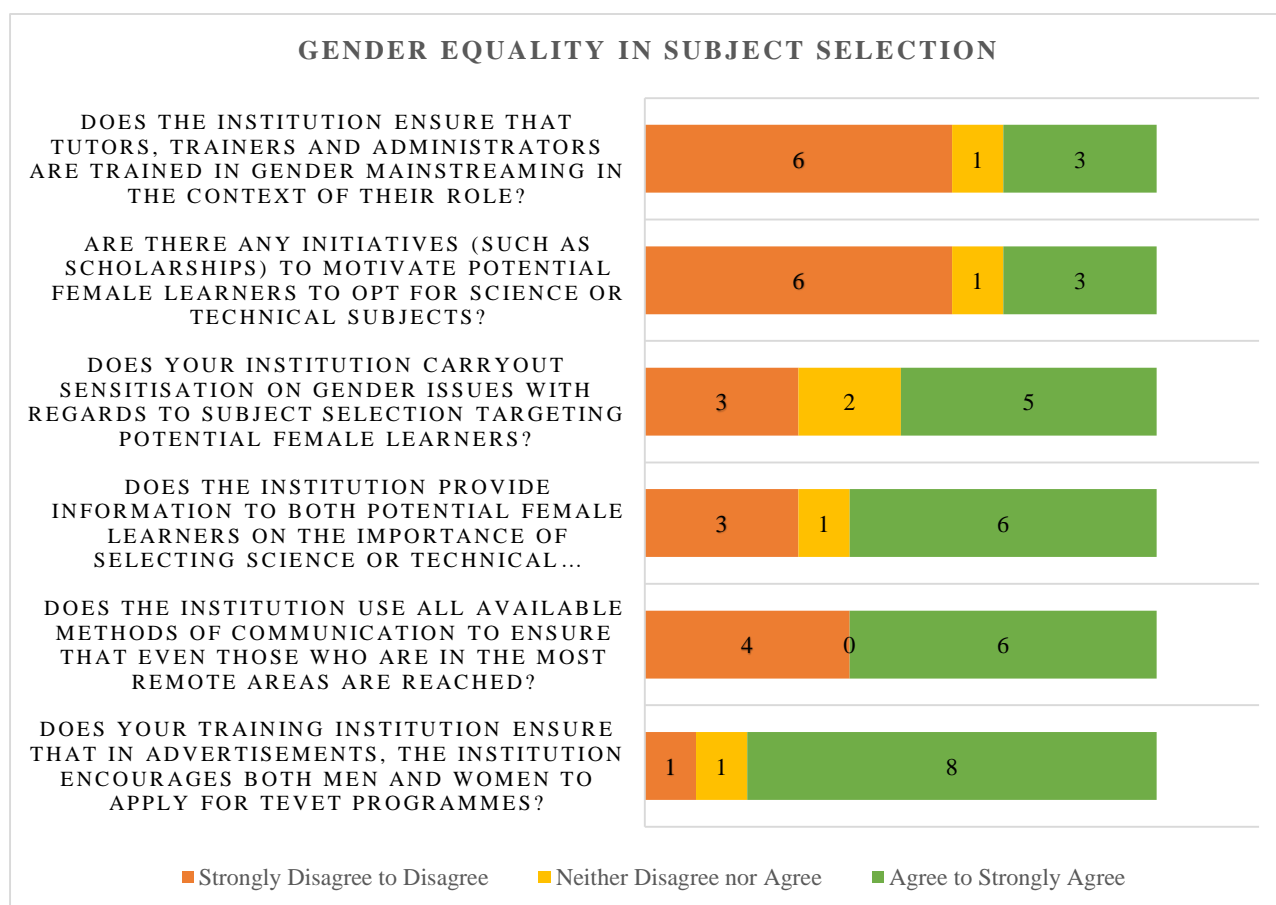
Table 1: Descriptive Statistics of Learner Population

Categories	Number of Learners	% in Population Category	Max	Min	Mean	SD
Number of males in learner population	2853	73.7	883	49	285.3	279.1
Number of females in learner population	1017	26.3	378	8	101.7	118.7
Number of males in mostly male programme	2181	84.9	660	31	218.1	212.1
Number of females in mostly male programme	389	15.1	137	2	38.9	49.6

The population categories recorded in Table 1 were asymmetrical about the Mean= 285.3, 101.7, 218.1 and 38.9, with Standard Deviation= 279.1, 118.7, 212.1 and 49.6 respectively. The Maximum were 883, 378, 660 and 137 respectively. The Minimum were 49, 8, 31 and respectively. The findings showed that 26.3 % of the total student population was female, while only 15.1% of females were enrolled in mostly male programmes. This shows a trend towards low participation of females in mostly male programme.

##### 4.2 Gender Equality in Subject Selection

Chart 1: Gender Equality in Subject Selection

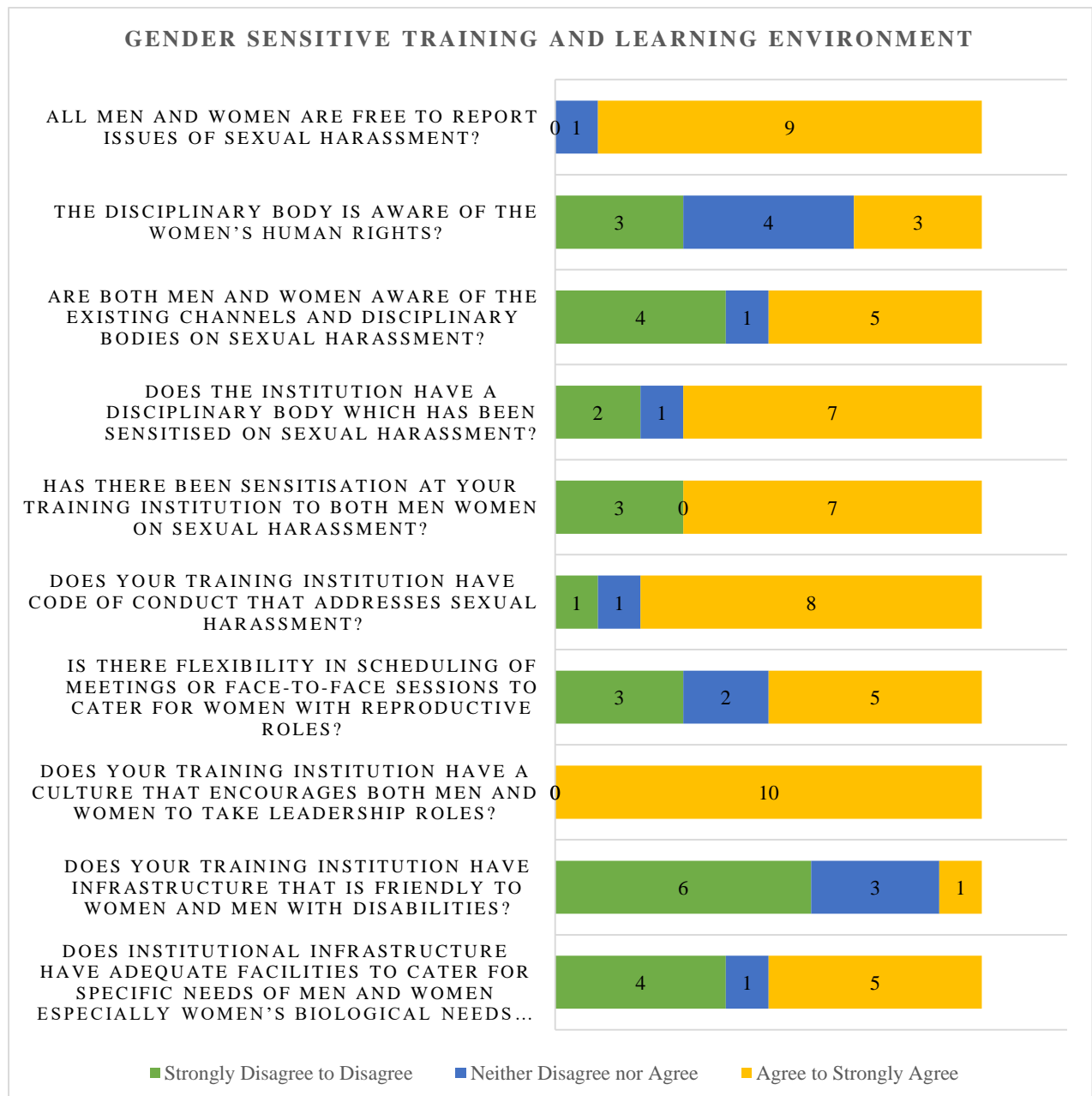


The question that had the highest frequency in "Gender Equality in Subject Selection" was Does your training institution ensure that in advertisements, the institution encourages both men and women to apply for TEVET programme? The garnered 8 responses for Agree to Strongly Agree.

The sources of concern were "Does the institution ensure that tutors, trainers and administrators are trained in gender mainstreaming in the context of their role?", and "Are there any initiatives (such as scholarships) to motivate potential female learners to opt for science or technical subjects?" They both had 6 responses for Strongly Disagree to Disagree. This means that some training institutions do not invest in capacitating the tutors, trainers and administrators in gender mainstreaming.

### 4.3 Gender Sensitive Training and Learning Environment

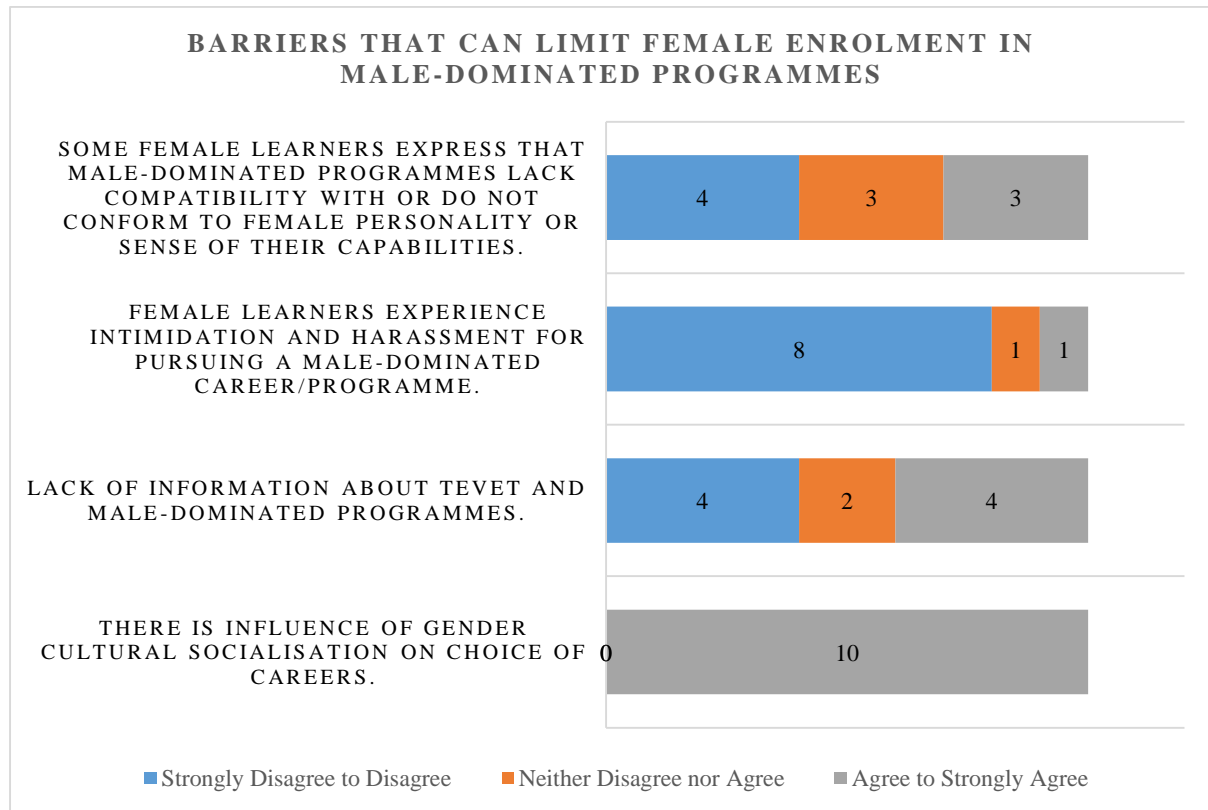
Chart 2: Gender Sensitive Training and Learning Environment



The findings indicated that there was unanimous affirmation of "Does your institution have a culture that encourages both men and women to take leadership roles?" It was also established that "All men and women are free to report issues of sexual harassment" at 9 responses for Agree to Strongly Agree. Therefore, there is no discrimination on the basis of gender in the appointment of personnel to leadership positions.

#### 4.4 Barriers that can Limit Female Enrolment in Male-Dominated Programmes

Chart 3: Barriers that can Limit Female Enrolment in Male-Dominated Programmes



The study established that there was "Influence of gender cultural socialisation on choice of careers". All the respondents unanimously affirmed "Agreed to Strongly Agree". The least affirmed question was "Female learners experience intimidation and harassment for pursuing a male-dominated programme. This shows that there is some institutional support for females participating in male-dominated programmes. It also indicates that there are policies that are enforced to deter intimidation and harassment.

#### 4.5 Learner Population Mann Whitney U-test

The hypothesis for analysing the differences of males and females in the learner population was as follows.

$H_0$ ; there is no statistical difference between the learner population number of males and females.

$H_1$ ; there is a statistical difference between the learner population number of males and females.

Table 2: Mann-Whitney Test Number of Males and Females in Learner Population

##### Mann-Whitney Test

		Ranks		
Gender		N	Mean Rank	Sum of Ranks
No. of Males and Females in Learner Population	Female	10	7.70	77.00
	Male	10	13.30	133.00
	Total	20		

Table 3: Z Output Males and Females in Learner Population

<b>Test Statistics<sup>a</sup></b>	
	<b>No. Males and Females in Learner Population</b>
Mann-Whitney U	22.000
Wilcoxon W	77.000
Z	-2.117
Asymp. Sig. (2-tailed)	.034
Exact Sig. [2*(1-tailed Sig.)]	.035 <sup>b</sup>

a. Grouping Variable: Gender

b. Not corrected for ties.

A Mann-Whitney U test was conducted on 10 institutions to determine if the number of males and females lead to a difference in mean in the learner population. Results showed that the mean learner population number was statistically significant different between the two groups ( $z = -2.117$ ,  $p = 0.034$ ) at a significance level of 0.05. Therefore, the null hypothesis was rejected, and the alternative hypothesis was accepted.

#### 4.6 Learner Number Mann Whitney U-test in Mostly Male Programmes

The hypothesis for analysing the differences of males and females in male dominated programmes was as follows.

$H_0$ ; there is no statistical difference between the learner number of males and females in male dominated programmes.

$H_1$ ; there is a statistical difference between the learner number of males and females in male dominated programmes.

Table 4: Mann-Whitney Test Males and Females in Mostly Male Programmes

#### Mann-Whitney Test

		<b>Ranks</b>		
Gender		N	Mean Rank	Sum of Ranks
No. of Males and Females in Mostly Male Programmes	Female	10	6.40	64.00
	Male	10	14.60	146.00
	Total	20		

Table 5: Z Output for Males and Females in Mostly Male Programmes

**Test Statistics<sup>a</sup>**

	<b>No. of Males and Females in Mostly Male Programmes</b>
Mann-Whitney U	9.000
Wilcoxon W	64.000
Z	-3.099
Asymp. Sig. (2-tailed)	.002
Exact Sig. [2*(1-tailed Sig.)]	.001 <sup>b</sup>

a. Grouping Variable: Gender

b. Not corrected for ties.

A Mann-Whitney U test was conducted on 10 institutions to determine if the number of males and females lead to a difference in mean in the learner numbers in mostly male programmes. Results showed that the mean learner number in mostly male programmes was statistically significant different between the two groups ( $z = -3.099$ ,  $p = 0.002$ ) at a significance level of 0.05. Therefore, the null hypothesis was rejected, and the alternative hypothesis was accepted.

**5.0 CONCLUSION**

The findings of the study indicate that despite the efforts that have been carried out to ensure the participation of more females in male dominated programmes there is a statistically significant difference between the number of males and females in the learner population ( $z = -2.117$ ,  $p = 0.034$ ) at a significance level of 0.05. There was also a statistically significant difference between the number of males and females in mostly male programme ( $z = -3.099$ ,  $p = 0.002$ ) at a significance level of 0.05.

Some of the factors that could be attributed to the low female participation can be trainers not being capacitated in gender mainstreaming and inadequate initiatives for ensuring female participation in mostly male programmes. This can be seen from the institutions' negative responses to the following questions: "Does the institution ensure that tutors, trainers and administrators are trained in gender mainstreaming in the context of their role?", and "Are there any initiatives (such as scholarships) to motivate potential female learners to opt for science or technical subjects?" They both had 6 responses for Strongly Disagree to Disagree. The study also established that there was "Influence of gender cultural socialisation on choice of careers"; all the respondents unanimously affirmed "Agreed to Strongly Agree".

On a positive note the findings indicated that there was unanimous affirmation ("Agreed to Strongly Agree") of "Does your institution have a culture that encourages both men and women to take leadership roles?". Therefore, there is no discrimination on the basis of gender in the appointment of personnel to leadership positions.

**6.0 RECOMMENDATIONS**

From the findings of the study, the following recommendations can be made: there is necessary to improve the gender mainstreaming capacity of trainers and administrators in TEVET institutions. The in-service training of trainers, examiners and assessors should furnish them with skills to apply gender equality and equity. Furthermore, to have an enhanced documentation of the experiences of the female learners in mostly-male training programmes a study should be conducted from the perspective of the learners personal experiences.



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