

**CONTRIBUTION OF GENDER POLICIES IN TECHNICAL
VOCATIONAL EDUCATION AND TRAINING TO GENDER EQUITY
AMONG STUDENTS IN VOCATIONAL TRAINING INSTITUTE,
CENTRAL REGION, UGANDA**

NGANDA AIDAH TREVELYNN

E83EA/33903/2015

**A RESEARCH THESIS SUBMITTED TO THE DEPARTMENT OF
EDUCATIONAL FOUNDATIONS IN FULFILMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF DOCTOR
OF PHILOSOPHY IN SOCIOLOGY OF EDUCATION IN THE SCHOOL
OF EDUCATION, KENYATTA UNIVERSITY**

NOVEMBER, 2022

DECLARATION

I declare that this thesis is my original work and has not been presented to any other university or institution for any accreditation. Studies and citations of other scholars used in this report have been duly acknowledged and referenced as either texts or tables using the current APA style and following anti-plagiarism regulations.

Signature: _____

Date: _____

NGANDA AIDAH TREVELYNN

E83EA/33903/2015

DECLARATION BY SUPERVISORS

We confirm that thesis has been developed with our guidance and submitted for evaluation with our approval.

Signature _____

Date _____

Dr Francis Kirimi

Department of Educational Foundations

Kenyatta University

Signature _____

Date _____

Dr Salome Nyambura

Department of Educational Foundations

Kenyatta University

DEDICATION

This thesis is dedicated to our lovely children Arielle, Arianna (RIP), Mimi and Tendo, my husband Vernon Kikabi, and Siblings, may it spur you to greater academic heights. To my dear parents Mr and Mrs Lukoma, you sacrificed significantly and laid a great foundation for this achievement. Thank you so much for loving and always believing in me.

ACKNOWLEDGEMENT

My sincere appreciation goes to different individuals whose contributions made the completion of this thesis possible. Firstly, I am grateful to God who has continuously upheld me throughout this study. Glory to your name.

Secondly, I am indebted to my supervisors Dr Francis Kirimi and Dr Salome Nyambura, whose mentorship, critical evaluation and timely feedback throughout this study encouraged me always.

My deep appreciation also goes to all the teaching and non-teaching staff in the Department of Educational Foundations for their enormous support. Thanks, Dr Mary Chepkemoi, Dr Peter Gathara, Dr Lucy Mbirianjau, Dr Olivia Opere and Ms Alice Njilo for being available for insightful consultations.

Similarly, I am grateful to the African Union Commission and Kyambogo University, with whose sponsorships and study leaves, I pursued my dreams. Particularly, I appreciate the School Vocational Studies and the Department of Human Nutrition and Home Economics for their great support. To you Mr Bazanye Nicholas, thanks for sharing this sponsorship opportunity which enabled me to pursue my goal.

My sincere gratitude also goes to all principals, deputy principals, academic registrars, instructors, and students for the different VTIs, ministry officials, district leaders, and civil society advocates, who willingly collaborated and courteously provided the required data for this study. To my research assistants and statistician, Dr Eriab Sekatawa, Ms Tusiime Grace, and Ms Brenda Nassamula, thanks for the relentless support towards bringing meaning and life to this study.

To my dear parents and siblings, your continuous prayers and motivation encouraged me to press on in all situations. My friends and colleagues Dr Flora, Dr Joweria, Dr Eric Kalanda, Dr Kikomoko Peterson, Dr Ndahura Nicholas, Gilbert Mangusho, and Samuel Kiyingi, thank you for always cheerleading and

making this journey enjoyable. Special thanks also go to my mentors, Prof. John and Dr Faith Muyonga, your motivational insights and prayers will for long be remembered. I am equally indebted to Olivia Naluga, Justine Nakubulwa, Catherine Mutabazi and Evelyn Ochieng, your support in taking care of our children during my study time will always be remembered.

Finally, my deepest appreciation is due to my beloved husband, Vernon Kikabi and our children Tendo, Arianna (RIP), Mimi and Arielle. You sacrificially allowed me to trail my career at the expense of your happiness, I share this achievement with you.

TABLE OF CONTENTS

DECLARATION	ii
DECLARATION BY SUPERVISORS	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
LIST OF FIGURES	xii
LIST OF TABLES	xiii
ABBREVIATIONS AND ACRONYMS	xv
ABSTRACT	xviii
CHAPTER ONE: INTRODUCTION AND BACKGROUND TO THE STUDY	1
1.1 Introduction	1
1.2 Background to the Study	1
1.3 Problem Statement	17
1.4 Purpose of the Study	19
1.4.1 Specific Objectives of the study	19
1.4.2 Research Questions Guiding the Study	20
1.5 Significance of the Study	20
1.6 Limitations and Delimitations of the Study	21
1.6.1 Limitations of the Study	21
1.6.2 Delimitations of the Study	22
1.7 Assumptions of the Study	23
1.8 Theoretical and Conceptual Frameworks of the Study	24
1.8.1 Theoretical Framework of the Study	24
1.8.2 Conceptual Framework of the Study	27
1.9 Operational Definition of Terms	30
CHAPTER TWO: REVIEW OF RELATED LITERATURE	33
2.1 Introduction	33
2.2 Gender Trends in Students' Enrolment and Participation	33
2.2.1 Students' Enrolment Trends in TVET	33
2.2.2 Transition and Retention Trends in TVET	39

2.3 Contribution of TVET Policy Advocacy Strategies to Gender Equity among Students.	44
2.3.1 TVET Status Quo	44
2.3.2 Advocacy Strategies in TVET.....	48
2.4 Financial Resources and Gender Equity of Students	54
2.4.1 Public-Private Partnership (PPP).....	54
2.4.2 Budget Allocation in TVET	57
2.4.3 Staff remunerations.....	60
2.4.4 Funding, Loan schemes, Fees Weavers, and Scholarships	62
2.4.5 Parents' Income	65
2.5 Attributes of the Learner-Friendly Environment (LFE) that Promote Gender Equity.....	68
2.5.1 Classrooms, Sanitation and Dormitory Facilities	68
2.5.2 Teaching and Learning Resources.....	74
2.5.3 Psycho-social Learning environment.....	76
2.5.4 Co-curricular Activities and Life Skills	79
2.5.5 Human Resources	83
2.6 Policy Interventions to Boost Gender Equity in TVET Programs	89
2.7 Literature Summary and Gaps	92
CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY	94
3.1 Introduction.....	94
3.2 Research Paradigm	94
3.3 Research Design	94
3.4 Variables.....	95
3.4.1 Independent Variables	96
3.4.2 Dependent Variable	96
3.4.3 Intervening Variables.....	96
3.5 Study Locale	97
3.6 Target Population.....	97
3.7 Sampling Criteria and Sample Size.....	98
3.7.1 Sampling Criteria.....	98

3.7.2 Sample Size.....	100
3.8 Research Instruments	101
3.8.1. Document Analysis Guide	101
3.8.2. Questionnaires for IL, Instructors and Students	102
3.8.3. Interview Guides for DL, Ministry Officials, CSO Gender Advocates, Role model Instructors and Students	103
3.8.4. Learning Environment Observation Checklist	104
3.9 Pilot Study	104
3.9.1 Validity Methods	106
3.9.2 Reliability Strategies.....	107
3.10 Data Collection Techniques	109
3.11 Data Analysis.....	111
3.12 Logistical and Ethical Considerations	113
3.12.1 Logistical Considerations.....	113
3.12.2 Ethical Considerations	113
CHAPTER FOUR:DATA ANALYSIS, PRESENTATION AND DISCUSSION I	115
4.1 Introduction.....	115
4.2 General and Demographic Information	115
4.2.1 Instruments' Return Rate	115
4.2.2 Institutional Settings, TVET Fields and Age of Participants	117
4.2.3 Participants' Categories, Years of Study, Working Experiences and Gender.....	120
4.2.4 Highest Academic Qualification of Study Participants	123
4.3 Enrolment and Participation Trends in TVET between 2013 and 2017	125
4.3.1 Current Students' Enrolment in Rural and Urban Institutions	125
4.3.3 Gender-based Enrolment Trends in VTI between 2013 and 2017	130
4.3.2 Trade-based Enrolment of VTI Students	134
4.3.4 Gender-based Transition Trends in TVET between 2013 and 2017	137
4.3.5 Participants' Perceptions of Students' Enrolment and Retention.....	142
4.4 Contribution of TVET Advocacy Strategies to Gender Equity.....	145

4.4.1	Participants’ Knowledge of Gender Policies.....	145
4.4.2	Relationship between knowledge of Gender Policies and Institutional Settings.....	149
4.4.3	Use of Different TVET Advocacy strategies in Institutions	150
4.4.4	Participants’ Motivations to Participate in TVET	155
4.4.5	Relationship between Advocacy Strategies’ Use and Students’ Enrolment	158
4.5	Contribution of Financial Resources to Gender Equity among VTI Students	161
4.5.1	Funding Avenues for Students in TVET.....	161
4.5.2	Receipt of Capital Grants and Dispatch Period.....	165
4.5.3	Views about TVET Budget Allocation and Staff Remuneration	167
4.5.4	How Funding and Staff Salaries Contribute to Gender Equity	169
4.5.5	Timely and Adequate Resources and their Contribution to Gender Equity	174
4.5.6	Parents’ Income and its Contribution to Gender equity.....	176
	CHAPTER FIVE: DATA ANALYSIS, PRESENTATION AND DISCUSSION II.....	183
5.1	Introduction.....	183
5.2	Contribution of Learner-Friendly Environment (LFE) to Gender Equity.....	183
5.2.1	Status of the PhLE in TVET Institutes	183
5.2.2	Status of Inside-class and Psycho-social Learning Environment	189
5.2.3	Participation in Co-curricular Activities in TVET	195
5.2.4	Human Resources in VTI Learning Environment	198
5.2.5	Human Resource Competencies.....	201
5.2.6	Role Models in TVET Learning Environment.....	202
5.2.7	Approaches Employed to Promote Gender Equity in the LFE.....	205
5.2.8	Contribution of the LFE Attributes to Gender Equity in TVET.....	207
5.3	Policy Interventions to Boost Gender Equity among VTI students	213
5.3.1	Advocacy Interventions for Promoting Gender Equity	213
5.3.2	Perceptions of Advocacy Strategies that Enhance Gender Equity	215
5.3.3	Financing Interventions for Promoting Gender Equity.....	218
5.3.4	LFE Interventions for Promoting Gender Equity	222

CHAPTER SIX: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	227
6.1 Introduction.....	227
6.2 Summary of Main Findings	227
6.2.1 Gender Trends in Enrolment and Retention of Students between 2013 and 2017	228
6.2.2 Contribution of TVET Advocacy Strategies to Gender Equity among Students	229
6.2.3 Contribution of Financing Avenues to Gender Equity of Students	231
6.2.4 Contribution of LFE to Gender Equity among Students.....	233
6.2.5 Policy Interventions for Boosting Gender Equity among VTI Students.....	237
6.3 Conclusions	239
6.3.1 Conclusions Related to Policy.....	239
6.3.2 Conclusions Related to Practices.....	239
6.4 Recommendations	242
6.4.1 Recommendations to Policy Makers	243
6.4.2 Recommendations to VTI and HEI	243
6.4.3 Recommendations to Instructors	245
6.4.4 Recommendations to MoES.....	245
6.4.5 Recommendations for Further Research.....	245
REFERENCES	247
APPENDICES	262
RESEARCH INSTRUMENTS	262
Appendix A: Respondents’ Informed Consent Form.....	262
Appendix B: Document Analysis Guide.....	265
Appendix C: Questionnaires and Interview Guides.....	266
Questionnaire Guide for Students.....	266
Questionnaire Guide for Institutional Leaders	271
Questionnaire Guide for Instructors.....	276
Interview Guide for District Leaders	281
Interview Guide for Ministry Officials (MoES and MOGLSD)	283
Interview Guide for Civil Society Gender Advocates	286

Interview Guide for Role-model Instructors	288
Interview Guide for Role-model Students.....	289
Appendix D: Learning Environment Observation Checklist.....	291
Appendix E: Approval of Research Proposal.....	293
Appendix F: Research Authorisation Letter.....	294
Appendix G: Research Permits.....	294
Ethical Approval.....	294
Approval to Conduct Study in Uganda	297
Appendix H: Gender-Based Enrolment Trends Between 2013 And 2017.....	299
Appendix I: Summary of Gender-Based Transition Between 2013 And 2017	300
Appendix J: Pictures Showing Various Attributes of the Learning Environment	301
Appendix K: List of Pseudo Names and Codes.....	303
Appendix L: The Map Showing Study Locale in Uganda	304

LIST OF FIGURES

Figure 1.1: Conceptualisations of the research variables (2019)	29
Figure 4.1: Highest academic qualification of participants.....	124
Figure 4.2: Views about enrolment and participation of students in TVET	143
Figure 4.4: Gender-based motivations of students for TVET	156
Figure 4.5: Percentages for fees payment modes for TVET students	163
Figure 4.6: Parents' SEC and students' alternative sources of finances	177
Figure 5.1: Means for male and female human resources	198
Figure 5.2: Percentages for academic qualifications of instructors	201
Figure 5.3: Percentages for students' role models	203
Figure 5.4: Instructors' avenues used in LFE to promote gender equity.....	205

LIST OF TABLES

Table 2.1 Students' enrolment in ISCED 3, ISCED 4 and TVET percentage enrolment by region	34
Table 2.2: Percentage enrolment of male and female students in HEI in South Africa	36
Table 2.3: Students' enrolment trends in sciences at A' level before and after UGSBUSP inception.....	39
Table 3.1: Sample size of study	101
Table 3.2: Reliability statistics for participants' questionnaires	108
Table 4.1: Instruments' return rate.....	116
Table 4.2: Distribution of participants according to institutional settings, TVET fields, age, and gender	117
Table 4. 3: Distribution of participants according to categories, years of study, working experiences and gender	121
Table 4.4: Means for current students' enrolment in rural and urban VTI.....	126
Table 4.5:Enrolment of students based on institutional settings.....	128
Table 4.7: Gender-based enrolment trends in 2013-2014 and 2015-2016 cohorts	130
Table 4.6: Trade-based enrolment rates of students in six institutes	134
Table 4.8: Gender-based transition rates in 2013-2014 and 2015-2016 cohorts	137
Table 4.9: Gender-based drop-out rates in rural and urban VTI.....	139
Table 4.10: Familiarity with Gender policies based on participants' categories	146
Table 4. 11: Relationship between gender policies and institutional settings	149
Table 4.12: Means for use of different TVET advocacy strategies	151
Table 4.13: Relationship between advocacy strategies' use and students' enrolment	159
Table 4.14: Means for funding avenues for students	162
Table 4.15: Percentages for receipt of capital grants	165
Table 4.16: Percentages for views about TVET budget allocation and staff salaries	167
Table 4.17: Contribution of staff salaries and TVET funding to gender equity	170
Table 4.18: How staff salaries relate to their contribution to gender equity	173
Table 4.19: How the supply of adequate resources contributes to gender equity.....	174

Table 4.20: Distribution of students according to their SEC and gender	178
Table 5.1: Status of the physical learning environment	185
Table 5.2: Challenges faced by VTI students	187
Table 5.3: Status of inside-class and psycho-social learning environment	190
Table 5.4: Percentages for the status of IPsLE attributes in VTI.....	192
Table 5.5: Percentages for CCA categories and participation rates	196
Table 5.6: Relationship between students' enrolment and staff population	200
Table 5. 7: Strategies employed by instructors to promote gender equity in LFE.....	206
Table 5.8: Views on how the LFE attributes contribute to gender equity	208
Table 5.9: Advocacy interventions for boosting gender equity	214
Table 5.10: Mean responses for advocacy strategies that promote gender equity	216
Table 5. 11: Financing interventions for boosting gender equity	218
Table 5.12: Mean responses for financial strategies that enhance gender equity	219
Table 5.13: Percentages for LFE interventions for boosting gender equity	222
Table 5.14: Means for LFE strategies that boost gender equity among VTI students	224

ABBREVIATIONS AND ACRONYMS

AA	Affirmative Action
ACFoDE	Action for Development
ADEA	Association for Development of Education in Africa
AHS	Agriculture and Home Sciences
ASAL	Arid and Semi-Arid regions
AUC	African Union Commission
BCP	Building and Construction
BTVET	Business Technical Vocational Education and Training
CCA	Co-curricular Activities
CSO	Civil Society Organisation
DIT	Directorate of Industrial Training
DL	District Leader (s)
EI	Electricity
EIC	Equity in Classroom
ESSAPR	Education and Sports Sector Annual Performance Report
FAWE	Forum for African Women Educationalists
FDSE	Free Day Secondary Education
FE	Further Education
FRW	Rwandan Francs
FST	Feminist Socialization Theory
HEI	Higher Education Institutions
IL	Institutional Leader (s)
ILO	International Labour Organisation
IPsLE	Inside Class and Psycho-social Learning Environment

ISCED	International Standard Classification of Education
KShs	Kenya Shillings
LFE	Learner-Friendly Environment
MoE	Ministry of Education, Rwanda
MoES	Ministry of Education and Sports, Uganda
MoEST	Ministry of Education, Science and Technology, Kenya
MoGLSD	Ministry of Gender, Labour and Social Development, Uganda
MoHEST	Ministry of Higher Education, Science and Technology, Kenya
NSGE	National Strategy for Girls' Education in Uganda
NCHE	National Council for Higher Education
PhD	Doctor of Philosophy
PhLE	Physical Learning Environment
PPP	Public-Private Partnerships
PTR	Pupil-to-Teacher Ratio
SDGs	Social Development Goals
SPSS	Statistical Package for Social Sciences
SSA	Sub-Saharan Africa
STEM	Science, Technology, Engineering and Mathematics
STI	Science Technology and Innovation
STR	Student-to-Teacher Ratio
STV	Subject-Task-Value Theory
TIVET	Technical Industrial Vocational and Entrepreneurship Training
TGD	Tailoring and Garment Designs
TEFA	Technical and Further Education
TVET	Technical Vocational Education and Training

UACE	Uganda Advanced Certificate of Education
UBoS	Uganda Bureau of Statistics
UCE	Uganda Certificate of Education
UGSBUSP	Uganda Government Science-Based University Sponsorship Policy
UGX	Uganda Shillings
UN	United Nations
USD	United States Dollars
UNESCO	United Nations Educational Scientific and Cultural Organization
UNGEI	United Nations Girls' Education Initiative
UWONET	Uganda Women's Network
UPE	Universal Primary Education
USE	Universal Secondary Education
VET	Vocational Education and Training
VP	Vocational Pedagogy
VTI	Vocational Training Institutions
WASH	Water Hygiene and Sanitation
WEF	World Economic Forum
WoW	World of Work
WWT	Woodwork Technology

ABSTRACT

Globally, gender policies exist to boost access to and retention in TVET. Nonetheless, studies report several barriers to their proper implementation which impacted gender equity. Thus, this study investigated the contribution of gender policies in TVET to gender equity among VTI students in the Central Region of Uganda. Specifically, the study explored gender trends in enrolment and transition between 2013 and 2017, examined the contribution of TVET advocacy strategies, financial resources and learning environment to gender equity among VTI students, and proposed policy interventions for boosting gender equity among VTI students. Anchored on Feminist Socialisation and Subject-Task-Value theories, the study adopted a convergent parallel mixed methods research design. It targeted 5,791 students, 240 instructors, 60 institutional leaders, 42 district leaders, 4 ministry officials, and 21 civil society gender advocates. Purposive, convenience and stratified random sampling were used to select 5 districts of the Central region, 6 VTI, 9 institutional leaders, 2 ministry officials, 3 district leaders, 5 CSO gender advocates, 56 instructors, and 185 students respectively. Hence, 260 participants comprised the study sample size. Questionnaires for institutional leaders, students and instructors, interview guides for students and instructors, district leaders, ministry officials, and CSO gender advocates were used. Likewise, document analysis tools for enrolment and retention trends and observation schedules for the learning environment attributes were used. Piloting, split-half, triangulation, and inter-coder agreement techniques tested instruments' validity and reliability respectively. SPSS software for analysis and Microsoft Excel were used in the analysis of quantitative data related to access and retention. Specifically, percentage, mean, standard deviation, charts and graphs described the TVET advocacy strategies, financing resources and learning environment. Additionally, Pearson chi-square and Pearson product-moment correlation coefficient were used to show relationships between variables. ANOVA showed the difference in enrolment of students based on their institutional settings. Qualitative data were analysed using the thematic approach and verbatim reporting. Results revealed significant disparities in students' enrolment and transition, based on the rural-urban divide and TVET trades. Further, a significant difference in the enrolment of students based on institutional settings was noted ($F(1,7) = 73.04, p=0.05$). Likewise, results showed a less significant enrolment and transition increase for females than males between 2013 and 2017. Moderate popularity (50%) of gender policies based on participants' categories was noted. Further, findings agreed with the use of different advocacy strategies, financing resources and LFE approaches in promoting gender equity of students. The contribution of the different strategies to gender equity was shown. However, an insignificant relationship between TVET advocacy strategies and the gender equity of students was shown. The study recommended increasing capitation and advocacy for TVET, improving infrastructure facilities, and use of gender-sensitive approaches and materials, for boosting gender equity among VTI students.

CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

This chapter presents the background to gender policies in Technical Vocational Education and Training (TVET), the problem statement, the study purpose, specific objectives and research questions. The chapter also presents the significance, limitations, delimitations and assumptions of the study. The theoretical and conceptual frameworks of the study are also demonstrated therein.

1.2 Background to the Study

Gender equity in education has been a pivotal concern on global and national agendas. It is a necessity for attaining internationally agreed targets. Similarly, access to affordable and quality Technical and Vocational Education and Training (TVET), acquisition of technical and vocational skills for employment, and elimination of gender disparities for the vulnerable are increasingly viewed as key to inclusive and sustainable economies (United Nations Educational, Scientific and Cultural Organisation, UNESCO, 2016a).

Several strategies and policies have thus been developed to attain equity and promote inclusive TVET. Globally, United Nations (UN) established the United Nations Girls' Education Initiative (UNGEI), which encourages its state parties to use appropriate measures like equitable career and vocational guidance to promote gender equity (UNGEI, 2012). Additionally, goals 4, 5, 1 and 10 of the 2030 Agenda for sustainable economies stress the requisite for inclusive and quality education, gender equality, and reduced poverty and inequality for all

nations, and genders respectively (United Nations, 2015). Accordingly, the UNESCO strategy for TVET (2016-2021) commends promoting equity and gender equality as one of its three pillars (UNESCO, 2016c). However, the crisis of equitable participation in TVET is evident. Significantly, the global TVET trends (Wheelahan & Moddie, 2016) present a low-status quo for TVET in most developing countries. These researchers reported an average TVET enrolment and participation of 3 million students in post-secondary institutions in Sub-Saharan Africa (SSA) and South Asia, as compared to 30 million and 18 million in Eastern Asia and Europe respectively. Equally, the International Labour Organisation (ILO) further noted that a very small percentage of the Lao People's Democratic Republic (PDR)'s working-age population (1-64) was receiving or had received TVET by 2010 (ILO, 2016). Notably, only 6.6% and 7.4% of their male and female youths respectively had received TVET. This implies that the acquisition of technical and vocational skills for employment, decent work and entrepreneurship remains a challenge.

UNESCO (2016c) also noted that 73 million youths are unemployed, in addition to the 40 million annual entrants to the labour market worldwide. This necessitates the creation of at least 475 million new jobs over the next decade to absorb them. Further, the global labour force participation rate for women and men was 68.7% and 81.7% respectively in 2014. As such, the unemployment rate for women and men was also 6.4% and 5.7% respectively. Moreover, participation in TVET has the added benefit of contributing to fundamental values of equity, non-discrimination, meaningful participation and social responsibility

in society (Kushmakar, 2016). Nonetheless, many people particularly women lack such opportunities for skills development and decent work, which creates an inequity challenge, thus affecting the development of several nations.

Additionally, females constitute two-thirds of the world's poor and two-thirds of the 750 million illiterate adults (UNESCO, 2019). Particularly, nearly 1 billion girls and women lack the skills to succeed in a rapidly changing job market across the world. UNESCO (2019) also notes that females constitute only 35% of higher education students in Science, Technology, Engineering and Mathematics (STEM). Furthermore, the global gender gap report 2020 revealed that whereas 35 countries have achieved gender parity in education, a few developing ones present ten per cent of girls aged 15-24 as illiterate (World Economic Forum (WEF), 2019). Thus, technological progress and economic growth are yet to address the inequalities and poverty. More so, gender-biased TVET programs continue to affect access and transition in TVET, with a high inclusion of females in traditional TVET programs while low participation is noted in non-traditional ones (Kushmakar, 2016). Thus, engendering strategies to address these issues cannot be undermined.

In the USA, strategies for the promotion of equitable participation exist (Crossman & Cameron, 2014). Nonetheless, funds for college and daily survival were essential for students' enrolment, which created academic, emotional and financial risks in the learning environment (Drotos & Cilesiz, 2016). Equally, students' socio-economic status compelled them to hold jobs, with long working hours, which compromised the available time for studying (ibid). Further,

organizing students' desks in rows discouraged their interactions, and promoted individualism and diversional tendencies for exceptional learners (Ryan, 2013). Equally, male-dominated resources and class discussions were prevalent in most schools, with less than 30% of the authors in three language art books in Los Angeles Unified (LAUSD) as female, despite the 52 per cent enrolment of female students in LAUSD (Alber, 2017). These intangible elements of energy in the classroom, class rules, and the psycho-social learning environment contribute to students' focus, achievement and teacher's attitude towards the class (Ryan, 2013). Thus, the different attributes of the psycho-social learning environment promote inequities and hence need to be addressed.

For Australia, Technical and Further Education (TAFE) has been used to promote gender parity for women and men (Gore, et al., 2017). Despite the provision of a legislative basis for attaining gender equity in academia at most senior levels, the over-representation of females was noted in some disciplines, teaching, and student support, while under-representation in research was seen (Winchester & Browning, 2015). Similarly, headteachers in TAFE suffer poor morale, administrative overload and audit compliance demands, with limited support from managers (Crossman & Cameron, 2014). Thus, students' post-school aspirations in TVET promoted gender stereotypes and negative perceptions which impacted their futures and career choices (Gore, et al., 2017). Notably, TVET-related occupations attracted males, those from low socio-economic class (SEC), those attending school in metropolitan locations, and those of average or low academic ability (ibid), which leads to inequities in participation. Thus, institutions have a

significant role in TAFE career guidance to address the inequities and enhance equality in development.

Despite efforts to increase TVET participation in England, Atkins and Flint (2015) revealed varying determinants of students' TVET choices including previous grades, future career goals, career guidance, and peer and familial influence. The researchers noted that policies could boost higher TVET participation, but might not enhance TVET advocacy for mid-level TVET, where the current study was conducted to show how policies contribute to gender equity. Whereas a marked increase in female representation in managerial positions is noted, very few are reaching senior positions in non-traditional TVET domains (Crossman & Cameron, 2014). There is hence great need to advocate for increased female participation in these trades.

For Mongolia, an integrated career guidance framework was missing in their education sector and TVET system, and their instructors remained ill-equipped to conduct the career guidance role (ILO, 2016). Consequently, an average annual enrolment rate of 11% was registered in public institutes in both urban and rural areas, with more significant growth in urban areas. Thus, these inequalities in TVET enrolment need to be explored and how they can be addressed.

For India, despite enacting the 11th five years Skills Development Mission in 2012, the demand for a skilled workforce remains unfulfilled (Agrawal, 2014). Notwithstanding the high unemployment rate (3.1%) among educated youth (15-29 years), low participation in TVET is still evident. For instance, participation in

formal TVET dropped from 2.4% in 2005 to 2% in 2009-2010, with less than half female representation (Agrawal, 2014). Therefore, achieving her 25% enrolment target by 2022 remains ambiguous, with minimal focus on middle-level TVET. Still, personal factors, school climate, family, peers, teachers, community and e-media influenced students' absenteeism in schools (Vidyakala & Vaishnavi, 2017). Therefore, this study assessed formal TVET participation in middle-level VTI and factors that influence equitable participation.

According to Webster and Sausner (2017), various opportunities for investing and engaging youth in TVET were reported in Nicaragua, as avenues for addressing poverty and unemployment. However, the curricula and resources provided by the government present minimal opportunities for staff to change their standard, and for institutes to work independently of each other. Consequently, a decrease of 14% in technical training of youth was cited in the recent national report despite the provision of specialised workshops in TVET institutes and workplaces (ibid). More so, infrastructure gaps and youth unemployment persist (Webster and Sausner, 2017), and these researchers commended focus on socio-economic complexities, use of public-private partnerships to deliver diversified and high-quality TVET and identifying strategies for increasing participation of marginalised youth, which this study explored and how these strategies enhance gender equity in TVET.

Furthermore, Bangladesh developed a strategy for promoting gender equality in TVET (Government of Bangladesh (GoB), 2012). Based on the low TVET participation (24%) in public and private institutions, equality in access, equity

and gender mainstreaming for women and men are key principles in this policy. Similarly, female students' enrolment was 24%, while female instructors comprised about a fifth of the total number in 2008. Further, technical schools and colleges were lagging behind the national average of gender inclusion by nearly half. Equally, occupation segregation was noted, with higher female participation in sewing, tailoring, housekeeping, computer training and electronic assemblies, compared to more males in industry-based skills like automobile repair, welding, machine operation and electrical repairs. More so, social discrimination including early marriages, household responsibilities, family restrictions, conservative social mindset, preferences for the male to female children, transport constraints, inadequate physical and sanitary facilities, and sexual harassment render training and work environment inappropriate for females than males. Equally, the low profile of TVET institutes, and theorized training systems, influenced by unmotivated and low-quality TVET instructors, inadequate infrastructure, and hands-on skills promote inequities (GoB, 2012). Thus, the need to make vocational and skills training comprehensive, needs-based, a social equity promoter, and disregarding discrimination, is very paramount for national development.

Likewise, participation in co-curricular activities (CCA) was argued to enhance life skills development, which is important in students' retention (MoES, 2013). Accordingly, Shaffer (2019) affirms that CCA instill a sense of pride, skills of teamwork, self-discipline, and physical and emotional development in the youth. Equally, participation in CCA creates several educational outcomes including

school grades, coursework selection, homework, education and occupational aspirations, self-esteem, university applications and college enrolment (Martini et al., Shaffer, 2019). Significantly, participation in extra-curricular activities counteracts school disengagement, including positive relations between teachers and students involved (St-Amand, Girard, Hiroux, & Smith, 2017). Further, a wide range of personal and social skills including communication, presentation, public speaking, and brain development for students are attained through CCA (Md. Roknuzzaman, 2019). Nonetheless, it was unknown whether participation in CCA enhanced the gender equity of students in TVET through these different skills.

Furthermore, the demands to recruit more qualified teachers in SSA, improve the quality of teacher training, and deployment strategies are paramount (UNESCO, 2016b). Notably, 70% of the countries in SSA have inadequate teachers, which makes the fight for gender equity in education complex (UNESCO, 2016b). Recently, UNESCO (2019) argued that better teaching and learning practices require more qualified teachers, better content and improved learning processes. Accordingly, teachers' qualifications, subject expertise and pedagogical competencies are vital in determining education quality. Nonetheless, the presence of female teachers is unbalanced between the different education levels, with the proportions of female teachers much lower at higher levels of education, especially in STEM, as well as leadership positions (UNESCO, 2019). For instance, less than half of primary school teachers and a quarter of secondary school teachers in SSA were females, which made enrolment figures for girls low

(UNESCO Institute of Statistics (UIS), 2010). Dereje (2021) further avowed low participation of female instructors in the science, technology and innovation (STI) ecosystem, despite their role in the promotion of scientific literacy and technological liberation (Magaji, et al., 2020). Therefore, assessing human resource status in formal TVET and its contribution to the gender equity of VTI students was imperative.

For Nepal, challenges of making the TVET system more effective, needs-based, inclusive, dynamic, and responsive to continuous changes persist with a lower inclusion of females in non-traditional TVET programs (Kushmakar, 2016). Additionally, multiple ‘pull and push’ factors significantly influence the enrolment of students in TVET programmes in Malaysia (Shahrin, Normala, Irdyanti, & Noor, 2020). The push factors are interest, family, society and peers while the pull factors include training facilities, curricula, marketing and promotion, programmes offered and instructors’ competence. Therefore, the creation of awareness activities for women to maximise their participation in non-traditional TVET trades is vital. Equally, the contribution of these pull and push factors to equitable participation was limitedly known.

More so, strategies to promote gender equity in education have also been developed in Africa. The African Union Commission (AUC) developed a protocol titled ‘the African Charter on Human and Peoples’ rights’ (AUC, 2005). Article 12 of this protocol advocates for gender equity in education and training, and discourages gender stereotypes in science and technology (AUC, 2005). Furthermore, the Association for Development of Education in Africa (ADEA)

developed a tool for mainstreaming gender in education (ADEA, 2006). Module 2 of this tool emphasizes the relevance of policies in addressing gender issues, promoting research, and capacity building for TVET trainers (ibid). Some of these aspects were embraced as gender policies in this study. Likewise, the recent projection of “The Africa We Want” by 2063 presents several aspirations that contribute to Africa’s development (AUC, 2015). Important to this study were aspirations 3 and 6. Aspiration 3 proposes well-educated and skilled citizens in Science, Technology and Innovation, and emphasizes gender equity, while aspiration 6 recommends a people-driven Africa where the potential of every person, based on their gender is upheld (AUC, 2015). This study was hence in line with these propositions.

Furthermore, the current trends in women’s access to and performance in higher education are deeply inequitable (Forum for African Women Educationalists FAWE, 2015). Accordingly, African universities are overwhelmingly male-dominated, which is prompted by cultural, sociological, economic, psychological, historical and political factors. Equally, uncondusive institution environments, gender insensitive instruction approaches, inaccessible clean and well-functioning sanitation facilities, problematic implementation and monitoring of existing gender policies, family responsibilities, gender stereotypic representation in STEM, along with gender disparities in representation of female staff in managerial and academic positions curtail equitable participation (FAWE, 2015). Thus, the desire to shift from affirmative strategies to more holistic gender-responsive strategies for addressing issues hampering females’ full participation

in higher education is critical for addressing gender inequalities in TVET (FAWE, 2015).

For South Africa, Biji and Lawrence (2019) cited feelings of isolation, curriculum content, administrative process and finances as constraints to students' retention rate in TVET. Simmonds (2017) further reported neglect of gender-related topics in the curriculum and the use of gender-neutral attitudes whenever they arose in the learning processes. Matsolo, Ningpuanyeh, and Susuman (2018) equally noted that household responsibilities, inadequate finances, low interest in higher education, transport to Higher Education Institutions (HEI), and unplanned pregnancies were major impediments to students' enrolment. The contribution of these different factors to equitable access and retention of VTI students was unknown.

Oviawe (2018) in Nigeria also posited that governments cannot single-handedly achieve the objective of enabling their learners to catch up with the changing living standards in a fast-growing technological world. Thus, the refurbishment of TVET skills development through public-private partnerships (PPP) was suggested. Likewise, Adedokun, Oviawe, and Barfa (2015) encouraged advocacy by government and policymakers, adequate sensitization by government, policymakers, and multi-level stakeholders collaborations about the benefits of female participation in TVET. Further, insufficient funding for TVET programmes, inadequate TVET facilities and poor teaching methods hamper the quality of TVET programmes, while increased funding, provision of required TVET facilities, training and retraining TVET instructors, and PPP were proposed

to improve the quality of TVET programmes (Ayonmike, Okwelle, & Okeke, 2015; Edokolor & Dumbiri, 2019). Therefore, assessing the contribution of different attributes of the learning environment and TVET funding to the equitable participation of VTI students cannot be over-emphasized in this study.

For Kenya, the Ministry of Education, Science and Technology (MoEST), established the education and training sector gender policy to address gender inequities and complement earlier developed policies (MoEST, 2015). Interestingly, the MoEST statistics (2008) showed an increase in female students' enrolment in public Technical, Industrial Vocational and Entrepreneurship Training (TIVET) from 40,622 in 1999 to 65,500 in 2004 (Mugenda, Kimani, Maina & Wainaina, 2010). However, most females were enrolled in traditional TVET and 'soft' trades like home science with lower remuneration and a few in non-traditional and 'hard' technical courses like carpentry (Mbirianjau, 2009), with higher remunerations which result in gender inequities in the training and labour market. Equally, Ngugi and Muthima (2017) also reported a steady increase in TVET enrolment trends from 82,653 in 2010 to 148,142 in 2014, with great disparities in gender-based enrolment. Thus, capturing sex-disaggregated data in all TVET aspects is highly commended (Cheruiyot & Wanyaga, 2019), to ascertain whether TVET policies have unravelled these fallacies. Further, Nyaundi (2018) postulated that the budget allocation of 16 billion Kenya shillings (KShs) to TVET was inadequate to propel the big four agenda, with over 2000 instructors required, poor infrastructure, lack of equipment, and logistical-related challenges like transportation facilities. These attributes among other challenges

hamper the implementation of the artisan curriculum (Kigwilu, Akala & Wambua, 2016). Therefore, examining the contribution of these attributes to gender equity of VTI students was equally critical.

Additionally, the 2006 Fast-Track Initiative Assessment in Rwanda revealed unemployment of up to 61% among primary education leavers compared to SSA's average of 29% (Ministry of Education (MoE), 2008). Thus, her government established the TVET policy to create employment opportunities and these address inequalities. Rwanda's vision for 2020 also demands a strong push towards strengthening and creating outcome-based and demand-driven TVET. Nevertheless, only 20.9% of the country's budget is TVET, with underfunding of 80,000 Rwandan Franc (FRW) allocated to TVET schools per quarter (MoE, 2008). Similarly, deficiencies in trained human capital were noted, with about 58% of teachers in 31 technical schools formally qualified in training mid-level workforce. However, their performance is inadequate, with under-developed practical technical competencies and pedagogical preparations, worsened by a low salary of 22,500 FRW for an average TVET instructor (MoE, 2008). More so, Ndayambaje and colleagues (2015) revealed funding challenges in TVET, while MoE (2008) reported the lack of clear and well-articulated policies to guide the development, provision and management of TVET programmes, which impede TVET advocacy. Thus, it remains unknown how gender equity in TVET can be attained amidst these complexities, which affects the attainment of the country's Vision 2020.

For Uganda, chapter 4 and clause 30 of her Constitution stress the need for equitable access to educational opportunities without discrimination (Republic of Uganda, 1995). Consequently, several policies were enacted at different education levels including Universal Primary Education (UPE) in 1997, Universal Secondary Education (USE) in 2007, the gender Affirmative Action (AA) measure for female students joining public Universities (1990), the Equity in Classroom (EIC) program, the National gender policy (1997, 2007), the Business Technical Vocational Education and Training (BTVET) act (2008), modified into BTVET strategic plan (2011) and the National Strategy for Girls Education (NSGE) in Uganda (MoES, 2013). Further, the Gender in Education Policy (2009) guides the implementation and monitoring of a gender-sensitive and responsive education system in Uganda (Government of Uganda (GoU), 2009). Equally, the National Development Plan (2010) identifies education as a priority investment for addressing gender inequities (GoU, 2010). These policies are guiding frameworks for state and non-state actors to address gender inequities in their areas of mandate. Thus, two of these policies that are NSGE in Uganda and the BTVET strategic plan were of keen interest for this study, herein referred to as gender policies.

Additionally, formal skills training started in the 1940s (Directorate of Industrial Training (DIT), 2018). Subsequently, policies to promote TVET have evolved including the 1947 Ordinance, the 1949 apprenticeship legislation for ‘spanner boys’, the 1952 Artisan Training organisation and the 1972 DIT, upon establishment of Nakawa vocational training institute (DIT, 2018). The 1972 DIT

was elevated to the Industrial Training Act (2003), which became the BTVET act in 2008 (MoES, 2008), and then the recent BTVET strategic plan (MoES, 2011). This nine-year (2012/13-2021/22) TVET projection was developed to steer the creation of employable skills and competencies through equitable access, increasing resources for TVET and establishing a skills development fund (MoES, 2011). Equally, the BTVET strategic plan designated a budget of 870 United States Dollars (USD) for nine years. Forty per cent of this budget was earmarked for raising access to quality TVET while 433 billion Uganda Shilling (UGX) were for capital grants and bursaries of students in formal TVET (MoES, 2011). Thus, enrolment for formal TVET was anticipated to rise from 42,000 trainees to 103,000 by 2019/2020. Notably, the MoES (2011) confirmed the release of students' capital grants to 2957 technical schools, community polytechnics, five VTI and colleges of commerce respectively. Nonetheless, the 2013-2014 Education and Sports Sector Annual Performance Report (ESSAPR) revealed a drop in BTVET enrolment by 7.5 per cent (Lyattu, 2014). This drop was presumed to link to different factors. It was hence imperative to assess the contribution of these funding avenues to equitable TVET access and retention of VTI students in Uganda.

Furthermore, studies in Uganda show that gender issues and negative perceptions influence TVET participation. Okello (2012) noted that gender, peer influence, funding, family influence, staff remunerations, and TVET environments contribute to TVET enrolments and participation. Similarly, studies by Asimwe & Atukwase (2017) and Jones (2011) in Central Region noted few females in

administrative and teaching positions respectively. Molyneaux (2011) argued that equitable salary allocation would minimise moonlighting of staff from one school to another. Nonetheless, males had better chances for moonlighting than females who taught 'soft subjects' hence earning more funds than the female colleagues (ibid). Equally, the Uganda Bureau of Statistics (UBoS) revealed enrolment of more than 50% males than females in tertiary institutions (UBoS, 2012, 2016). Participation of female students was also low in non-traditional TVET trades, and higher in traditional trades, due to gender stereotypes, among other factors (Okello, 2012; UBOS, 2016). The contribution of these vocational fallacies and attitudes to gender equity in TVET is limitedly known, yet no study has been done to unravel this in Uganda. Significantly, Kintu, Kitainge, & Farej (2019) explored strategies for facilitating TVET graduates' transition to the world of work and commended strengthening collaborations between TVET institutions and the industries. This study thus explored whether PPP, other funding avenues, and TVET advocacy contribute to gender equity among VTI students.

Moreover, NSGE in Uganda (2015-2019) was developed to address persistent inequities in education, not solved by the Gender in Education policy (2009) (MoES, 2013). Three priority areas of NSGE were vital in this study including policy advocacy, harmonized actions on human and financial resources, and deliberate and routine institutionalized research (MoES, 2013). Accordingly, Okoth (2019) noted that students with certificates in bricklaying or building could hardly upgrade to diploma level unless they passed mathematics and physics at the Ordinary level. Further, the National Council for Higher Education (NCHE)

also argued against the national certificate being sufficient for upgrading to a diploma level. This was claimed to be detrimental to the government's efforts in skilling Ugandans, curbing the high unemployment rates (Okoth, 2019), and promoting economic independence for both females and males. These limitations coupled with other government policies (Molyneaux, 2011), funding (Kintu et al., (2019), Opit, 2014), role models (Asiimwe & Atukwase, 2017), and sociocultural factors (Jones, 2011) constrain access to and retention in TVET among VTI students in Uganda. Hence, UNESCO (2014) commends the promotion of a positive gender image for gender equality, addressing persisting gender disparities in content, teaching and learning contexts and practices, delivery, and assessment methods. Similarly, improving advocacy, funding, and learning environment for TVET would improve quality and equitable participation, besides contributing to the attainment of SDGs 4, 5, 1 and 10. Notably, there is limited research about how these attributes of TVET and gender policies contribute to gender equity among VTI students. Therefore, a need arises to investigate how different attributes of gender policies in TVET contribute to gender equity among VTI students in Uganda.

1.3 Problem Statement

Sustainable Development Goals (SDGs) 4, 5, 1 and 10 propose quality education, gender equality, and reduced poverty and inequality for all respectively. Equally, Technical Vocational Education and Training (TVET) is renowned for counteracting poverty, unemployment, and under-development worldwide. Despite mega efforts to increase gender equity in TVET, a low-status quo persists

in developing countries like Uganda, especially among females. Notably, nearly one billion girls and women worldwide lack opportunities for skills development and decent work. Further, 10% of the girls aged 15-24 years are illiterate, which hinders their success in a rapidly changing world. This not only affects human capital development, cost diversification, and mindset change but also limits the distribution of national resources, hence affecting national development and equality. Similarly, a high inclusion of females in traditional TVET trades like tailoring has persisted, with less than a quarter of participation in non-traditional trades like carpentry.

Whereas national gender policies exist to boost access to and retention in TVET, several barriers hamper their proper implementation including unfriendly learning environments, government policies, familial influence, family income, low funding, science divide including grades at previous education levels, biased attitudes towards TVET, and gender stereotyping of some TVET trades to a specific gender, which promote masculine and feminine tendencies. Consequently, TVET enrolment and retention in Uganda have remained low, with inadequate systematic data for different TVET programs. Similarly, advocacy for national gender policies and TVET is still limited, with homogeneous policy strategies for rural and urban settings, despite conditions for and against policy dissemination and implementation in the two contexts. Thus, the aforementioned barriers cannot enhance TVET enrolment and retention, especially for the youths and women who are the majority in the country. As a result, gender-biased TVET participation, unemployment, high TVET drop-outs, low technology and

innovation, white-collar job syndrome, poverty, gender stereotypes and inequities persist. Existing studies mostly focused on factors influencing access to, retention and participation in TVET. What remains unknown is how these factors as attributes of gender policies contribute to the equitable participation of VTI students in TVET. This study, therefore, purposed to investigate the contribution of gender policies in TVET to gender equity among VTI students in the Central Region of Uganda.

1.4 Purpose of the Study

The study investigated the contribution of gender policies in TVET to gender equity among VTI students in the Central Region of Uganda.

1.4.1 Specific Objectives of the study

The study objectives were to:

- i) Establish the gender-based trends in TVET enrolment and retention of VTI students between 2013 and 2017 in the Central Region, Uganda.
- ii) Examine the contribution of TVET policy advocacy strategies to gender equity among VTI students in Central Region, Uganda.
- iii) Explore the contribution of financial resources to gender equity among VTI students in Central Region, Uganda
- iv) Establish the contribution of learner-friendly learning environments to gender equity among VTI students in Central Region, Uganda.
- v) Propose policy interventions that can boost gender equity in TVET programs among VTI students in the Central Region, Uganda.

1.4.2 Research Questions Guiding the Study

The research questions for this study were:

- i) What gender-based trends exist in the enrolment and retention of VTI students between 2013 and 2017 in Central Region, Uganda?
- ii) What is the contribution of TVET policy advocacy strategies to gender equity among VTI students in Central Region, Uganda?
- iii) What is the contribution of TVET financial resources to gender equity among VTI students in the Central Region, Uganda?
- iv) How do TVET learner-friendly learning environments contribute to gender equity among VTI students in Central Region, Uganda?
- v) What policy interventions can boost gender equity among VTI students in TVET programs in the Central Region, Uganda?

1.5 Significance of the Study

The findings of this study could act as references for different stakeholders. For instance, the existent gaps in policy dissemination, implementation, and evaluation could serve as a basis for a policy review in government departments and other actors, to address gender inequities in TVET.

Uganda's MoES and Ministry of Gender, Labour and Social Development (MoGLSD) might attain a statistics base for students' enrolment, participation, and transition rates in TVET, which could be used to complement or validate their data. The social services committee of parliament may use the results to improve budgeting and funding for TVET. Policy implementers of NSGE and BTNET strategic plans like commissioners of education, researchers, institutional heads,

instructors, and students might utilize the results to identify best practices and strategies that enhance skills development and gender equity. The study report might also act as a reference resource in public institutions, which researchers and lecturers could utilize for experience sharing, training, and further research.

1.6 Limitations and Delimitations of the Study

The study presented some weaknesses as limitations and was also narrowed in scope depicted as delimitations.

1.6.1 Limitations of the Study

The study population comprised beneficiaries and implementers of the gender policies in TVET institutions in the Central Region, Uganda. The study hence employed appropriate sampling techniques to attain a representative sample. However, one of the TVET institutions proposed for this study was not fully operational at the time of data collection because of variations in their study schedules. Thus, another institute with related TVET trades and locations as that proposed was used. Whereas the study intended to analyse available learning resources for gender inequities, all rural-based institutes lacked libraries, hence their teaching resources could not be analysed. The study also experienced some delays in receiving the ethical clearances, which delayed both the pilot study and the data collection process. Additionally, some proposed participants like United Nations officials declined to participate in the study. Hence, other participants with similar characteristics were identified and willingly participated in the study. To mitigate the receipt of biased and untrue information, the right ethical procedures were followed. More so, the large study locale with some of the

sampled institutes located in very remote and hard-to-locate areas slowed the data collection process. Therefore, research schedules with the selected TVET institutions were drawn and interview appointments were made with Participants to increase flexibility in data collection (Creswell, 2014). Similarly, the inter-coder technique and triangulation were used to minimize study bias and increase the reliability of the study findings (Creswell, 2013). Movements to conduct the study were affected by Corona Virus surge and the subsequent ‘lockdowns’. Therefore, some study activities were conducted online including mentorship, collaboration, and confirmation of study findings.

1.6.2 Delimitations of the Study

This study hinged on two education indicators that are: enrolment/access and participation/retention. Other attributes like learning outcomes and life-long learning were not studied. This study also focused on TVET in middle-level institutions due to scanty research at that level, unlike other institutions of higher learning. Equally, six TVET trades were studied: Agriculture and Home Science (AHS), Nursing, Wood Work Technology (WWT), Electricity (EI), Building and Construction (BCP), and Tailoring and Garment Designs (TGD). Other trades like motor vehicle technology, hairdressing, and business studies were not studied because they were not uniformly distributed in all TVET institutions in Central Region, Uganda. Likewise, parents, guardians and sponsors did not comprise the study population, with assumptions that students ably provided desired information about the familial contribution to TVET access and participation. This study was restricted to two national policies: NSGE in Uganda (2013) and

the BTVET strategic plan (2011/12-2021/22). Similarly, three attributes of these policies including TVET policy advocacy, learner-friendly environments and financial resources were studied. Other attributes of the policies like sexual abuse, early sexual engagements and teenage pregnancies were not studied because some recent studies had keenly focused on their impact on education access and participation in Uganda (Jones, 2011; Molyneaux, 2011). Likewise, data on TVET access and retention between 2013 and 2017 were studied to establish gender-based trends in enrolment and retention. Data before 2013 was not studied because the cumulative effect of the former policies could be exhibited in the latter being studied.

1.7 Assumptions of the Study

The following assumptions were used in this study. TVET institutions were assumed to have gender-aggregated records of students' enrolment and transition from 2013. This was however not true for all institutions but the study used the available enrolment records to calculate students' transition trends in the various VTI. Equally, the study assumed that VTIs were implementing the gender policies' attributes of TVET and policy advocacy, financial resources, and learning environments. Further, it was assumed that gender policy attributes of policy advocacy, financial resources, and learner-friendly environments influence the participation of male and female students in TVET. Lastly, the study assumed that the selected VTI and programs had representative male and female students to present views for both genders. According to the findings, some institutions lacked students of both genders in sufficient numbers, and some attributes of

gender policies were not fully operational or existent, which impacted gender equity among the students.

1.8 Theoretical and Conceptual Frameworks of the Study

This study was guided by the following theoretical and conceptual frameworks.

1.8.1 Theoretical Framework of the Study

The two theories that guided the conceptualisations of this study are the Feminist Socialisation Theory (FST) in education (Thompson, 2003) and the Subject-Task-Value (STV) Theory (Eccles, 2005). Two theories were used because the FST and STV theories were inadequate in tenets to address all objectives of this study. Notably, the tenets of FST captured objectives 1, 3, 4, and 5 while tenets of STV theory addressed objective 2, and enriched objectives 1 and 3. The two theories were employed in the discussion of study findings to indicate findings that conform to the tenets of these theories and those that diverge from their propositions.

Firstly, the FST demands equal treatment of men and women, using its liberal approach to solving problems like gender inequities. The feminist socialisation theorists encouraged the use of rational educational programs and corrective affirmative policies (Thompson, 2003, pp. 14-15). For this study, TVET was noted as the liberal dimension through which gender inequities were addressed using gender policies. Hence, objective 5 proposed policy interventions that can boost gender equity among VTI students in TVET programs, hence generating corrective affirmative policies for gender equity.

The FST further posits that girls have the potential to perform well in science and maths-based subjects, just like boys (Thompson, 2003, p.7). However, these subjects have been gender-stereotyped to relate to males, resulting in gender inequities. Therefore, objective one of this study established gender trends in the enrolment and retention of male and female students in TVET between 2013 and 2017. The FST also suggests several strategies for promoting gender equity in education including fair treatment of males and females by teachers and parents, equitable pedagogical interventions for teachers, parents and school administrators, and addressing personal socialized perceptions, dependent on the larger support system (Thompson, 2003, p.15). The larger support system may include textbooks and other media, unbiased and objective curricula, and support of parents and male teachers for feminist teachers' initiatives. Thus, objective 4 explored the contributions of TVET learner-friendly learning environments to gender equity among VTI students while objective 5 proposed policy interventions for boosting gender equity among VTI students.

Additionally, the FST proposes increment improvements as a long-term strategy for a more equitable society. These increments motivate instructors and contribute to a conducive learning environment, which improves enrolment and participation in TVET. Therefore, objective 3 for this study explored the contribution of TVET financial resources to gender equity among VTI students in Uganda.

The FST has been used in this study just like it was in public health research to advocate and promote equality and justice in society (Willis, et al., 2007).

Furthermore, the STV theory was used due to its keen focus on student-related factors that can contribute to gender equity in TVET like students' interests, motivation, and policy-related factors like policy dissemination. The STV theory argues that students' motivations and achievement-related choices are influenced by their expectations to succeed and subjective-task values (Eccles, 2005). Hence, equitable participation in TVET and choice of TVET trade are influenced by one's interests and motivations, and how valuable TVET is to him/her. Likewise, objective one of this study established TVET gender trends in enrolment and retention of VTI students between 2013 and 2017, while objective 2 analysed the contribution of TVET policy advocacy strategies to gender equity among VTI students in Central Region, Uganda.

Accordingly, STV emphasizes four value dimensions including attainment value, intrinsic value, utility value, and cost value. Attainment value relates to one's ability to excel while the 'utility value' denotes the relevance of the choice taken. For this study, the attainment value was anticipated to impact institutional and individual choices of TVET trades, also determined by grades at lower educational levels. Likewise, the 'intrinsic value' describes one's level of enjoyment while the 'cost value' recounts sacrifice in form of time, efforts, funds, and valued alternatives. These values influence one's enrolment and retention in TVET, for instance, costs of extra time, resilience, funds, and efforts. Equally, objective 3 investigated the contribution of TVET financial resources to gender equity among VTI students in the Central region of Uganda, influenced by the four values of STV theory.

This theory has also been employed in other studies to assess how interest and motivation influence learning outcomes (Ball, Huang, Cotten, Rikard, & Coleman, 2016), and how the science-based education policy has impacted girls' education access in Uganda (Opit, 2014).

1.8.2 Conceptual Framework of the Study

The conceptual framework in Figure 1.1 reveals the independent variables as attributes of TVET and gender policies while the dependent variable is gender equity. The indicators of gender equity are enrolment trends, transition trends, enrolment guidelines, distribution of funding avenues, and learning resources. Thus, Figure 1.1 shows that gender policies' attributes like TVET policy advocacy strategies, improving learning environments, and increasing TVET funding can boost gender equity in TVET. Nonetheless, enrolment and retention in TVET are constrained by multiple factors including sociocultural factors like gender stereotypes, community factors and family income. Equally, institutional factors like enrolment, transition and drop-out rates, unfriendly learning environments and inadequate human resources affect gender equity. Further, policy-related factors involving gaps in policy and practice, TVET budgets and funding, the science divide and grades scored at lower education levels influence participation in TVET. Similarly, student-related constraints like interests, attitudes, grades and life skills influence their participation in TVET which hinders gender equity. These barriers are further aggravated by values of relevance, cost, interest, and choice for TVET. This not only leads to low TVET enrolments but also the gendered choice of TVET programs like females and

males dominating the traditional and non-traditional TVET trades respectively. For example, students may opt to enrol in either traditional or non-traditional TVET programs due to sponsorship, grades at lower education levels, and career guidance, which contribute to equitable participation. Consequently, gender stereotyping and inequities arise from the inculcation of feminine and masculine ideologies among students, which further influences students' attitudes and aspirations toward TVET.

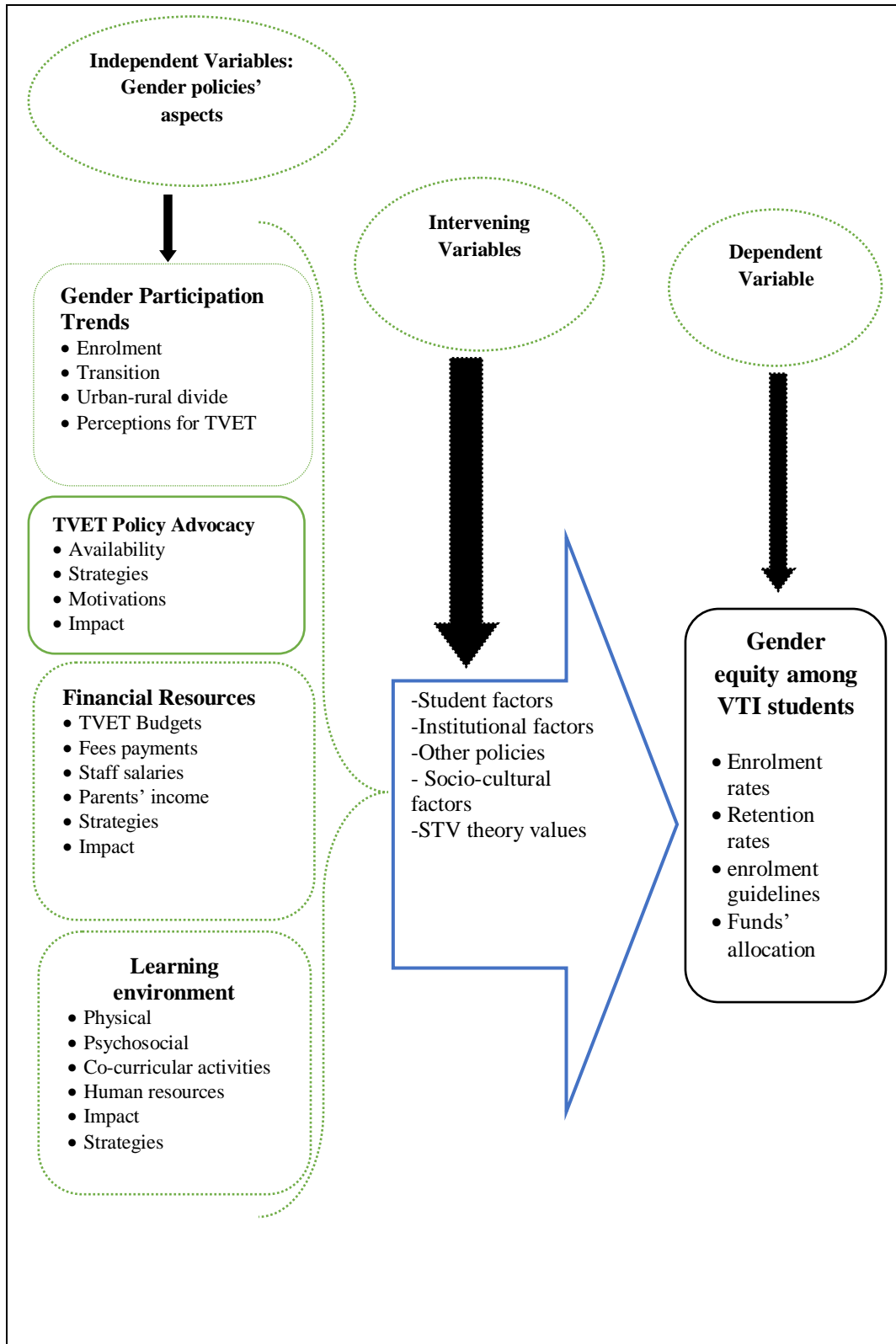


Figure 1.1: Conceptualisations of the research variables (2019)

1.9 Operational Definition of Terms

Fair Treatment: Refers to offering male and female students equal opportunities in learning, class discussions, enrolment, and leadership, among other aspects of the learning environment.

Financial resources: Refers to funding in form of capital grants, scholarships, appropriate remunerations for staff, timely and adequate resources, increased budgeting, public-private partnerships, and parents' income.

Gender: Refers to being male or female and the roles related to each sex.

Gender equity: Refers to fairness in students' enrolment, retention, and allocation of resources in selected TVET programs.

Gender policies: Refers to the NSGE in Uganda and BTVET strategic plan (2011/12-2021-22). The study was limited to the following attributes of these policies including policy advocacy, sensitization and career guidance, learner-friendly learning environments, and financial resources in TVET.

Human Resources: Refers to role model instructors and students, female and male instructors, counsellors, and the support of male instructors, institutional leaders, and community leaders for gender equity initiatives.

Institutional Leaders: Refers to Principals, Deputy Principals, and academic registrars of TVET institutions.

Learner-friendly Resources and Institutions: Refer to physical learning facilities, resources, and psycho-social learning environments. Physical facilities include well-equipped classrooms and workshops, gender-sensitive curricula, textbooks and other learning resources, hostel and sanitation facilities, human resources, and co-curricular facilities. The psycho-social environment includes guidance and counselling, instructor-learner interactions, instructor-student ratios, distribution of instructors' time and energy, students' motivations, career guidance, and allocation of tasks and rewards in class.

Non-traditional TVET Trades: refers to TVET programs or courses that have not been affiliated with females for example WWT, BCP and Electricity

Policy Advocacy Strategies: refers to enrolment guidelines, policy dissemination, research in TVET, programs for promoting gender-sensitive TVET, publicity avenues, and periodic policy evaluation.

Role model instructors: refers to female or male instructors in non-traditional or traditional TVET trades respectively.

Role model students: refers to female or male students in non-traditional and traditional TVET trades respectively.

Technical, Vocational Education and Training (TVET): Means the acquisition or development of knowledge and skills in technical courses of TGD, WWT, Electricity, BCP, Nursing, and AHS in Uganda.

Traditional TVET Trades: refer to TVET programs or courses that have been affiliated with females for example TGD, AHS and Nursing.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter presents literature related to gender policies and gender equity. The literature is presented thematically according to the study objectives. The thematic literature review is done under the following themes: gender trends in students' enrolment and transition in TVET, the contribution of TVET advocacy strategies to gender equity, the contribution of financial resources to gender equity, the contribution of Learner-Friendly Environment (LFE) to gender equity, and policy interventions that can boost gender equity in TVET programs. Lastly, the reviewed literature was summarised and the gaps of knowledge filled by this study were indicated.

2.2 Gender Trends in Students' Enrolment and Participation

Modern economies require knowledge and skills that are relevant and practical like in TVET. Similarly, promoting equitable access and retention in TVET has been widely linked to community, societal and personal development.

2.2.1 Students' Enrolment Trends in TVET

Globally, data on enrolment trends in TVET is evident, where students enrol as either full-time or part-time students (Wheelahan & Moddie, 2016). Their regional-based desktop survey titled 'Global Trends in TVET' in secondary schools showed that TVET enrolment dropped from 28% in 1999 to 24% in 2009 in developed regions. In Sub-Saharan Africa (SSA), enrolment had increased

(Marope, Chakroun & Holmes, 2015, as cited in Wheelahan & Moddie, 2016). More recent statistics from the UNESCO Institute of Statistics (UIS) present TVET enrolment trends of 23.7% and 89% at upper secondary (International Standard Classification of Education (ISCED) 3) and tertiary levels (ISCED 4) respectively (Table 2.1). These trends were influenced by available alternative education options in the different regions. Their findings showed that the urban-rural divide influenced enrolment and participation in TVET. However, their study was conducted using secondary data about TVET enrolment in secondary and post-secondary non-Vocational Training Institutions (VTI). The current study was conducted in mid-level VTI and generated data for enrolment and transition trends using primary data thus filling the knowledge for TVET participation for that academic level.

Table 2.1: Millions of students' enrolment in ISCED 3, ISCED 4 and TVET percentage enrolment by region

Regions	ISCED 3		ISCED 4	
	Enrolment	%TVET	Enrolment	%TVET
East and Pacific	68.3	41.3	2.5	81.3
Europe and Central Asia	22.6	47.3	2.1	91.9
Latin American & Caribbean	24.3	12.8	0.9	97.0
Middle East & North Africa	12.5	24.4	0.3	92
North America	13.2	0.9	1.2	100
South Asia	69.2	3.6	0.9	97
Sub-Saharan Africa	10.2	18.0	0.5	61.6
Total	231	23.7	8.3	89.2

Source: *UIS (2016, cited in Wheelahan & Moddie, 2016, p. 29).*

According to a study by Kushmakar (2016) in Nepal dubbed ‘Gender equality and social inclusion in vocational education and training, encouraging data was recorded in female participation at 56% (101) compared to males at 44% (78). Results revealed low females in non-traditional trades and occupations (no female in building electrician) while high female participation was recorded in tailoring, and beauticians, which are traditional occupations. The mean value of female trainee participation was about two-thirds of that of males in TVET programmes. A survey research strategy was utilised, where both qualitative and quantitative data were collected from a sample of public technical schools. The study targeted females and disadvantaged groups in non-traditional trades and occupations. The current study filled the gap between female and male students’ participation in traditional and non-traditional trades, to ascertain the level of TVET participation among VTI students.

Additionally, studies by International Labour Organisation (ILO, 2016) in the Lao Democratic People's Republic (DPR) showed that the rural-urban divide impacted TVET participation. Their study noted that the percentage of TVET participation was less than 5% in urban areas, 2.2% in rural areas with roads, and 1.3% in rural areas without roads. Similarly, 51% of TVET trainees were from urban settings, 45% were from rural areas with roads, and 5% were from rural areas without roads. Contrary, the same study showed that the enrolment rate of students increased by 11% between 2005 and 2010 in Mongolia. Still, female and male students represented 47% and 53% respectively of the total enrolment in TVET institutes in 2009-2010 (ILO, 2016). However, this study did not explore if there

was a significant difference in students' enrolment based on the rural-urban divide. The current study explored the difference in students' enrolment based on set-up, thus generating richer data for students' enrolment and participation trends.

Matsolo, Ningpuanyeh, and Susuman (2018) investigated and analysed Higher Education Institutions (HEI) enrolment and dropout rates within Gauteng province in South Africa using secondary data from household surveys. Table 2.2 depicts the gender-based rates in enrolment.

Table 2.2: Percentage enrolment of male and female students in HEI in South Africa

Gender	Enrolled in 2012		Not Enrolled in 2012		Overall enrolment %
	N	%	N	%	
Male	2004	81.53	454	18.47	50.35
Female	1976	80.26	486	19.74	49.64
Total	3980		940		

Source: Matsolo, et al., (2018, p. 70)

According to Table 2.2, it was noted that South Africa has registered nearly parity enrolment of male 50.4% (2004) and female 49.6% (1976) students in HEI. However, a high drop-out rate was also recorded due to finances, orphanhood, transport to HEI, and unplanned pregnancies. Their study was limited to HEI and not VTI, thus its findings could not relate to TVET for VTI where the current study was conducted.

Further, Iddrisu (2016) in Ghana studied 'Universal Basic Education and its impact on enrolment and retention.' His study was conducted in 20 public basic schools, where 10 were treatment schools and 10 were control schools. Public

schools did not charge students capitation grants, with free books and meals for students who come to school. The treatment schools were not charging admission, examination, and admission fees, unlike the control schools which were charging all those fees. Descriptive statistics on gross enrolment and retention rates were used in the study. Results revealed that the enrolment rate for the 2008/2009 academic years in treatment schools was 7.7%, 1.6% higher than the enrolment in control schools. The difference in enrolment rate further increased in the 2010/2011 and 2013/2014 academic years by 5.3% and 16.2 % higher in treatment schools than control schools respectively, with the highest increase of 16.2%. This increase in enrolment rates brought pressure on schools' infrastructure. Results further showed a higher enrolment rate for boys than girls with the highest percentage increase of 7.2% in the 2012/2013 academic years. Effective implementation of financial attributes of the policies (no admission, examination, and entrance fees) was argued to contribute to increased enrolment. This was explained by the much lower enrolment of girls than boys in control schools which were charging different fees. Similarly, girls' enrolment in the control schools was recorded as the same in the 2008/2009 and 2012/2013 academic years with a 0% increase (1433). His study was however conducted in primary schools, and these findings could not apply to TVET. Thus, the current study was conducted in public VTI which generated varied enrolment trends and filled the knowledge gap for TVET participation at that education level.

According to a desktop review in Kenya by Ngugi and Muthima (2017), TVET enrolment trends between 2010 and 2014 steadily increased from 82,653 in 2010

to 148,142 in 2014 showing a 23% increase. Interestingly, the percentage increase in enrolment gradually decreased from 25%, 15%, and 9% in the 2011/2012, 2012/2013, and 2013/2014 academic years respectively. Their study further showed great disparities in enrolment according to gender, with males dominating females over the years. Enrolment of males and females was 60.5% and 39.5% in 2012 compared to 60.59% and 39.41% in 2014 respectively. Enrolment of females in technical courses and STEM was also cited to lag compared to males. Their study however keenly focused on the status of female participation in STEM and TVET, using secondary data from major policy documents. The current study targeted both male and female students and collected primary data from VTI in Central Region, Uganda, thus introducing a knowledge dimension in this field.

Equally, Opit (2014) studied the 'impact of Uganda Government science-based university sponsorship policy (UGSBUSP) on girls' participation in sciences at Advanced level (A' level) in Uganda.' The study showed that male and female students' enrolment did not significantly increase five years before and after policy inception (Table 2.3.). Nonetheless, girls' and boys' enrolment in sciences continually increased before and after policy inception with the lowest increase of girls and boys at 113 (44%) and 242 (62%) respectively in 1999. Likewise, the highest enrolment of girls and boys in science subjects was 153 (62%) and 255 (61%) respectively in 2003. After policy inception, the trends in students' enrolment rates registered a decrease for both genders (see Table 2.3). However, the decrease for females was more than that for male students. Her study was

however conducted in two districts of Central Region, Uganda using a cross-sectional survey design. She targeted 2,760 Participants including students, science teachers, school administrators, headteachers, MoES, and district officials. The study was also limited to girls' enrolment in science-based subject combinations in secondary schools in two districts. Therefore, the current study focused on both male and female students' enrolment and transition trends in TVET institutions in six districts of Central Region, Uganda, thus providing richer data on both enrolment and transition rates of students in VTI. More so, a bigger target population (6,158) was used to generate more comprehensive data on enrolment and retention in TVET.

Table 2.3: Students' enrolment trends in sciences at A' level before and after UGSBUSP inception

Gender/Years	Pre-policy Era		Policy Era	
	1999	2003	2007	2011
Males (Boys)	242 (62%)	225(61%)	199 (60%)	225 (52%)
Females (Girls)	113 (44%)	153 (56%)	277 (68%)	312 (61%)

Source: Opit (2014, pp. 81-82)

2.2.2 Transition and Retention Trends in TVET

There is varying TVET participation in developing and developed countries. Participation rates for developing and developed economies in TVET are 15% and 50-70% respectively (UIS, 2016, in Wheelahan & Moddie, 2016). Likewise, TVET skills are acquired through either non-formal vocational education or informal traditional apprenticeship. Therefore, available data in many African countries may not represent the actual participation rates in TVET (Wheelahan & Moddie, 2016). Thus, there's a need to document transition and retention rates in

formal VTI in the Central Region, Uganda as an avenue for addressing poverty and unemployment.

Hongmei, et al., (2015) also explored ‘the drop-out rates and causes of dropout in Upper Secondary TVET schools in China’ using a sample of 7414 students from one inland and one coastal province. The study noted dropout rates of 10.7% in both provinces, while 22% was noted in poorer inland areas, suggestive of major gaps and disparities in TVET. Additionally, baseline academic performance, maternal education, and migration were cited as strong correlates for students’ dropout while financial constraints were weak correlates. Their study used quantitative methods, correlational research design, and one research instrument and was conducted in secondary schools. The current study adopted mixed methods research design, multiple methods of data collection, and multiple indicators of equitable participation including enrolment, retention, and dropout rates of VTI students, thus producing richer data for TVET retention and transition.

Additionally, Vidyakala and Vaishnavi (2017) explored factors influencing student absenteeism in schools in India. Adopting a descriptive research design, 159 Participants were involved in the study, while both descriptive and correlation analyses were used. Results showed that personal factors, school climate, family, peers, teachers, community, disease, and e-media influenced school absenteeism. The mean for personal factors (3.54) school climate (3.22), family (3.31), peers (3.41), teachers (3.32), community (3.52), and e-media (3.61) were recorded respectively. Inferences showed a positive relationship between the gender of

students, teacher factors, and student absenteeism while home location, diseases, and family annual income negatively impacted student absenteeism. Their study took a quantitative orientation, with a smaller sample size while the current study used a mixed-methods research design, a bigger sample size (260), and examined students' transition trends in VTI, to ascertain completion rates in TVET.

Another study by Santhya, Jejeebhoy, Zavier, Acharya and Shah (2014) explored family, school, and community factors that support girls' transition to secondary education in India. Adopting the randomized control trial design, two questionnaires were developed and used in data collection of household and personal data from the girls respectively. The results showed that girls of class 8 and 9 attended schools by 72% and 74% respectively. More than a quarter of the girls had missed one or more days weekly while 12% of either class 8 or 9 girls have missed class continuously in the current academic year. The study cited household-related factors like domestic chores, engagement in paid and unpaid work, and family functions as the most promoter of absenteeism, followed by illness and lack of interest, transport to and from schools, work, and school location outside the area of residence. Their study targeted female students in primary schools and was conducted in a rural setting in India, while the current study focused on the retention and transition of both male and female students in VTI and was conducted in a metropolitan area in Central Region, Uganda.

For South Africa, a drop-out rate of 45% undermines the access gain for HEI (Matsolo, et al., 2018). Financial challenges were cited as the commonest reasons that hinder the participation of black students in higher education. Accordingly,

the Department of Higher Education cited a 30% (36000) dropout of students who enrolled in higher education (120,000) within the first year. Further, a 20% (24000) dropout rate was noted in the subsequent second and third years. Thus in 2001, the participation rate was targetted at 20% over 10 to 15 years. Nonetheless, a drop in participation rate was recorded from 16.1% in 2004 to 14.5% in 2006. Currently, some institutions have registered a dropout rate as high as 80% (Matsolo, et al., 2018). One of the main reasons students drop out is inadequate academic and psychological preparation (Matsolo et al., 2018). However, their study was conducted in HEI and not VTI and did not assess the gender-based transition trends of students. Thus, the current study filled the knowledge gap for TVET retention and transition rates in VTI in the developing world.

Furthermore, not all students completed basic education in Ghana (Iddrisu, 2016). Therefore dropout rates of 1.6% and 2.4% for treatment and control schools respectively were noted in 2009/2010. These rates increased to 1.8% in 2011/2012 and dropped to 1.3% in 2014/2015 in treatment schools. For control schools, dropout rates were 2.4%, 1.3%, 1.7%, 1.1% and 0.7% for 2009/2010, 2010/2011, 2011/2012 , 2012/2013 and 2013/2014 academic years respectively (Iddrisu, 2016). His study further showed 6.6% more boys than girls retention rates in the 2008/2009 academic years. Similarly, more boys than girls' retention rates of 7.2%, 8.3%, and 9.3% were recorded in the 2009/2010, 2014/2015, and 2010/2011 academic years respectively. High adherence to policies of eliminating admission, examination, and entrance examination fees affected girls' transition and retention in school. This study was however conducted in primary schools

and hinged on how policies related to the elimination of funds impacted students' retention rates. The current study took a more holistic approach and explored how TVET advocacy strategies, financial resources, and learning environment attributes of policies impacted equitable participation among VTI students in the Central region of Uganda.

In Ethiopia, Dereje (2021) recently conducted a gender-based assessment of the science, technology, and innovation (STI) ecosystem. The study showed that participation of females in the STI ecosystem was low among undergraduate students between 2014 and 2019 with percentage enrolment at 31%, 29.4%, 30.7%, 31.4%, and 34.4% for five respective years. The percentage of postgraduate students in science and technology was 30.8%, 19%, 14.7%, 15%, and 15.6% for the five consecutive academic years. Their study was however focused on university students and key Participants from the ministry of science and higher education, the ministry of education, and the UN agencies. The current study was conducted in mid-level TVET institutions where scanty research exists in Uganda. The study also engaged multiple Participants, thus contributing to the knowledge gap for TVET retention rates among VTI students.

Ngugi and Muthima (2017) further studied factors affecting the participation of females in TVET in Kenya. According to Githitu (2011, as cited in Ngugi & Muthima, 2017), curricula, gender, socioeconomic status (SES), age, and academic performance of Participants affected their attitudes towards youth polytechnics. Most respondents had a negative attitude towards the kind of programs offered by the institutions. Likewise, personal aspirations and high

value committed to academic education discouraged students from pursuing the available TVET courses. The study further found a significant association between SES, gender, academic performance in secondary schools, and students' attitudes towards youth polytechnics, while age had an insignificant relationship.

According to Education and Sports Sector Annual Performance Report (ESSAPR) 2016-2017, TVET enrolment in Uganda progressively increased from 105,905 students (41,943 females and 63,957 males) in 2016 to 109,312 (39,332 females and 69,980 males) in 2017 (MoES, 2017). However, this survey did not indicate students' transition rates from one year of study to another. The current study thus documented students' transition trends between 2013 and 2017, thus generating a more comprehensive analysis of TVET transition and retention in Uganda.

2.3 Contribution of TVET Policy Advocacy Strategies to Gender Equity among Students

While prior strategies emphasized universal access to basic education, the global 2030 education agenda supports lifelong learning opportunities including vocational education, higher education, and adult literacy (UNESCO, 2016a). Despite most of the agenda targets having implications for TVET, two of them target equal access to affordable and quality TVET for all genders, and increasing the number of youth and adults with relevant TVET skills is explicit (UNESCO, 2016a).

2.3.1 TVET Status Quo

Wheelahlan and Moddie (2016) reported a low status of TVET compared to other tertiary academic routes. TVET was further perceived as a siding for low

academic achievers and not an alternative for learners with good academic competencies. They recommended diversified and innovative sources of funds for TVET as a form of advocacy. The researchers concluded that TVET advocacy required both political will and information strategies. Their study was limited to a few advocacy avenues; while this study embraced multiple advocacy avenues for TVET like research, publicity programs, policy dissemination and evaluation, and joint contribution of all stakeholders for instance families, communities, and institutions. This was intended to provide a detailed analysis of how TVET advocacy contributed to gender equity among VTI students, where knowledge was scanty.

Similarly, Gore and colleagues (2017) investigated the VET aspirations of primary and secondary schools in Australia. Their study targeted more than 6000 students, and employed the survey strategy, focus group discussions, and interviews with students, some of their parents/caretakers, teachers, and career advisors to generate a unique account of interest in TVET. Both descriptive and logistic regression were used in the analysis of study findings. Results revealed that only 13.9% chose TVET as the highest education level while the majority (50.3%) chose university education. Likewise, gender (male, OR=1.33) and school location (metropolitan, OR=1.41) had a weak effect on choosing VET, with male students and those from metropolitan locations, more likely to choose TVET. Further, students' social economic status (SES) (low SES, OR=2.17, middle SES, OR=2.15, and high SES, OR=1.81) and years of study (Years 7-8, 9-10, OR=2.02, Years 3-4, OR=1.41) were significant predictors of interest in

TVET. Their study focused on the contributors to students' interest while the current study hinged on the equitable participation of students as influenced by multiple factors, thus introducing a unique dimension about how TVET advocacy, financing, and learning environments contribute to gender equity among VTI students in Uganda.

Likewise, a study by Shahrin, Normala, Irdyanti, & Noor (2020) identified 'pull and push' factors affecting TVET programmes in Malaysia. Their quantitative study revealed students' career prospects and interests as the main pull and push factors that respectively influenced students' enrolment in TVET. Their study was however limited to exploring the pull and push factors but did not show how these factors influenced students' enrolment. Thus, the current study explored the different advocacy strategies in TVET and how they contribute to equitable participation among VTI students, as a way of reporting the current TVET status quo, especially in developing countries where unemployment is still evident.

According to the compiled assessment studies on TVET by International Labour Organisation (ILO) using secondary and primary data, formal TVET institutes in Mongolia significantly increased over the years (ILO, 2016). Therefore, public institutes increased from 35 to 44 between 2005 and 2010 while private institutes grew from 3 to 19. Likewise, TVET institutes in urban areas increased from 30% in 2005 to 40% in 2010. Consequently, an average annual enrolment rate of 11% was registered in public institutes in both urban and rural areas. However, growth in enrolment was more significant in urban areas. The positive trend in students' enrolment was linked to high demands for technical and vocational skills in

Mongolia's labour market, as well as improved perceptions and awareness of TVET benefits.

Equally, Ahmed, Wadood, and Mohammad (2020) in Pakistan cited that the rural-urban divide influenced the distribution of TVET-qualified women in their respective labour markets in the province, with 60.6% (108) women in urban areas while 39.3% (70) were traced in rural areas. Consequently, the rural-urban divide influenced the distribution of TVET trainees according to their training period. For instance, 18.4% and 15.5% were registered for three months of TVET qualification in rural and urban set-ups respectively, 27.1% and 24.1% for six months of TVET qualification in rural and urban set-ups respectively, while 28.2% and 30.6% were identified for 12 months' TVET qualification in rural and urban set-ups respectively. Their study just like the current study compared TVET enrolment and retention rates in rural and urban areas and factors for and against participation in both contexts as a form of TVET advocacy.

Okello (2012) in Uganda studied 'Factors that influence attitudes towards TVET in Uganda' and revealed that gender, government policies, technology, and sociocultural perspectives contribute to participation in TVET. He adopted a descriptive survey design and targeted 740 participants including students, lecturers, retired TVET professionals, and MoES officials. His study was however conducted in higher TVET institutions like universities, unlike the current study which was conducted in middle-level VTI where scanty research exists. His study was also limited to four attributes that enhance TVET participation, while the current study embraced multiple contributors to students' participation in TVET,

thus providing richer data and in-depth insights about equitable TVET participation. His study was also conducted 10 years back, and the current study brings up-to-date data related to different factors that enhance TVET advocacy among VTI students in Uganda.

2.3.2 Advocacy Strategies in TVET

Studies have shown different strategies for TVET advocacy including, research and publication, career guidance and counselling, social media, fliers and magazines, TVET policies, government, and political will, among others.

Accordingly, Atkins and Flint (2015) in their study about perceptions of Further Education (FE) in England revealed that serendipity and contingent events influenced students' choice of FE. Such events included: career guidance, future career goals, previous education grades, and familial influence. They concluded that TVET policies at University Technical Colleges might raise the esteem of specialised and elite TVET, but not the broader middle-level VET programs. Their study was qualitative in orientation with a sample of 60 students from two high schools and two FE colleges. Therefore, the current study was conducted in middle-level VTI in Uganda where participation was unknown, using a bigger sample size (260) and mixed-methods research design, to generate more comprehensive data on different TVET advocacy strategies and their contribution to gender equity.

Sullivan (2019) further studied 'teaching poster designs as graphic advocacy' and asserted that posters were powerful media for visual expression intended for

advocacy and consciousness-arising. Physically, they are argued to take up public space, arrest the eyes and demand the attention of passerbys. When circulated on social media, posters carry messages beyond the intended local audience and are vital tools for voicing support, raising awareness, and building communities of resistance. Resnick (2013, as cited in Sullivan, 2019) reported that socially-engaged posters communicate unfolding injustices or agendas in society, show solidarity, and avenues for fueling social justice and documentary evidence. Her study was however conducted in a developed setting while the current study was done in a developing country, and assessed posters as a form of TVET advocacy strategy, among other strategies and how they contribute to gender equity among VTI students.

Another study by ILO (2016) in Mongolia cited that vocational orientation and career guidance activities were conducted on an ad-hoc basis and requested by students from schools and higher institutes of learning. Notably, their education sector lacked a clear career guidance framework despite their enrolment rate increasing by 11% between 2005 and 2010. Likewise, females represented 47% of the total enrolment in TVET institutes between 2009 and 2010, 62% of full-time teachers, and 61% of all staff at TVET institutes. However, their study did not indicate whether the lack of a clear career guidance strategy contributed to an increase in students' enrolment. Additionally, vocational guidance and career counselling were also suggested at lower and upper secondary levels in the 2011-2015 education master plan for the Lao People's Democratic Republic (PDR). Their study presumed that the introduction of this strategy would counteract the

low participation in TVET (ILO, 2016). This study hence sought the extent of using different TVET advocacy strategies and their contribution to students' enrolment. This would thus indicate whether TVET policy advocacy has contributed to gender equity among VTI students in Uganda.

Pirzada (2020) in Pakistan studied improving access, equity, relevance, and quality of skills development through improved governance and PPP. He adopted a quantitative research methodology and cross-sectional design and targeted principals or senior management executives from provisional TVET associations and national VET commissions. 221 Participants participated in the study. 52% of the Participants agreed to use the UNESCO TVET strategies in their training and believed that youth unemployment, gender equity and equality, and sustainability, were useful UNESCO strategies. 38.5% and 54.3% accepted that the 17 Social Development Goals (SDGs) and social inclusion in TVET are useful. 62% and 49.8% supported the demand-driven TVET concept as well as learning and practising international TVET practices respectively. Their study was limited in methodology as a quantitative inquiry and hinged on agreement with the use of the TVET advocacy strategies for access, equity, relevance, and quality. The current study explored how the use of different advocacy strategies impacted the gender equity of students, employed the mixed-methods research design, and bigger sample size (260), thus generating richer data about how TVET advocacy strategies contribute to gender equity in a developing country.

According to Biji and Lawrence (2019), students' interests, new learning experiences, future career goals, and role models in the workplace encouraged

retention and attrition among civil and construction students in South African TVET. Their study was however limited to a few advocacy strategies that enhance retention in TVET and used a smaller sample size and qualitative data only. The current identified multiple advocacy strategies for promoting students' enrolment and retention, using both qualitative and quantitative data for diversification of views, thus producing a richer assessment.

Similarly, a study by Atari & Mckague (2015) in South Sudan reported that government will, political will and close collaborations of all stakeholders are paramount for enhancing TVET advocacy. Their study viewed TVET as a peace-building and development strategy and adopted a grounded theory qualitative approach. The current study perceived TVET as an avenue for enhancing equitable participation using the convergent-parallel mixed methods design and explored whether government and political will as advocacy strategies impacted equitable participation, thus introducing another knowledge dimension in TVET research.

Accordingly, Olelewe, Orji, Onisen, and Ikemelu (2019) studied 'Constraints and strategies for use of social networking sites (SNSs) for collaborative learning in tertiary institutions in Nigeria. Adopting a descriptive survey design, a sample of 195 TVET lecturers was purposively sampled from four institutes offering vocational and technical education. Their study, just like the current study utilized both descriptive and inferential statistics in analysis. The results of their study confirmed the use of 13 SNSs including Facebook, Twitter, and WhatsApp, among others for the promotion of collaborative learning. The current study

explored the use of SNSs as one of the strategies for TVET advocacy, and employed a bigger sample size, multiple Participants, and data collection tools, unlike their study which used a smaller sample, one research tool, and lecturers as participants for the study.

Furthermore, Adelokun, Oviawe, and Barfa (2015) explored strategies for enhancing female participation in TVET in Nigeria. Their study adopted a survey research design using questionnaires, interviews, and observation methods. A sample size of 153 female Participants including teachers and administrators in technical colleges and skills acquisition centres. Means and standard deviations were used to analyse the findings. Their study revealed multiple strategies including advocacy by government and policymakers to implement female-oriented programs, sensitization by government, policymakers, and stakeholders at all levels about the benefits of female participation in TVET, advocacy for public-private partnership, the establishment of equal opportunities for females and males, career guidance and counselling about TVET and enactment of policies that encourage gender-based participation. Their study recommended earmarking funds by the government and other stakeholders for the promotion of female-enhanced TVET programs. Their study was however limited to female students' participation and used a smaller sample size than the current study which used 260 Participants. The current study used multiple participants of both genders, which created diversified views about strategies for enhancing TVET participation for male and female students.

Another study by Cheruiyot and Wanyaga (2019) examined sustainable interventions for gender inclusion in selected TVET institutions. Their study employed a mixed-methods research design using questionnaires for students and academic staff, semi-structured interviews for managers and coordinators of gender centres, observation, and document analysis guides. Likewise, a sample of 452 respondents was selected from 4 public TVET institutes. Their study reported multiple impediments to sustainable gender equity interventions including inadequate funding for activities planned for gender equity, lack of gender awareness among students, staff, and institution managers, negative attitude towards gender issues, and lack of clear gender-policy guidelines at national levels of government, TVET stakeholders in education and the curriculum. Their study recommended the integration of practical tools to support programs that promote access and retention in TVET institutions. The current study hence ascertained whether the aforementioned TVET advocacy strategies, among others, enhance gender equity among VTI students in Uganda, using multiple methods and participants, hence producing diversified ideas for more concrete data.

Simiyu, as cited in Ngugi and Muthima (2017) revealed that students' backgrounds, gender and peer pressure had a greater influence on their career choices in TVET. Conversely, gender stereotypes depicting STEM-related courses as masculine hampered females from pursuing them. Likewise, social norms which regard women as caregivers impacted their choice of study fields and careers (World Bank, 2012, as cited in Ngugi & Muthima, 2017). Consequently, females preferred careers and trades that allow flexibility to balance

family and career responsibilities. Further, the use of role models like more female instructors and attaching female students to practising women in STEM was argued to boost the participation of females in TVET. Thus, confidence-building leads to positive perceptions of females towards TVET and science-based courses (Ngugi & Muthima, 2017). Their study however focused on the status of female students' participation in TVET and factors contributing to the status quo. The current study investigated the participation of both male and female students, and how the different TVET advocacy strategies contribute to gender equity among VTI students.

2.4 Financial Resources and Gender Equity of Students

For this study, financial resources refer to public-private partnership (PPP), TVET budget allocation, students' scholarships, loan schemes and fees weavers, staff remunerations and parents' income.

2.4.1 Public-Private Partnership (PPP)

Wheelahan & Moddie (2016) noted that vocational education is the most privatized sector, with assumptions that reducing training costs for TVET doesn't threaten the quality of education. For example, government-backed contingent loans in Technical and Further Education (TEFA) in Australia were given to both public and private TVET providers, which led to exponential enrolment growth. Thus, TAFE produced 81% of Equivalent Full-time (EFT) students in 2009, which reduced to 56% in 2014. Contrary, private TVET providers increased from 15% publicly-funded EFT students in 2009 to 40% in 2014. Similarly, the percentage of publicly-funded students in private TVET providers grew from 12%

in 2009 to 57% in 2014 (Wheelahan & Moddie, 2016). However, their study was limited to the contribution of PPP to students' enrolment, and not retention and transition. It also neglected other TVET funding avenues for example scholarships, and budget allocation, which the current study examined, and how they contribute to equitable participation among VTI students.

Furthermore, expensive provisions and up-to-date technological needs probed training institutions in Lao PDR to partner with private companies like Lao Toyota, among others (ILO, 2016). The researchers encouraged TVET institutions to build linkages and obtain donor funding, and one of their institutions received USD 800, 000 from the government of Korea, in addition to an exchange programme for teacher training (ibid). Nonetheless, their study did not indicate the contribution of such linkages and funding to the equitable participation of students. Hence, the current filled knowledge gaps about the contribution of public-private partnerships (PPP) to gender equity.

According to a desktop review by Oviawe (2018) in Nigeria, governments cannot single-handedly achieve the objective of enabling their learners to catch up with the changing living standards in a fast-growing technological world. Thus, TVET for skills development would be revamped by PPP in terms of training and retraining of staff and students, provision of capital and expertise participation in curriculum development, networks, and access to modern production equipment, tools, machines and technical know-how. However, this review did not show how funding in the form of PPP can contribute to equitable participation among VTI students, which the current study did.

In Uganda, the ESSAPR 2013/2014 revealed a 7.5% decline in TVET enrolment in 2014 (Lyattu, 2014) and an increase of 3.2% in ESSAPR 2016/2017 (MoES, 2017). This increase was partly attributed to MoES recommendation of establishing private fully-registered and licensed institutions. Therefore, TVET institutions increased from 119 (103 public and 16 private) in 2016 to 129 (115 public and 14 private) institutions in 2017 (MoES, 2017). These reports showed gender aggregated data, undefined to different regions of Uganda. Therefore, the current study generated a detailed record of TVET enrolment and transition trends in the Central Region and described how PPP contributes to gender equity among VTI students, hence filling the existing knowledge gap.

Additionally, Kintu, Kitainge, and Farej (2019) explored ‘strategies for facilitating TVET graduates’ transition to the world of work (WoW).’ Their study adopted a descriptive survey design and targeted trainers, employers of TVET graduates, officials from skilling Uganda, Uganda employers’ union, the BTNET department for MoES, and TVET graduates in formal employment. Thus, a sample of 30 Participants was interviewed. Findings showed that institutional-industrial linkages would support graduates’ transitions to the WoW. Their study identified PPP as an avenue that supports the transition to WoW, employed a qualitative orientation, small sample size, and one method of data collection while the current study explored PPP as one of the strategies that enhance equitable participation, employed multiple methods of data collection and bigger sample size. This generated diversified data about how PPP enhances gender equity among VTI students in Uganda.

2.4.2 Budget Allocation in TVET

TVET financing is cited as a perennial challenge due to the high cost of construction, equipment, maintenance and the provision of consumable training materials. Consequently, TVET finance, instructor training, curriculum development and the delivery of instruction are affected. Ayonmike, Okwelle, and Okeke (2015) in the study dubbed 'Towards quality TVET programmes in Nigeria: challenges and improvement strategies' cited poor funding of TVET programmes as the key barrier to attaining quality. Therefore, the study suggested adequate funding as one of the strategies for improving the quality of TVET programs. Similarly, Edokolor and Dumbiri (2019) encouraged TVET managers to collaborate with stakeholders to provide funds that enhance physical facilities for effective teaching and learning. However, their study did not show the contribution of TVET funding to equitable participation among VTI students.

Additionally, the compiled assessment studies on TVET in Lao DPR and Mongolia revealed that TVET funding was majorly met by the government (ILO, 2016). For Mongolia, each youthful student aged below 25 years and enrolled in a public or private TVET centre received a fixed monthly stipend of 45,000 Mongolian Tugriks (MNT). This entitlement was however limited to youth below 25 years, hence presenting an equity challenge for those above that age. Inversely, Lao PDR varied her government budget share to TVET institutions from 30% to 98%, with the remaining budget being met by students' fees and other contributions (ibid). However, their study mostly used secondary data and a few key Participants' interviews, while the current study collected primary data about

TVET budget allocation and its contribution to equitable participation among VTI students.

For Adelokun, Oviawe and Barfa (2015) in Nigeria, poor provision of instructional materials to TVET institutions hampered the training of females in TVET. These challenges were also linked to inadequate budgets for TVET and low socio-economic status. Their study explored strategies for enhancing the participation of females in TVET using a sample of 153 female Participants

Likewise, Orodho (2014) conducted a study about the “Free Day Secondary Education policy (FDSE) and its implications for equity and quality of secondary education” in Kenya. The study adopted a mixed-method research design and targeted 136 participants including teachers and principals. He reported that technical education in Kenya receives a low budget percentage. For instance, TVET received 4.5% of the total education budget in 2009/2010 compared to 70% awarded to basic education. His study also showed minimal government support to FDSE (32.4%), causing dissatisfaction among head teachers and teachers. He noted that Kenya shillings (KSh.) 10,265 were grossly inadequate to meet the financial needs and operations of each student in school, coupled with the late dispatch of the fees. Consequently, this affected students’ regular school attendance, especially those from low socio-economic backgrounds. He suggested an increase in students’ fees from KSh.10,265 to KSh.32,747 and KSh. 33,707 for boys and girls respectively. The additional KSh. 960 were for girls to cater for their sanitary needs (Orodho, 2014, p. 5588). However, his study didn’t show how a low TVET budget impacts equitable access and retention among students.

Similarly, his study focused on how education funding policies contributed to equity and quality of educational outcomes in secondary schools. The current study identified how TVET budget allocation contributes to equitable participation among VTI students, hence enriching data for TVET research in mid-level institutions in Uganda.

Nyaundi (2018) further postulated that the budget allocation of Kenya shillings (KSH) 16 billion to TVET be augmented to enable institutions to propel the big four agenda, and commended one per cent of every total turnover to be channelled to TVET. He noted that TVET institutions were wrestling with inadequate training instructors, poor infrastructure, and no equipment. Moreso, learners face logistical challenges like the lack of institution buses to transport them to the institutions. These among other aspects promoted inequities, yet no study has shown how these different funding avenues contribute to equitable participation among VTI students.

For Uganda, a budget of 870 million United States Dollars (USD) was planned for the BTVET strategic plan over nine fiscal years (2012/13-2021/22). Forty per cent of this budget was earmarked for raising access and quality of TVET, and an estimated 433 billion Uganda Shillings (UGX) for capital grants and bursaries of students in formal TVET. Thus, enrolment for formal TVET was projected to rise from 42000 trainees to 103000 in 2019/20, with an annual growth of 10% (MoES, 2011, p. 8). Furthermore, MoES reported the release of students' capital grants in 2957 technical schools, community polytechnics, five training institutions and colleges of commerce respectively (ESSAPR 2013/2014, in Lyattu, 2014). No

study has been conducted to establish the contribution of such funding avenues to students' gender equity in formal TVET in Uganda. Thus the current study ascertained how these funding avenues contributed to gender equity among VTI students in the Central region of Uganda.

2.4.3 Staff remunerations

It is argued that staff remunerations promote gender equity. The UNESCO report (2016b) titled 'Teaching policies and learning outcomes in Sub-Saharan Africa' showed that young people are less interested in joining the teaching profession since 2000. This is linked to poor career prospects, the low social status accorded to the profession and poor remunerations. Education systems thus struggle to retain highly qualified teachers due to uncompetitive teachers' salaries that don't mitigate their day-to-day needs like housing (UNESCO, 2016b).

According to the Economic Policy institute assessment in the USA, there is an increase in the salary gaps among teachers, with teachers earning 17% less than their peers by 2015 (Miles & Katz, 2018). The average teacher's salary was less than their family living wage in about half of all states, thus insufficient to meet their regular expenditures on basic needs. Consequently, teachers with the greatest gap between salaries and a family living wage exhibited the most substantial signs of an unhealthy labour market compared to their counterparts whose teachers received 10 per cent above their living wage. Consequently, such states exhibited high teacher deficits and turnover rates of 16.6 per cent, thus promoting inequities. Their study focused on 'teachers' salaries as an equity issue

' and not a contributor to equitable participation, while the current study explored how staff remunerations contribute to gender equity among VTI students.

Further, Gemeda and Tynjala (2015) studied 'teachers' motivations for teaching and professional development in Ethiopia.' Their study targeted teachers, and employed interviews and focus group discussions using a sample of 32 teachers. The study noted that teachers' salaries and rewards were critical to their motivation and development. Zhilla (2013, as cited in Gemeda & Tynjala, 2015) also postulated that the receipt of financial compensation was perceived to satisfy and motivate workers. Subsequently, low teachers' salaries had a distressing impact on the whole education process, devaluing their work thus leading to the loss of teachers to better-paying professions.

For Obikwelu and Nwasor (2017) in Nigeria, male and female teachers perceived remunerations to influence their motivation for teaching. Their study employed the descriptive survey research design, researcher-developed questionnaires, and a sample of 104 teachers for secondary schools. The current study utilised a convergent-parallel mixed methods design, multiple methods of data collection, a bigger sample size, and explored how staff remunerations contribute to the equitable participation of students in TVET.

Equally, the ESSAPR 2016-2017 in Uganda reported very few teachers for TVET, despite an increase in the number of teachers in the country (MoES, 2017). The number of teachers was linked to unfavourable remunerations, which affect the quality of teaching due to unmotivated teachers. This study hence

investigated how staff remunerations contribute to equitable access and participation of students in TVET.

2.4.4 Funding, Loan schemes, Fees Weavers, and Scholarships

Funding promotes educational quality and equity. It promotes regular school attendance and prevents absenteeism and school dropouts (Orodho, 2014).

Drotos & Cilesiz (2016) in the USA studied shoes, dues, and other barriers to college attainment for students attending high-poverty urban high schools. The study was qualitative in orientation, where interviews and observations in six high-poverty schools were used for a year. 170 high school students participated in this study and 76 students (52 seniors and 24 juniors) were interviewed, while 10 classroom observations were conducted. Findings revealed that funds for college and daily survival were one of the requisites for students' enrolment, which depended on money, time, and information. Scanty resources created academic, emotional, and financial risks in the learning environment, and required high levels of courage and willingness to make significant sacrifices. Further, students' socioeconomic status compelled them to hold jobs, with long working hours, which compromised the available time for studying. However, their study was conducted in high schools in a developed country and took a qualitative orientation and a relatively smaller sample size. Thus, the current study was conducted in VTI in a developing country, employing mixed methods research design and a relatively bigger sample size. This generated varied ideas on the contribution of TVET funding to equitable participation in TVET.

Additionally, Matsolo, Ningpuanyeh, and Susuman (2018) studied factors affecting the enrolment rate of students in HEI in South Africa. The findings of their study noted that 92% of students did not receive financial assistance while 8% received it. The majority of the students were also privately sponsored, while a few students (7.8%) received financial assistance, bursaries or fee reductions in the 2011/2012 academic years. Many students depended on family income, loans and other means of funding their studies. While their study cited lack of finances (34.3%) as a major limitation to enrolment in higher education, only 22% accessed higher education on full bursaries or scholarships. Still, higher education in South Africa is very expensive with the majority of the students paying South African Rands (R) 20,000 (16%), R8000-20000 (24%) and R4000-8000 (12%). High correlation coefficients of 0.82 (fees) and 0.80 (transport) affirmed that the fees owed and modes of transport strongly influenced the enrolment rate of students in HEI. Contrary, bursaries and fee reductions/weavers had a weak link to students' enrolment rate ($r=0.24$). Their study focused on factors influencing enrolment rate in HEI, and not equitable participation among VTI students, which the current study did thus filling the gap in TVET research for developing countries.

Equally, Biji and Lawrence (2019) studied 'retention and attrition among civil and construction students in South African TVET.' Their study was qualitative in orientation and involved interviews with 6 students (3 who completed the course and 3 who dropped out). Results showed that financial constraints related to delayed publication of results, which was requisite for applying for funds

promoted dropout while state bursaries and provision of stationary motivated students to complete their program. Nonetheless, their study was qualitative and involved a small sample size (6) and one method of data collection. The current study adopted a convergent parallel mixed-methods design, used a bigger sample size (260), and multiple methods of data collection about financing avenues that promote equitable participation and retention in TVET.

Similarly, Obonyo (2013) studied the contribution of affirmative strategies to widening access to universities for students from arid and semi-arid regions (ASAL) in Kenya. The study noted that funding and fees weavers enhanced access to higher education for students from disadvantaged backgrounds. It also affirmed that socio-economic factors prohibited higher education access. He recommended specific scholarships for disadvantaged students to increase their access to university education. Obonyo's study just like the current study was conducted in a rural setting, where the learning environment was uncondusive. Nevertheless, his study did not exhaust other funding avenues that may contribute to education access like fees weavers, and bursaries, which the current study encompassed. Obonyo's study adopted a cross-sectional descriptive survey design which provided a narrow scope of findings. Thus, the current study adopted a convergent parallel mixed-methods design and was conducted in both rural and urban settings, thus providing comprehensive data on the contribution of TVET funding to gender equity among VTI students in Uganda

Further, Orodho (2014) studied the implications of FDSE in Kenya and noted that fee weavers positively contributed to students' enrolment. However, regional

enrolment disparities and increased enrolment elicited overcrowding in classes, inadequate essential instructional materials and high teacher-student ratios. Consequently, over-stretched teachers amidst scanty resources and poorly maintained infrastructure diluted the education quality and impeded good learning outcomes. Orodho's study was conducted in secondary schools, targeted few participants and was limited to few funding avenues. The current study targeted a bigger sample size in a metropolitan study locale, and multiple funding avenues hence generating comprehensive data about how funding contributes to equitable participation in TVET.

2.4.5 Parents' Income

Studies have indicated that parents' and family income influence the equitable participation of students in TVET. Gimus (2014) in Turkey assessed the impact of socioeconomic community characteristics and school participation at primary and secondary levels. The results of his study affirmed the findings of earlier studies that household-level factors significantly influenced children's school participation. Further, Shahrin, Normala, Irdyanti, and Noor (2020) in Malaysia cited familial factors as key pull factors that significantly influenced students' enrolment in TVET. For Nepal, Bhattarai, Bernasek, and Pena (2020) studied 'Factors affecting school attendance and implications for students achievement by gender.' The study was conducted in 7 schools in rural and urban areas, using open-ended questionnaires and focus group discussions and a sample size of 365 students. The study results showed that higher school attendance rates were related to greater wealth and fines for absence from school while lower rates were

related to many students per computer. Related to gender, females' attendance rates decreased with increased age while a higher rate was recorded with more younger siblings. For male students, higher school participation rates depended on wealth proxy, study time at home and having an educated mother. Nonetheless, their studies did not focus on how parents' income or SEC influenced students' equitable participation in mid-level TVET institutions, which the current study explored.

Additionally, Vidyakala and Vaishnavi (2017) studied factors influencing school absenteeism in schools in India. Their study targeted students and a sample of 159 Participants was used. The findings of their study noted that annual family income negatively impacted absenteeism. Their study was limited to absenteeism, one of the indicators of school participation, smaller sample size and one method of data collection. The current study focused on enrolment and retention of VTI students, and used a bigger sample size and multiple data collection methods and participants, thus generating diverse data for TVET participation.

According to Matsolo, et al., (2018), students from low-income backgrounds and less-educated families were most likely to drop out of higher education. The researchers argued that loans and bursaries did not cover the full costs of study leaving students of low-income families struggling to cover living and other costs. Ngugi and Muthima (2017) also noted that socioeconomic factors like the father's level of income, the income of parents and the number of siblings affected the enrolment of females in science-based TVET programs. Similarly, Orodho (2014) reported that parents' financial situation, economic status and attitude towards

educational policies influenced regular school attendance, which affected students' participation in school. However, these studies were conducted in primary schools, secondary schools and universities in South Africa and Kenya respectively, and did not focus on how parents' income and SEC contributed to the equitable participation among male and female students in VTI. The current study hence ascertained how parents' income and funding for TVET can contribute to gender equity among VTI students, where literature was limitedly known.

Likewise, a study by Opit (2014) in Uganda revealed that SEC influenced education participation and attainment, with the majority of her study participants having parents from middle and high SEC who comfortably paid fees for their children, and did needn't government scholarships. Whereas her study just like the current study, was conducted in a metropolitan setting, it did not focus on how parents' income as a form of school funding influenced equitable participation among students. Besides, her study was conducted in secondary schools while the current study was carried out in VTI. Thus, the current study covered a wider study locale of rural and urban settings in six TVET institutions, to generate diversified data about how parents' income as a funding avenue contributes to gender equity. This would hence contribute to knowledge and research about how gender policies in terms of funding contribute to gender equity among VTI students.

2.5 Attributes of the Learner-Friendly Environment (LFE) that Promote Gender Equity

Spillane, Gomez, and Mesler (2009) noted that an organization's environment including human capital, co-curricular resources, institutional norms, leadership support, motivation and organizational arrangements enhanced policy implementation. For this study, LFE includes human resources like institutional leaders, instructors, role models, community leaders and civil society gender advocates. Other attributes of LFE include classrooms, workshops/laboratories, libraries, dormitory and sanitation facilities, teaching-learning resources, co-curricular activities (CCA) and facilities and psycho-social learning environment (PsLE).

2.5.1 Classrooms, Sanitation and Dormitory Facilities

The physical and emotional hindrances to LFE negatively contribute to students' learning capacities and transition rates (Swedish International Development Agency (SIDA), 2017). This study purposed to generate data about how LFE contributed to equitable access and retention of both females and males in VTI, hence contributing to the scanty literature on TVET participation in Uganda.

Accordingly, a study by Ryan (2013) in the USA noted that classroom or workshop environments promoted equitable participation. She reported that organizing students' desks in rows discouraged students' interactions, and promoted individualism and diversional tendencies for exceptional learners. She thus recommended subject-based class organization, like creating areas for conducting science experiments and solving math word problems. However, her study took a qualitative orientation and was conducted in high schools in a

developed country, whose social contexts may not apply to a developing country where the current study was conducted using a mixed methods design.

Gore, et al., (2017) in their investigation of TVET aspirations of school students in Australia reported a weak link between school location (metropolitan and provincial states and students' aspirations for TVET (Odds Ratio=1.41). Nevertheless, Ahmed, Wadood, & Mohammad (2020) in their study of the socio-economic and demographic impacts of TVET on women in Pakistan reported that the rural-urban divide influenced the distribution of TVET-qualified women in their respective labour markets, with 61% (108) women in urban areas while 39.3% (70) were noted in rural areas. These variations in TVET participation in the two settings might replicate the level of TVET advocacy as well as conducive environments that encourage or discourage TVET in the urban and rural settings respectively. Their studies were however not conducted in VTI institutions, which a gist of analysing enrolment and retention of male and female students in TVET. The study findings hence introduced a new knowledge dimension about how the rural-urban divide might impact students' education access and retention in TVET

Equally, Edokolor and Dumbiri (2019) in Nigeria assessed the adequacy and utilisation of physical resources for effective teaching and learning in vocational education programmes in South-South universities. Their study was quantitative in orientation with 700 participants (students and instructors) and used structured questionnaires to collect the data. Both descriptive (means, standard deviation) and inferential (t-test) statistics were used in the analysis. The study revealed that physical facilities including workshops, laboratories, lecture structures,

equipment/tools, libraries, career centres, among others were inadequate for teaching-learning processes. The study further noted that inadequate facilities were linked to insufficient funds. However, their study did not show whether inadequate facilities contributed to students' equitable participation in the teaching-learning processes. Their study also never focused on other attributes of the larger support system like sanitation and hostel facilities, kitchen and dining facilities, co-curricular facilities, which contribute to effective teaching and learning processes. Therefore, the current study observed the status of PhLE facilities in TVET institutes and explored how they contributed to the equitable participation of students. These findings hence provided a deeper understanding about the different attributes of LFE that enhance gender equity, which multiple stakeholders can enrich or use to solve challenges of gender inequities.

Likewise, Bahagdhel, Chaisemartin, Charpentier, and Gurgand, (2017) in their experimental study about boarding schools in France, revealed that developed countries use charter schools to improve education access for students from disadvantaged backgrounds. These schools have adequate resources, high-quality teachers, and a strong academic environment, that boost children's academic performance and increases their aspirations. The study target population was 395 academically-qualified students from disadvantaged backgrounds between 2009 and 2012. The study noted that boarding children enjoyed better studying conditions and outperformed the control group in mathematics, two years after admission. However, only students with higher learning abilities benefited from the school after adapting to the new environment. This study was conducted in

middle and high schools in France using a quasi-experimental research design. Their study focused on how boarding schools improved performance and boosted the aspirations of students from poor academic backgrounds. However, the study neglected other attributes of the physical and socio-learning environment like meals, career guidance, that can influence students' learning outcomes. The current study thus investigated how accommodation facilities in a LFE contribute to equitable participation among VTI students, hence generating comprehensive data on the TVET learning environment and gender equity, which policy makers and implementers can use as a bench-mark while making any reforms..

Furthermore, Shahrin, Normala, Irdayanti, & Noor (2020) conducted a study dubbed 'Pull and push factors of students' enrolment in TVET programmes at community colleges in Malaysia'. Their study was explorative, sampled 377 students from 11 colleges and used questionnaires in data collection. Mean and Mann-Whitney U tests were used in data analysis in their study. Their study reported that all pull factors including training facilities and curriculum significantly influenced TVET enrolment. Their study was quantitative, employed a single research tool in data collection and hinged on students' enrolment, and not equitable participation. Therefore, the current study employed mixed methods research design, multiple methods of data collection to examine how PhLE impacted equitable participation among VTI students in Uganda.

Similarly, Ayonmike, Okwelle, and Okeke (2015) identified challenges hindering quality participation and proposed strategies for achieving quality participation in TVET programmes in tertiary institutions in Nigeria. Their study adopted a

survey research design, using questionnaires to collect data from 160 members of the Nigerian Vocational Association. Their study, just like the current employed descriptive and inferential statistics in the analysis of study findings. The study cited inadequate TVET facilities and poor teaching methods as barriers to the quality of TVET programmes and suggested the provision of required TVET facilities, training and retraining of TVET instructors and public-private partnerships to improve the quality of TVET programs. Their study was however not conducted in VTI and did not indicate how the physical facilities can contribute to equitable participation among students, but rather quality in TVET programmes. Thus, this study was conducted in VTI and examined how the TVET learning environment promotes equitable participation, thereby filling the knowledge and research gap for TVET participation among mid-level students.

Ngugi and Muthima (2017) cited quantitative growth in the number of TVET institutions in Kenya. By 2012, Kenya had 2 polytechnic university colleges, two national polytechnics, 14 institutes of technology, 1 technical teachers' training college and 26 technical institutes, regulated by the Ministry of Higher Education, Science and Technology (MoHEST). Similarly, 697 youth polytechnics are distributed throughout the country, with 350 of them receiving government assistance. The private sector also operates about 1000 commercial colleges for computer and non-technical industrial training centres. Likewise, the Ministry of Labour and Human Resources Development manages 3 industrial training centres, 1 vocational training centre, and Kenya Textile Training Institute. These findings revealed that the varieties of physical TVET facilities increase access to TVET.

However, it was unknown whether the presence of multiple TVET access avenues replicates inequitable participation. The current study was thus conducted in Central Region, Uganda, with many TVET institutes to ascertain whether the presence of physical facilities in the TVET environment contributes to equitable participation.

Furthermore, teaching and learning policies in SSA have not created schools and education facilities that match enrolment and expansion (UNESCO, 2016b). The National Education Management Information Systems in SSA reported many schools in both urban and rural areas with infrastructure backlogs, lack of desks, running water, functioning latrines and electricity. More so, schools are overcrowded, since they were meant to take a smaller intake of students. The situation is worse in Angola, South Sudan and Cote d'Ivoire, where internal conflicts and crises damaged the countries' learning environments, making schools unsafe. This report was not specific to the TVET learning environment but the education sector in general. The current study thus focused on the TVET learning environment for six VTI in both urban and rural settings, hence providing a comprehensive analysis of how TVET environments contribute to gender equity among VTI students in Uganda, one of the SSA countries.

Sanitation facilities also contribute to equitable learning opportunities. For India, a study by Santhya, Jejeebhoy, Zavier, Acharya, & Shah (2014) about 'supporting girls in their transition to secondary education' noted that girls from rural, minority and low SES communities had insufficient basic needs. Their study

commended school-based initiatives like sanitary wear to promote gender equity. This study was however conducted at the basic education level and was limited to education access and participation of girls from poor communities. The current study introduced a new knowledge dimension for equitable TVET participation of boys and girls from different socio-economic backgrounds, hence counteracting the gender inequities in TVET research among VTI students.

2.5.2 Teaching and Learning Resources

UNESCO (2014) notes that stereotypical representations in media, textbooks or women's representation in sciences promote inequalities in education. Accordingly, a study by Alber (2017) about learning resources in the USA reported that male-dominated resources were prevalent in most schools. Less than 30% of the authors in three language art books in Los Angeles Unified (LAUSD) were female, despite a high (52 %) female students' enrolment in LAUSD. Her study noted that book publishers promoted gender stereotypes, where Math and Science books were affiliated with the male gender while social studies and humanities were linked to females. These hidden gender biases in curriculum and teaching resources lead to inequitable education participation for girls. The study recommended strategies for improving practices and gender equity including proper selection of learning materials, deliberate involvement of females in classroom discussions, teacher's self-evaluation of each lesson and proper lesson planning. The study was however done in public schools in the USA, where social contexts differ from Uganda, and was limited to few learning resources. The current study was conducted in VTI in a developing country, where a variety of

learning resources were observed and analysed to generate comprehensive data about their contribution to gender equity among VTI students.

Simmonds (2017) in South Africa noted that formal curricula contributed to gender equality in schools. The study was qualitative in orientation and employed a narrative inquiry strategy using 60 minutes of interactive interviews with 6 female teachers. Specifically, one teacher affirmed that she neglected gender-related topics in the curriculum and employed gender-neutral attitudes whenever they arose. Contrary, another teacher affirmed curriculum as an avenue for academic knowledge, hard to disconnect from society and self (Simmonds, 2017). This study was limited to how curricula contributed to gender equality and not equity, used a small sample size (6) and was qualitative in orientation. The current study observed various LFE resources, and adopted a mixed methods research design with a bigger sample size, hence generating richer data and contributing to the TVET research gap in Uganda.

Similarly, a study by Biji and Lawrence (2019) cited that curriculum content had not met students' perceptions about what TVET institutions and curricula must offer. The students noted that the curriculum was too theoretical and argued to have done enough theory work and expected more exposure to practical work, which agitated students' drop out of institutions. Their study was qualitative and utilised interviews with 12 students including 6 who were studying the program, 3 who had left the program before completion and 3 who had completed the program. The current study hence utilised the mixed-methods research design and

multiple methods of data collection, to generate richer data about aspects of the LFE that enhance gender equity among VTI students.

Likewise, a quantitative study by Edokolor and Dumbiri (2019) about resource adequacy and utilisation for teaching and learning in vocational education in Nigeria showed that instructional resources including raw materials, references, and course books were under-utilised during teaching-learning processes. However, the study was limited in the scope of learning resources and did not show whether their under-utilisation affected students' participation in TVET. Equally, Ayonmike, Okwelle, and Okeke (2015) cited the lack of required TVET facilities, poor teaching methods and assessment of students' competencies as hindrances to quality TVET programs. Their study hinged on education quality and engaged a smaller sample size and one method of data collection. The current study examined multiple attributes of LFE that promote gender equity, adopted a mixed methods research design and utilised multiple methods to collect data.

2.5.3 Psycho-social Learning environment

The psycho-social learning environment also contributes to equitable school participation. Teachers' pedagogical practices are partly shaped by assumptions and stereotypes about gender influences on students' beliefs and learning (UNESCO, 2019). Accordingly, Alber (2017) reported male-dominated class discussions in middle and high school classrooms in the USA. Male students willingly participated in loud reading and raised their hands more frequently. Therefore, teachers depended more on males than females, who asked fewer questions and received limited feedback. The study also noted the uneven

distribution of teachers' time, energy and attention to male students. Ryan (2013) further noted that participation in learning is enhanced by effective instruction, interaction, discussion, sitting and writing resources. The intangible elements like the energy of the classroom, the rules and the emotional environment contributed to students' focus, achievements and the teacher's attitude towards his/her class. His study implored teachers to organize and often change the classroom environment, to facilitate behavioural changes in students with diversionary attitudes in the class (Ryan, 2013). It was further noted that teachers with well-organized teaching materials and classes had more disciplined learners and higher learning outcomes than those with disorganized classes. These two studies were conducted in a developed set-up and the findings may not apply to a developing country where the current study was done.

Additionally, Biji and Lawrence (2019) revealed that feelings of isolation caused by limited contact with other students and staff led to reduced emotional support required for students' adjustment to TVET. The isolation due to inappropriate placement and support, deficiency in orientation, unrealistic expectations and inappropriate retention strategies led to early departure and drop-out from TVET programs. Their study however took a qualitative orientation and small sample size (6) while the current study employed mixed methods in data collection and a relatively bigger sample size to ascertain how the psycho-social learning environment contributes to gender equity among VTI students in Uganda.

Further, a study by Fong, Kiong, Mukhtar, Yunos and Maizam (2020) explored vocational pedagogy (VP) approaches for Malaysian engineering TVET teachers.

The study employed a cross-sectional survey design and a set of questionnaires for 230 engineering teachers sampled from 14 states in Malaysia. The findings affirmed the use of different teaching-learning strategies for theory, practical and drawing content. For theory, the discussion method 76% (176) was the most used while the use of games in instruction 30.4% (70) was the least used. In practical aspects, imitating was the most commonly used strategy 76% (176) while games were the least used. Both imitation and giving assignments were equally used by 54.3% (125) in teaching technical drawing. Results further showed that instructors preferred more specific content (52%) than limited content (48%) in their decisions, and were more likely to utilise group methods (56%) than individual methods (44%) in teaching-learning processes. Their study was however quantitative, used only questionnaires in data collection and instructors as Participants, and hinged on vocational pedagogy approaches that facilitate effective teaching and learning processes. The current study focused on various aspects of LFE that influence the teaching-learning process, involved multiple Participants in the study and collected both qualitative and quantitative data, which generated diversified and richer data.

Equally, Chege and Likoye (2015) revealed conscious efforts by female teachers and school administrators to keep girls in schools while neglecting boys, which resulted in inequitable participation and performance of female and male students in Kenyan schools. Notably, teachers acknowledged concentration on improving girls' education, as a way of promoting gender equality within and through school. Further, Ngugi and Muthima (2017) cited that mathematics, mechanics,

problem-solving skills, and linguistic and social skills for boys and girls promote stereotypes in TVET. Thus, teachers ought to be more supportive of female students, with role models in the field, to encourage more female participation in TVET. Nonetheless, the studies highlighted how some attributes of the psychosocial learning environment enhanced participation and discipline of students but were not conducted in VTI where participation of females has historically been lower than that of males. The current study hence investigated how psychosocial attributes like guidance and counselling, proper language use, motivating students, fair allocation of tasks and rewards, and instructor-student interactions contribute to equitable participation among VTI students.

Similarly, Kintu and colleagues (2019) in Uganda commended case studies, project-based learning, real-life problem-based learning and teamwork learning activities as supportive approaches in TVET that can support students' transition to WoW. Their study, however, focused on strategies that support TVET students' orientation to the WoW while the current study ascertained whether the use of these strategies in learning facilitation promotes equitable participation among VTI students using a mixed-methods research design, multiple methods and Participants. Therefore, this study contributed to the existing knowledge gap in TVET research at mid-level TVET that counteracts the white-collar job syndrome.

2.5.4 Co-curricular Activities and Life Skills

It is argued that Co-curricular Activities (CCA) support students' participation in learning, especially those less-active in classroom activities.

According to Shaffer (2019), 57% of high school students in the USA participate in at least one CCA. His desktop review focusing on the importance of CCA on the academic achievement of high school students revealed growth in leadership skills, attendance, social skills and future mindset. Further, CCA instilled a sense of pride, skills of teamwork, self-discipline, and physical and emotional development in the youth. Equally, the National Education Longitudinal study revealed that CCA involvement created several educational outcomes including school grades, coursework selection, homework, education and occupational aspiration, self-esteem, university applications and college enrolment (Martin et al., 2019, as cited in Shaffer, 2019). Lake (2015, as cited in Shaffer, 2019) also reported that CCA participation improved attendance and graduation rates of high school students, where 50% of students participating in CCA had no unexcused absenteeism while only 36% of non-CCA participants had never missed school. Additionally, the attendance and graduation rates of 93.3% and 90.2% were reported for high schools with music programmes compared with 84.9% and 72.9% respectively for schools without music programmes.

Related to social and life skills, CCA enhance valued skills of teamwork, fair play, hard work, self-discipline, confidence, and problem-solving skills. Thus, Chen (2017, as cited in Shaffer, 2019) noted that CCA participants forge close friendships essential for mental, emotional and physical health. Conversely, participation in CCA was linked to a negative impact on academic importance, focus and attention. However, this study was conducted in high schools using secondary data, in a developed nation where contexts differ from a developing

nation. Thus, the current study was conducted in VTI in a developing nation, and primary data was collected to explore how participation in CCA enhances gender equity among VTI students, thus generating data linked to TVET participation in mid-level institutions where research was scanty.

Furthermore, St-Amand, Girard, Hiroux, and Smith (2017) in Canada studied strategies used by high school teachers to improve students' school engagement using the action research strategy. Significantly, participation in CCA was identified to counteract school disengagement, including positive relations between teachers and students involved. Notably, CCA built positive bonds with peers through sharing equipment and training in teams, working out with teams to achieve goals, improving participants' physical fitness, strength and endurance, along with changing from anti-social behaviour like smoking. Their study however took a qualitative orientation using a longitudinal approach and was conducted in a developed context, unlike the current study which adopted a mixed-methods design and cross-sectional survey strategy.

Likewise, Martini, Verby-Verutis, Grose, Clark, & Elder (2019) investigated the beliefs and behaviour of university students concerning CCA among 983 incoming, 173 mid-degree, and 1006 graduating students. The findings showed that participation in CCA was the most significant learning experience compared to course content among mid-level students while graduating students argued CCA to be unrelated to their preparedness for a job search or application for a post-graduation course. Incoming students cited clear intentions of participating in CCA but were uncertain about global awareness, diversity and inclusion aspects.

Their study showed that CCA promoted the development of career-ready transferable skills and their relevance to a particular pattern of involvement. However, the study had a limited focus on CCA as an avenue for enhancing equitable participation and was conducted in universities, unlike the current study which focused on how CCA participation enhances gender equity among VTI students in a developing nation.

Additionally, Kariyana, Mophasa, & Mapuranga (2013) investigated the importance of learners' participation in CCA in private and public schools in South Africa. Semi-structured questionnaires and interviews were used in collecting quantitative and qualitative data from 200 Participants. Their study showed that students who liked sports were motivated to enrol in school, had improved communication skills, and winning as a team improve one's status quo after school, builds teamwork spirit, confidence, resilience, self-esteem, positive attitude towards school work, improves socialisation and reduces school drop-out. Likewise, Maik & Wawrzynski (2018) studied students' engagement in CCA based on their gender, race and finances. Adopting a survey design, 2,569 students participated in the study using a questionnaire. Results showed that more female (61.1%) than male (38.9%) students were participating in CCA. However, these studies were not conducted in VTI, conducted five years back and did not focus on how social and life skills enhance gender equity in school.

According to a comparative study by Al-Ansari, et al., (2016) in dental institutes in Egypt and Saudi Arabia, less than half participation of dental students in CCA was noted at 43.8% and 27.1% respectively. Dental students engaged in CCA like

community service, sports, and social activities, and 60% of the students did not perceive CCA to impact their studies. Most students participated in CCA to socialise and make friends while others were dissatisfied with CCA organized by their institutions. Their study was quantitative in orientation, the questionnaire data collection tool and assessed factors affecting student participation in CCA using a comparative strategy. Conversely, the current study adopted a mixed-methods research design, used multiple methods of data collection, and assessed the participation of VTI students in CCA, as a strategy for developing life skills that enhanced their access and retention in TVET.

Further, Ngutiku (2016) in Kenya argued that CCA nurtured values like resilience, tenacity, confidence and perseverance. CCA also formed character, fought defiant behaviour and occupied redundant time spent in unhealthy activities like smoking. The study adopted a descriptive survey design and targeted headteachers, teachers and students. Her study, just like the current study used descriptive and inferential statistics in data analysis. Despite the study focusing on the implementation of CCA in schools, it did not show their role in the promotion of equitable access and retention among VTI students, thus not addressing the inequities in development.

2.5.5 Human Resources

For this study, human resources referred to the teachers' knowledge and competencies in subject areas, teachers as role models, counsellors, and the proportions of male and female instructors in TVET programs. Human resources also focused on the role of male instructors, institutional and community leaders

and civil society organisations (CSO) in promoting gender equity among VTI students. According to UNESCO (2019), good quality pre-service and in-service training reduce gender bias, where instructors learn ways to engender gender equity.

Dereje (2021) thus noted that the participation of female instructors in the science, technology and innovation (STI) ecosystem was low. The percentages of female academic staff in higher institutions holding first degrees, masters degrees or Doctor of Philosophy (PhD) specialities in STI were 19.3%, 11.2%, and 6.9% respectively in 2017/2018. These participation rates of females in STI were linked to a lack of academic preparation for STEM, negative attitudes towards STEM, inadequate female role models in STEM, inadequate support from higher education institutions (HEI), and gender disparity in employment. Whereas their study showed the percentage representation of female instructors in HEI, it did not show how it contributed to gender equity among students, in addition to not being conducted in VTI. The current study thus contributed to the research gap in mid-level TVET institutions, where the study was conducted.

Likewise, Magaji, et al., (2020) in Nigeria analysed the gender access to TVET programs in two institutions for three academic years 2013/2014, 2014/15, and 2015/2016. The study identified a gender enrolment gap and its impact on the production of TVET teachers. Results also revealed gender gaps in access to teacher-training institutions in general and technical teacher programmes. Low proportions of women were enrolled and produced as TVET instructors, despite their role in promoting scientific literacy and technological liberation. The study

thus recommended support for female participation in TVET programmes, to attain quality and unbiased teacher production for sustainable economies. Their study however hinged on students' access to TVET as a determinant for the proportions of female and male instructors. The current study, therefore, focused on how human resources contributed to gender equity among VTI students, hence responding to the research gap in TVET research at mid-level education access.

According to Zinnah and Mulbah (2020), Liberia remains behind other countries in STEM due to the inadequacy of qualified staff, among other factors. Graduates and post-graduates shun the teaching profession due to low pay and prefer more prestigious and high-paying professions. Consequently, only 13% of the instructors hold PhDs, 82% hold master's degrees and 5% hold bachelor's degrees to serve as teaching assistants at the College of Agriculture and Forestry. Notably, institutions are also challenged with retaining instructors, with a significant percentage of part-time instructors which is more than a third of the teaching staff (36%) at the College of Agriculture, and 28% at the University of Liberia College of Engineering. Their study described the state of affairs in higher and technical education but limitedly showed how human resource challenges contributed to equitable participation among TVET students. The current study thus unravelled how human resources contributed to gender equity among VTI students, where limited research existed.

It is further argued that role models contribute to gender equity (MoES, 2013). Accordingly, Chege and Likoye (2015) reported that school culture had increasingly made female students more confident in social and academic aspects,

with a female predominant workforce that empowered girls through their education. Thus, girls demonstrated their confidence and competitive capabilities by taking up school and classroom leadership responsibilities, previously labelled for male students. With female teachers outnumbering male teachers in the majority of the schools, the learning environment became feminised, which had a havoc effect on constructing masculinities through school. Conversely, boys lacked male role models to guide and counsel them, the way girls did which led to frustration in schooling and lethargy when girls ‘out-performed’ them in more than half of the schools in rural Kirinyaga county. Their study was however conducted in primary schools in two counties of Nairobi and Kirinyaga in Kenya five years ago. The current study unique to VTI was conducted in five metropolitan districts of the Central region in Uganda, which generated multiple ideas about how role models enhanced access and retention of students, hence contributing to the knowledge gaps identified in mid-level TVET research.

Further, Asimwe & Atukwase (2017) cited four major hindrances to women's participation in TVET administration including personal factors, qualifications, biological, and structural factors. Employing a cross-sectional survey design and mixed methods in Uganda, the study revealed a low representation of females in TVET administration. However, their study limitedly showed how the low representation of females in TVET administration raised a role-model challenge, thus hindering equitable participation among VTI students. The current study thus explored how human resources including role models, contributed to gender

equity among VTI students, hence generating comprehensive data about how the LFE in TVET contributes to gender equity.

Similarly, Shahrin, Normala, Irdyanti, and Noor (2020) affirmed that instructors' competencies were one of the pull factors that significantly influenced students' enrolment in TVET. Equally, Langat, Omboto, Ambuli and Ngeno (2021) determined the impact of trainer education level, trainer continuous professional development (CPD) and trainer pedagogical skills on the effectiveness of trainers in public TVET institutions in Kenya. Adopting a descriptive research design, registrars, deputy principals and principals totalling 181 were targeted, and a sample of 55 participated in filling out the study questionnaires. Results reported a positive significant relationship between trainer academic qualification, CPD, and trainer pedagogy and training effectiveness. The study hence concluded that trainer qualification, CPD and pedagogy influence trainer effectiveness in TVET. These two studies were mostly quantitative in orientation, used relatively smaller sample sizes, and did not focus on how instructors' competencies contributed to gender equity among VTI students. The current study thus ascertained instructors' competencies as one of the human resource aspects that enhanced students' equitable participation in TVET

Elucidating further, the changing knowledge demands in TVET require teachers and instructors to transit from the didactic imparting of skills and knowledge to the facilitation of learning. However, UNESCO (2016b) noted that 70% of SSA countries faced an acute shortage of teachers and their governments struggled to

cope with the growing populations of school-age children. Such shortages contributed to the high pupil-to-teacher ratios (PTR) and student-teacher ratios (STR). Accordingly, SSA had an average of 42:1 PTR, 14 above the recommended levels. Nigeria for instance had a pupil-to-trained teacher ratio was of 150:1 in 25% of most disadvantaged schools (UIS, 2015, as cited in UNESCO, 2016b). Regrettably, there was limited data on STR for different TVET programs in Uganda thus, this study identified STR for TVET and its relationship with students' enrolment in VTI.

Furthermore, institutional and community leaders are relevant stakeholders in the implementation and regulation of education and gender policies. Accordingly, the UNESCO Teacher Policy Development Guidelines noted that:

The provision of a [quality] teaching force cannot be done without context-responsive, evidence-based teacher policies and regulations that are elaborated with the full participation of all relevant stakeholders (UNESCO, 2015a:3).

Subsequently, the BTVET strategic plan and NSGE affirmed the role of institutional and community leaders in promoting TVET advocacy and gender equity (MoES, 2011, 2013). Similarly, Atari and Mckague (2015) affirmed the need for close collaborations between all relevant stakeholders in TVET as a way of promoting it in South Sudan. The study positioned TVET trades like hospitality, agriculture and health as avenues for reconstructing post-conflict nations. However, few studies had keenly documented the contribution of community and institutional leaders to gender equity among TVET students, a

gap which the current study filled, thus contributing to knowledge in mid-level TVET.

2.6 Policy Interventions to Boost Gender Equity in TVET Programs

Studies suggested several strategies for improving enrolment and retention in education. According to Obonyo (2013), lowering entry points, identifying funding avenues and use of localised secondary schools could increase access to university education for students from disadvantaged backgrounds. The study targeted students and lecturers from arid and semi-arid (ASAL) regions, universities and higher education administrators, and adopted a descriptive cross-sectional survey design. However, his study focused on strategies for boosting access to university education and utilized simple descriptive statistics in data analysis. The current study not only focused on education access but also the retention among VTI students from various socio-economic backgrounds. This increased representation of study participants, hence generating comprehensive strategies for boosting TVET access and retention.

Furthermore, Kigwilu, Akala, and Wambua (2016) studied the challenges facing the effective implementation of artisan and craft courses in catholic-sponsored community colleges in Nairobi, Kenya. Their study noted challenges of inadequate resources, negative attitudes, inability to pay college dues, low entry grades for students, and participation in CCA. Thus, their study posited the provision of more teaching resources, enriching motivation talks, guidance and counselling, adherence to college schedules, constant monitoring, recruitment of more qualified instructors, provision of CCA facilities, PPP, stakeholder

collaborations, and enhancing funding for TVET colleges. Adopting a mixed-methods research design, 172 students, 18 instructors and 4 directors were sampled and used questionnaires and interviews for data collection. However, their study employed a smaller sample size (190), two methods of data collection and no data was collected outside the college. Equally, the study did not show how multiple barriers in the TVET influenced students' participation in TVET, unlike the current study. It engaged multiple participants outside the VTI (10), used a bigger sample size (260), and identified different hindrances to gender equity among VTI students.

Equally, Ayonmike, Okwelle, and Okeke (2015) postulated that adequate funding, training and retraining of TVET instructors, provision of adequate teaching facilities, adequate internal and external supervisors, and PPP would improve the quality of TVET programs. Their study focused on the quality of TVET participation, used a smaller sample size (160 participants) in tertiary institutions, and employed one research tool in data collection. The current study thus explored strategies for boosting gender equity among VTI students, used a bigger sample size (260 Participants), and multiple methods of data collection. This generated diversified ideas and suggestions for improving TVET participation in a developing nation where it continues to be low.

In the same vein, Ngugi and Muthima (2017) studied 'females' participation in the TVET subsector' and suggested strategies that could trigger changes in women's participation in TVET were revealed including reinforcing institutional support for equal opportunities in structures and policies intended for equitable

participation, raising awareness on gender issues at the institutional level, gender-responsive teaching strategies, appropriate funding for equipment and resources allocated to education, rigorous review of curricula and teaching resources for perpetual gender stereotypes, gender-responsive curricula, career counselling and scholarships for promotion of gender equity. Similarly, pre-and in-service teacher education programmes need to be transformed towards gender-responsive teaching strategies. Similarly, the teacher recruitment policies were to ensure fair representation of both male and female teachers in all subjects, at all levels of education, and in the workplace. More so, promoting more female role models in TVET fields is vital, especially at higher education levels where students strongly view their teachers as role models as they nurture their career paths, addressing occupational-related issues that discourage female participation in TVET-related fields, and allocation of appropriate funding for equipment and resources to stimulate student interest in mathematics and science, particularly among female students. However, their study was a desktop review that focused on establishing the status of female participation in TVET and factors that contribute to the status quo. The current data involves sourcing primary data about both male and female students' participation in TVET and exploring strategies that can improve existing policies and boost the gender equity of students in TVET.

Conclusively, an explorative study about strategies for facilitating TVET graduates' transition to the WoW postulated income-generating activities at institutions, institution-industrial linkages and issuance of tools and materials for self-employment as strategies (Kintu, Kitainge, & Farej, 2019). Nonetheless, their

study focused on student transition to the WoW, and not strategies for enhancing equitable participation among TVET students, using a smaller sample size and one tool for data collection. The current study generated data for strategies that can boost gender equity among VTI students, using multiple data-collection tools and study participants, thus generating more concrete information related to the promotion of gender equity among TVET students.

2.7 Literature Summary and Gaps Identified

The literature showed a positive contribution of educational policies to education access at basic, secondary and university levels, despite the gender inequities. Additionally, TVET advocacy strategies required multiple stakeholders like instructors, institutional leaders, community leaders, and government and political will. Similarly, there was a positive correlation between appropriate funding and education access and retention. More so, the physical and psycho-social learning environments strongly contributed to education access and retention. Studies also commended affirmative strategies, gender-sensitive instruction (methods, human resources and learning resources), gender-sensitive learning environments, as well as increased funding for TVET, as strategies for promoting gender equity among students.

The literature also revealed the following gaps that this study filled: First, few studies exist about TVET access and retention among VTI showing sex-disaggregated data. Thus, this study analysed the enrolment and transition rates of VTI students in the Central region of Uganda. Secondly, few studies related to how policy advocacy strategies promoted gender equity among VTI students,

hence this study explored this. Thirdly, existing studies showed several barriers to LFE, yet no study in Uganda had been conducted to show how the barriers contributed to gender equity among VTI students. Likewise, literature revealed human resource challenges in institutions, especially TVET ones. Thus, this study explored the relationship between human resource barriers and students' enrolment in VTI. Whereas social contexts contribute to education access and retention, no study had been done in Uganda to compare TVET enrolment and transition rates for rural and urban VTI. Despite CCA's impact on educational achievements and life skills development, few studies had shown how life and social skills contribute to students' transition and retention rates especially the girls in TVET, which this study showed. Equally, most studies targeted smaller populations like districts, schools, and various participants with mostly descriptive study designs employed, which produced a narrow scope of findings. The current study incorporated a bigger target population and sample size, multiple Participants, many districts in Central Region, Uganda, multiple data collection methods, and a convergent parallel mixed-methods research design, which generated diversified ideas and comprehensive data for the study.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter presents and discusses the research paradigm, research design, research variables, the study locale, target population, sampling criteria and size, research methods and techniques. Sections of pilot study, validity, reliability, data analysis and presentation, and ethical and logistical considerations are also presented in this chapter.

3.2 Research Paradigm

This study was steered by the transformative worldview (Mertens, 2009, as cited in Creswell, 2014). This paradigm directs research and mixed methods procedures, where a set of assumptions and procedures are used to generate common themes and a target population is used in the research process. It focuses on the experiences of marginalised groups of people and relates study findings to actions intended to counteract the disparities or inequities (Jackson, et al., 2017). Thus, this paradigm supported the researcher to determine the nature of the inquiry and choose appropriate research designs, methods and tools.

3.3 Research Design

The convergent parallel mixed methods research design was adopted in this study. This is a design where the researcher collects and merges qualitative and quantitative data at the same time, to attain a comprehensive analysis of the research problem (Creswell, 2014). Similarly, the cross-sectional survey strategy was utilised; where data collection and analysis for the different variables in this

study was done at a single point in time (Bryman & Teevan, 2005, p. 37). The convergent parallel mixed methods design was preferred because: firstly, its pragmatic paradigm upholds the collection of both qualitative and quantitative data using multiple methods to ascertain the contribution of TVET advocacy strategies, financial resources and learner-friendly environments to gender equity of students (Creswell, 2014, p.11). Secondly, this design provides equal emphasis for qualitative and quantitative data collection and analysis in a single phase, which supports their integration to capture the contribution of gender policies to gender equity among VTI students (Creswell & Clark, 2011). Thirdly, the cross-sectional survey strategy enabled the researcher to collect descriptive data on enrolment and participation trends of TVET students, using a sample population at a single time (Creswell, 2014), which made it efficient for data collection. Similarly, the convergent design and cross-sectional survey strategy supported the researcher in answering the different research questions within a short time (Creswell & Clark, 2011), which made it very convenient for a large study locale. This design also enhanced the comparison of data about TVET enrolment and retention, TVET advocacy strategies, financial resources and learning environments for selected rural and urban TVET institutions, with each data set collected and analysed independently.

3.4 Variables

Fraenkel, Wallen, & Hyun (2012) define a variable as a concept or characteristic that promotes variations within a class of objects, that the researcher wishes to

handle, observe or measure in any study. Three types of variables were used in this study: independent, intervening and dependent variables.

3.4.1 Independent Variables

The independent variables considered for this study were attributes of TVET and gender policies including TVET policy advocacy, financial resources, and learner-friendly environments.

3.4.2 Dependent Variable

The dependent variable for this study was gender equity indicated by students' enrolment rates, students' transition rates, enrolment guidelines, and allocation of funds. No manipulation of variables was done because the researcher solicited the desired information from institutional leaders, instructors, students, ministry officials, district leaders and civil society gender advocates about the contribution of TVET advocacy strategies, financial resources and a learner-friendly environment to gender equity. Therefore, independent variables were assumed to influence the dependent variable either positively or negatively (Fraenkel, et al., 2012, p. 80).

3.4.3 Intervening Variables

According to Fraenkel, Wallen, & Hyun (2012), intervening variables influence the relationship between the independent and dependent variables. Therefore, student factors, institutional factors, social-cultural factors, Subject-Task Value theory values and other policies were assumed to impact the relationship between gender policies' attributes and gender equity of students in TVET.

3.5 Study Locale

This study was conducted in Vocational Training Institutes (VTI) in the Central Region, Uganda (see Appendix L). 21 districts comprise the Central Region of Uganda. The Central Region was purposively selected and used because: firstly, it has the highest population, with both urban and rural settings (UBOS, 2016). Secondly, Central Region exhibits a high literacy level (83%) (UBOS, 2012), which made it possible to identify Participants with desired characteristics for this study. Furthermore, 30 public and private government-funded TVET institutes are housed in the Central Region including Technical Institutes (TI), Nursing and Allied Health colleges (NAHC), Community Polytechnics (CP), Agricultural Institutes (AI) and Technical Schools (TS), with various TVET trades (MoES, 2016), which simplified identification of Participants with the desired information. Further, the VTI in Central Region were assumed to have conducive facilities for TVET advocacy and learning and received capitation grants plus other financial resources, which were key for this study (MoES, 2017).

3.6 Target Population

The target population for this study comprised students, instructors, and institutional leaders (IL) of VTI in the Central Region, Uganda. Additionally, District Leaders (DL) including Inspectors of Schools, Local Council (LC) three (III) chairpersons, MoES and MoGLSD officials, and civil society organisation (CSO) gender advocates also participated in the study. These Participants participated in the study because they were positioned in different administrative and leadership positions. Thus, they provided desired data about the contribution

of TVET advocacy strategies, financial resources and LFE to gender equity among VTI students. Multiple Participants were used in this study to generate diversified views and a broad scope of data about the various aspects being studied (Cohen, Manion, & Morrison, 2011). Therefore, the target population was 6,158 respondents including 5,791 students, 240 instructors, 60 IL, 42 DL, 4 MoES and MoGLSD officials, and 21 CSO gender advocates (MoES, 2017; Uganda Women's Network, UWONET, 2018).

3.7 Sampling Criteria and Sample Size

Both probability and non-probability sampling techniques were utilized in this study. Justifiably, probability sampling accords respondents an equal chance of participation, which promotes the generalisation of results to the population while non-probability sampling guided the identification of participants' samples with desired information for the study (Creswell, 2014). Additionally, probabilistic sampling provides accurate information about a large population, like the Central Region of Uganda while non-probabilistic sampling was used to select districts, institutions and Participants where inferences were less important (Creswell, 2013).

3.7.1 Sampling Criteria

Firstly, purposive sampling was used to select five districts (24%) including three urban districts of Kampala, Masaka and Wakiso with several VTI and many students, and two rural-based districts of Mubende and Gomba with 1-2 VTI and a low students' population (MoES, 2017). The selection of urban and rural-based institutes was done to compare study findings. Wakiso district was also purposely

selected because it housed the only technical school in Central Region. Consequently, six VTI (20%) were purposively selected depending on: district location, type of VTI, years of existence, financial facilitation and TVET programs offered. Purposive sampling was preferred in selecting districts and institutes because it objectively guided the identification of the Participants with desired characteristics for the study (Fraenkel, Wallen, & Hyun, 2012).

Purposive sampling was equally employed in selecting IL because their institutes had been selected to participate in the study. Convenience and purposive sampling were used to select willing and available DL, ministry officials (MoES and MoGLSD) and CSO gender advocates respectively. These strategies were utilised in Participants' sampling because of the Participants' roles in the promotion of TVET enrolment and participation, TVET advocacy, learning environments and financial resources (Creswell, 2013; Fraenkel, et al., 2012). Nonetheless, the majority of the district leaders declined to participate in this study due to work commitments.

A stratified random sampling technique (SRT) was further adopted to select instructors and students. This type of probability sampling involved the organisation of students and instructors into multiple non-overlapping homogenous strata and randomly selecting a study informant from each stratum (Creswell, 2013). Thus, stratification was done based on the type of TVET trade and training offered. Therefore, instructors and students formed six strata of WWT, AHS, Electricity, TGD, Nursing and BCP, and a simple random sampling technique was applied to select instructors and students from each stratum per

institute; which gave each individual an equal chance to participate in the study (Fraenkel, et al., 2012). Similarly, purposive sampling was used to select heads of department (HoDs), role model students and instructors to complete questionnaires and interviews respectively. This was because probability sampling techniques could exclude them from the study, despite their knowledge and inspiration in providing desired data about TVET advocacy, learning environment, financial resources, attitudes towards TVET and parents' socioeconomic status (Fraenkel, et al., 2012). The researcher was further mindful of the gender of different study Participants because male and female Participants were not evenly distributed in the study sample.

3.7.2 Sample Size

According to Fraenkel, Wallen, and Hyun (2012), the sample size must be large and representative depending on the type of study, research design, and data analysis plan. Emory (1985) recommends a 10% sample of the target population for survey studies while Israel (2008) and Fowler (2009, as cited in Creswell, 2014) commend samples from published tables depending on the study's analysis plan. Therefore, six VTI (20%) were purposively sampled for this study, which was above 10% commended for survey studies (Emory, 1985). Equally, a sample size of 260 Participants was used because inferences were employed in data analysis (Creswell, 2014; Israel, 2008). The sample size comprised: 185 students, 56 instructors, 9 institutional leaders, 3 district leaders, 2 ministry officials and 5 CSO gender advocates as shown in Table 3.1.

Table 3.1: Sample Size of the Study

	Target Population			Sample Size			Percentage
	N	Female	Male	n	Female	Male	
Districts	21	-	-	5	-	-	24
VTI types	5	-	-	4	-	-	80
VTI number	30	-	-	6	-	-	20
Institutional Leaders	60	8	52	9	0	9	22
Instructors	240	73	167	56	21	35	23
Students	5791	1459	4332	185	80	105	3
District leaders	42	12	30	3	1	2	7
MoES & MoGLSD officials	4	2	2	2	1	1	50
CSO gender advocates	21	15	6	5	4	1	24
Total	6158			260			

Source: *MoES (2017); Uganda Women's Network (2018)*

3.8 Research Instruments

The tools used for collecting the desired data were: document analysis guides, questionnaires, interview guides, and observation checklists. The use of multiple methods provided a diversity of ideas from Participants which enhanced the triangulation of data, hence contributing to its content validity (Fraenkel, et al., 2012).

3.8.1. Document Analysis Guide

According to Cohen, Manion, and Morrison (2011), documents prudently identified and analysed are good sources of text and numeric information. Since this study required numeric and text information, a document analysis guide

(Appendix B) was used to generate data on enrolment and transition trends in TVET between 2013 and 2017 using original school records. Additionally, the study planned to assess class registers, curricula, textbooks and other learning aids that enhance gender equity (refer to Appendix B). However, the majority of the VTI lacked libraries (4) hence analysis of some aspects like curricula, textbooks and other learning aids was limited to two institutes in an urban setting, which made the findings inapplicable to all.

3.8.2. Questionnaires for IL, Instructors and Students

Questionnaires are used in surveys because of their flexibility in administration (Cohen, et al., 2011). Additionally, they are good sources of factual information (Fraenkel, et al, 2012). Therefore, questionnaire guides for IL, instructors and students (Appendix C) were used to obtain data on students' enrolment and participation in TVET, the contribution of TVET advocacy strategies, financial resources and learner-friendly environment to gender equity. Additionally, the Participants noted their motivations to participate in TVET, barriers to TVET participation, and proposed interventions for boosting gender equity in TVET programs. The questionnaires comprised two sections, A and B. Section A required general and demographic information while section B consisted of questions that related to the research objectives and generated the desired data. The questionnaires for instructors and institutional leaders comprised 24 items each while the students' tool comprised 35 items. The questionnaire items were either unstructured (open-ended) or structured (closed-ended). Therefore, 9 institutional leaders, 56 instructors, including HoDs and 185 students filled out

the questionnaires in the six VTI. The distribution of questionnaires in the six institutes was not uniform due to variations in student numbers in each institute. More so, the number of student participants was increased from the proposed 146 to 185 to boost their representation and attain 260 participants, a number commended for studies utilising inferential statistics in data analysis (Creswell, 2014).

3.8.3. Interview Guides for DL, Ministry Officials, CSO Gender Advocates, Role model Instructors and Students

Interviews are specialized forms of communication between people on agreed agenda. Interviews were used in this study because they enabled the study to clarify obscure questions and probe explanations of desired information from Participants (Fraenkel, et al., 2012). Therefore, the researcher conducted scheduled face-to-face interviews with DL, ministry officials and CSO gender advocates to solicit information about the contribution of TVET advocacy strategies, learning environments and financial resources to gender equity (Appendix C). Similarly, face-to-face interviews were conducted with role model instructors and students (Appendix C) to raise data about their motivations and perceptions towards TVET, which enhanced their enrolment and retention. The interview guides comprised 16 open-ended items, focusing on the researcher's understanding of TVET advocacy strategies, financial resources and the learning environment. Open-ended questions were easy to construct and permitted in-depth responses (Creswell, 2013, pp. 163-64). The study also established a good rapport with the Participants, which enhanced collaboration in reporting study findings

(Creswell, 2013). Further, audio recorders were used with the Participants' permission, which supported the data decoding process. Interviews were appropriate for committed Participants like CSO advocates and exhibited high response rates (Cohen, et al., 2011; Fraenkel, et al., 2012). Therefore, 3 district leaders, 2 ministry officials, 5 CSO gender advocates, 4 role model instructors and 8 role model students were interviewed for this study.

3.8.4. Learning Environment Observation Checklist

Observation is an act of noting an occurrence in the field using the observer's five senses (Creswell, 2013). For this study, an observation protocol (Appendix D) was developed to guide the researcher while capturing data about attributes of the learning environment in VTI that contributed to gender equity. Structured participant observation was used since it permitted the researcher to experience, see, hear and feel the realities students and instructors experience in their learning environments (Creswell, 2013; Marshall & Rossman, 2011). Therefore, both the physical and psycho-social learning environments including instructor-student interactions, teaching methods, classroom arrangements, students' participation in lessons, learning resources, appropriate language use, guidance and counselling were observed. Thus, six lessons including two for AHS, two for WWT, one for Nursing, and one for electricity were observed, with one lesson observed per institute.

3.9 Pilot Study

Before data collection, piloting was done to test the content validity of research instruments and improve items, scales and formats (Creswell, 2014). Piloting also

guided the researcher on the appropriateness of sentences, statements, and question items, and any flaws in the administration of the research instruments were identified and addressed (Bryman & Teevan, 2005). The study thus piloted the major instruments in two VTI, one for rural and urban settings respectively, analysed responses and simplified ambiguous items in students' questionnaires. For example, meanings of ambiguous terms like policies, gender equity, learning environment, financing resources, and advocacy strategies were explained to students before the administration of research tools. Therefore, one IL, two instructors, and three students per institute participated in the pilot study for questionnaires. Equally, one role-model student and instructor were interviewed in each of the institutes. Data from the 12 Participants' questionnaires were entered into Statistical Package for Social Science (SPSS)-version 21 and its correlation coefficient was checked using the split-half method. This method involved scoring test items into two halves for odd and even numbers respectively for each informant and calculating the correlation coefficient for the two halves (Bryman & Teevan, 2005). Consequently, the Spearman-Brown prophecy value of 0.77 was obtained, showing the strong reliability of pilot findings. Data from the questionnaires and interview guides were also triangulated hence confirming the content validity of the study tools. The observation checklist and document analysis guide were also piloted in the urban TVET institute that participated in the pilot study. Thus, the pilot study revealed some questions and probes in the questionnaires and interview guides for IL, instructors and students that contained technical terms like gender equity, advocacy strategies, and gender policies which

were difficult to comprehend. These were rephrased into simpler language and explained to the Participants before the distribution of study tools. These amendments were thus incorporated into the research tools, and the pilot results did not comprise part of the study results.

3.9.1 Validity Methods

Validity denotes the appropriateness of an instrument to measure its intended variable (s) in quantitative inquiries, while aspects like researcher honesty, depth, scope and richness of data are embraced in qualitative studies (Cohen, et al., 2011, p. 179). This study thus employed multiple methods for testing validity, increasing the authenticity of findings, and reducing the researcher's bias (Creswell, 2014, p.201). Firstly, the content validity of qualitative and quantitative data was checked using the pilot strategy as indicated in 3.9. Secondly, the internal consistency of qualitative and quantitative data from IL, instructors, students and interview data was checked using a triangulation strategy (Bryman & Teevan, 2005). Triangulation involves the use of multiple methods or data sources to develop a comprehensive understanding of the aspects being studied. Similarly, content validity and study transcriptions for participants' interview data were checked using face-to-face debriefing and telephone calls, and their views were incorporated. The researcher also used prolonged engagements at institutions, where four days were spent at each VTI while the scheduled interviews lasted at least 45 minutes to ensure accuracy for descriptive and interpretive validity (Creswell, 2013, p. 251). Repeated observation was also

used where more than one lesson was observed for the two institutional settings to generate a comprehensive analysis and better understanding of the research problem.

3.9.2 Reliability Strategies

Bryman and Teevan (2005) explained reliability as the degree of consistency and transferability of research findings. This was done to ensure the consistency of study findings over several trials. Several strategies for enhancing reliability were employed to minimise interviewer error and researcher bias, hence increasing data consistency (Cohen, et al., 2011; Creswell, 2014). Firstly, the researcher followed an acceptable process of data collection, maintained good rapport with study participants and piloted most research instruments (Cohen, et al., 2011). Secondly, the internal consistency of questionnaires for IL, instructors and students was measured using the split-half technique. With this technique, odd and even items in the questionnaires were scored for the different participants and the correlation coefficients for the two halves were calculated using the Spearman-Brown prophecy formula in SPSS (Fraenkel, et al., 2012). The split-half technique was preferred to other methods like test-re-test because it involved single administration of research tools, hence suitable for a study involving a large geographical scope. According to Fraenkel, et al., (2012), research instruments that attain reliability ranges of 0.65-0.75 signify strong reliability for study findings. Therefore, Spearman-Brown coefficient values of 0.716, 0.750 and 0.894 were obtained for IL, instructors and students' questionnaire items as shown in table 3.2.

Table 3.2: Reliability Statistics for Participants' questionnaires

Reliability Statistics for Institutional leaders		
	Total N of Items	9
Spearman-Brown Coefficient	Equal Length	.716
	Unequal Length	.716
Reliability Statistics for Instructors		
Spearman-Brown Coefficient	N of Items	56
	Equal Length	.750
	Unequal Length	.752
Reliability Statistics for students		
Spearman-Brown Coefficient	N of Items	185
	Equal Length	0.894
	Unequal Length	0.894

Source: *Primary data (2019)*

The reliability of data from interviews, document analyses and observations was measured using the inter-coder agreement technique. This technique involves the use of two observers and coders to observe and transcribe data sets for observation schedules, interview recordings and document analysis guides independently, and their transcriptions compared (Bryman & Teevan, 2005). Therefore, research assistants were not used for conducting interviews to ensure similar interview formats and word sequences for all study Participants, while competent coders were identified and trained. Data from different methods and participants were also triangulated, while follow-up interviews for questionnaires

and observations were conducted using phone calls, to confirm data interpretations (Creswell, 2013). Moreover, Creswell (2013) and Fraenkel, et al., (2012) commended observation agreements of 80% as reliable data in any study. Thus, the observed data for the learning environments that agreed up to 80% were considered reliable and hence used in this study.

3.10 Data Collection Techniques

Pre-visits and initial contacts with principals of the different VTI were made, which created rapport. Therefore, appointments for data collection were secured from each of the participating institutes, which the researcher used to draw the data collection plans. The process of data collection started from MCPR001, WMTS002, WKTI003, KNVI004, MMNS006, and lastly LBAC005. Due to the large geographical scope of the study area, multiple Participants, and big sample size, two research assistants were used in the administration of questionnaires, document analyses, and observation of the learning environments. The assistants were trained on how to use the different research tools, debrief meetings were held, and thorough checks for the different research tools were done daily to enhance data quality.

Four days were secured for data collection at each VTI. On the first day, the researcher and her assistants met with institutional leaders (IL), to whom the purpose of the study was explained. Questionnaires were then administered to them in their offices, and a time for the collection of filled questionnaires was agreed upon. The researcher and assistants then administered questionnaires to instructors of the different trades, who had been convened by their IL. The

purpose of the study was equally explained to the participants, and those who agreed to participate in the study signed the informed consent forms, before answering the questionnaires. The instructors were given three hours to fill the questionnaires, and a time for picking the filled questionnaires was equally agreed upon.

On the second day, more instructors were convened, the study purpose was re-explained and questionnaires were administered to the willing ones, who cautiously filled them. Similarly, interviews with role model students and instructors were conducted on the same day, depending on their time plans.

On the third day, document analysis was done for enrolment and transition numbers of students. Equally, students for the targeted trades were convened, the study purpose explained and questionnaires were administered, after filling out the written consent. Students were accorded one hour to fill out the questionnaires, which were then collected.

On the fourth day, the learning environment was observed for different attributes that enhance gender equity. Equally, the researcher observed six lessons (2 AHS, 2 WWT, 1 Electricity and 1 Nursing), depending on the timetable and willingness of the instructors for those fields to be observed.

Hence, a similar process was repeated in each of the six participating VTI, depending on the institutes' schedules, and this process took 60 working days.

Following the schedules for the different institutes and districts, the researcher further identified and made contact with willing CSO advocates and district

leaders, with whom appointments for interviews were slated. Further, interviews with ministry officials were scheduled and conducted. Equally, audio recorders were used to ease the transcription process, upon obtaining consent from the Participants. Therefore, data collection was conducted within three months (August-October, 2019).

3.11 Data Analysis

Quantitative and qualitative data for this study were analysed independently and sequentially. After collecting the qualitative and quantitative data for this study, the data was cleaned, transcribed, and organized according to the study objectives. Quantitative and qualitative data from questionnaires about gender policies and students' enrolment, policy advocacy strategies, financial resources, learning environment, and policy interventions for boosting gender equity in TVET programs were coded into SPSS-version 21. SPSS was used to generate frequencies, percentages, means, standard deviations and cross-tabulations for the different study variables. The use of SPSS promoted consistency in data entry and allowed one to double-check the data entered, hence minimizing errors (Fraenkel, et al., 2012). Similarly, data for enrolment and retention in TVET were analysed using Microsoft Excel to generate gender-based trends. For each institute, enrolment and transition numbers for female and male students for two cohorts of 2013-2014 and 2015-2016 were entered into an excel spreadsheet, followed by the generation of graphs showing the gender-based enrolment and transition trends for rural and urban institutes. Descriptive statistics particularly frequencies, percentages, mean and standard deviation were used in the analysis while tables,

charts and graphs were used in presenting the analysed data. Justifiably, these methods are appropriate and convenient for survey studies (Fraenkel, et al., 2012).

Additionally, inferential statistics particularly, Pearson chi-square tests, ANOVA and Pearson product-moment correlation coefficients were used in this study. Pearson chi-square tests were used to show the relationship between the use of TVET advocacy strategies and gender equity among VTI students. Chi-square tests were also used to ascertain the relationship between institutional settings and participants' knowledge of gender policies. Similarly, Analysis of variance (ANOVA) was used to show the difference in students' enrolments according to institutional settings. Lastly, the Pearson Product moment correlation coefficient (r) was used to explore the relationship between staff population and students' enrolment in TVET institutions. These methods were suitable for this study because its variables were majorly categorical without intrinsic ordering which commended the use of chi-square analysis as the main statistic, while the few non-categorical ones encouraged the use of Pearson Product moment correlations (Fraenkel, Wallen, & Hyun, 2012).

Qualitative data from interviews and observation tools about the status of TVET advocacy, financial resources, LFE and their contribution to gender equity was analysed throughout the data collection process using the thematic method of analysis. Responses for different participants were organized into themes and sub-themes to identify a collated answer to a given research question. Similarly, data for different participants were triangulated to compare their responses and generate a diverse understanding of the aspects being studied. This enabled the

study to identify patterns, describe relationships, and make comparisons for rural and urban TVET institutes (Cohen, et al., 2011). Both Verbatim and indirect reporting were used to present the qualitative data. The analysed data was presented and discussed in two chapters (4 and 5).

3.12 Logistical and Ethical Considerations

The rationale for these considerations was protecting participants from harm, maintaining respondents' confidentiality and liberty to participate or withdraw at will from the study (Fraenkel, et al., 2012).

3.12.1 Logistical Considerations

Firstly, the study sought approval and clearance from the Graduate School of Kenyatta University, and authorisation from MoES, Uganda to conduct the study in the suggested institutes. Similarly, the study received ethical clearance from the Mbarara University of Science and Technology (MUST) Research Ethics Committee (appendix G). Additionally, a research permit was attained from Uganda National Council for Science and Technology (UNCST) to conduct the study (appendix G). At the institutional level, administrative clearance was sought and received from the IL to engage students and instructors for each institution sampled for this study. Permission was also sought from HODs and student leaders to engage Participants below 18 years to participate in the study.

3.12.2 Ethical Considerations

Prior to data collection, the researcher explained the purpose of the study to the respondents. Secondly, the researcher-developed informed consent form (Appendix A), approved by the MUST research ethics committee was used to

obtain consent. This was read and signed by each informant that agreed to participate in the study. Participants were also assured of the strict confidentiality of collected information and pseudonyms were used in reporting the study findings. The principle of anonymity was also employed, where no name section was included in the research tools. Instead, serial numbers and codes were used. Similarly, the research findings were shared with the institutions and Participants involved in the study (Marshall & Rossman, 2011, p. 47). Finally, the researcher refrained from plagiarism by acknowledging all studies utilised therein.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND DISCUSSION I

4.1 Introduction

The purpose of this study was to investigate the contribution of gender policies in TVET to gender equity among VTI students in the Central Region of Uganda. Chapter four presents the findings, interpretations and discussions according to the first three study objectives and research questions which were:

- i) Establish the gender trends in TVET enrolment and retention of VTI students between 2013 and 2017 in the Central Region, Uganda.
- ii) Examine the contribution of TVET advocacy strategies to gender equity among VTI students in the Central region of Uganda.
- iii) Explore the contribution of financial resources to gender equity among VTI students in the Central region of Uganda

Chapter four also presents the participants' biodata and study instruments' return rates.

4.2 General and Demographic Information

This section presents the instruments' return rate, participants' institutional settings, TVET fields, age, categories, years of study and working experiences.

4.2.1 Instruments' Return Rate

An instrument's return rate is the proportion of the research instruments returned to the researcher after they are administered to respondents. The return rates of study instruments are presented in Table 4.1.

Table 4.1: Instruments' Return Rate

Instrument category	Instruments issued	Instruments returned	Return Rate	Participation rate
	N	n	%	%
Students	185	185	100	71.2
Questionnaires				
Instructors	72	56	82	21.5
Questionnaires				
Institutional leaders	12	9	75	3.5
Questionnaires				
District Leaders	6	3	50	1.2
Interview Guides				
Ministry Officials'	2	2	100	0.8
Interview Guides				
Gender Advocates	6	5	83.3	1.9
Interview Guides				
Total	289	260	90	100

Source: *Primary data (2019)*

This study employed multiple instruments as depicted in Table 4.1. Students' questionnaires 100% (185) and ministry officials' interview guides 100% (2) presented the highest return rates. Gender advocates' interview guides and instructors' questionnaires registered 83.3% (5) and 82% (56) return rates respectively, which were more than three-quarters of the administered tools. District Leaders' interview guides registered the least 50% (3) return rate. Hence, this study registered an overall return rate of 90%, considered excellent for data analysis. Table 4.1 also showed that students, being the main study participants had the highest participation rate of 71.2% (185) and comprised the highest

percentage of the sample. These response rates conform with recommendations by Fincham (2008) and Mugenda (2008). Fincham (2008) commended response rates greater than or equal to 80% for surveys representing schools and colleges. Similarly, Mugenda (2008) noted that a 50 % response rate was adequate, 60% was good and above 70% was rated very good.

4.2.2 Institutional Settings, TVET Fields and Age of Participants

The distribution of study participants according to institutional settings, TVET fields, age and gender is depicted in Table 4.2.

Table 4.2: Distribution of participants according to institutional settings, TVET fields, age, and gender

Demographic Categories		Gender of study participants				Total
		Males		Females		
		n	%	n	%	
Institutional settings (N=250)	Rural	61	64.2	34	35.8	95
	Urban	90	58.1	65	41.9	155
	Total	151	60.4	99	39.6	250
TVET Field (N=250)	WWT	28	93.0	2	7.0	30
	BCP	38	69.1	17	30.9	55
	TGD	4	16.0	21	84.0	25
	Electricity	35	66.0	18	34.0	53
	AHS	21	60.0	14	40.0	35
	Nursing	20	42.6	27	57.4	47
	Others	5	100	0	0	5
	Total	151	60.4	99	39.6	250
Age in years (N=250)	Below 20	40	47.6	44	52.4	84
	21-30	73	68.2	34	31.8	107
	31-40	15	48.4	16	51.6	31
	41-50	13	81.3	3	18.7	16
	Above 50	10	83.3	2	16.7	12
	Total	151	60.4	99	39.6	250

BCP-Building and Construction, TGD-Tailoring and Garment design, WWT-Woodwork technology, AHS-Agriculture and Home Science

Source: *Primary questionnaire data (2019)*

The results in Table 4.2 revealed that more than half of the participants 60% (151) were males while nearly fifty per cent 40% (99) were females. This could be linked with the VTI population comprising more males than females. The findings thus presented equity and gender spread of TVET participants in the study. These findings undermined the declarations of researchers about having no systematic sex differences in TVET participation since the representation of males was greater than that of females in this study (Olelewe, et al., 2019).

According to institutional settings, Table 4.2 showed that male participation rates 64% (61) nearly doubled that of females 36% (34) in rural settings. On the contrary, female participation was close to the average level 42% (65) while the male participation rate was slightly above the parity level of 58% (90) in urban settings. The gender disparity gap was however wider in rural 28.6% (28) than in urban 13.6% (20) settings. This was partly due to variations in females' participation rates and TVET trades offered in the two settings. These findings corroborate findings by International Labour Organisation ILO (2016) in Lao DPR which showed that the rural-urban divide influenced participation in TVET. Thus, 51% of TVET trainees were from urban settings, 45% were from rural areas with roads, and 5% were from rural areas without roads. Nonetheless, their study did not generate gender-disaggregated data according to the rural-urban divide.

Further, Githitu (2011, as cited in Ngugi & Muthima, 2017) affirmed that gender affected students' attitudes towards youth polytechnics.

Results in Table 4.2 further showed that female participation in this study was higher in TVET trades of TGD 84% (21), Nursing 54% (27) and AHS (40%). Conversely, male participation rates were higher in WWT at 93% (28), BCP at 69% (38) and Electricity at 66% (35). Importantly, TGD, AHS and Nursing have been traditionally linked to females while WWT, BCP and electricity are traditional male-oriented trades thus the variations in participation numbers. Similarly, the majority of the TVET trades sampled for this study comprised more males than females. These confirmed inequalities in participation despite efforts to increase female and male participation in these non-traditional and traditional trades respectively. These findings corroborate those of Kushmakar (2016) who reported that most traditional TVET programs like beauticians and cosmetologists had a high inclusion of women while poor participation appeared in non-traditional trades like building electricians in Nepal.

Additionally, the majority of the study participants 42.8% (107) were aged 21 to 30 years, while more than a quarter 33.6% (84) were aged less than 20 years. According to gender, female participation was higher in the age groups below 20 years 52% (44), 31-40 years 52% (16) and 21-30 years 32% (34). Male participants were more in the age groups above 50 years 83% (10), 41-50 years 81% (13) and 21-30 years 68% (73). This was partly linked to the percentage representation of males and females in this study as well as the roles like principals, academic registrars, and TVET trades linked to the male and female

participants in this study. These findings are synonymous with the percentage representation of different study Participants in this study, with students who are the youngest comprising the highest percentage 71.2% (185) while instructors and institutional leaders who were older comprising a quarter 25% (65) of the study participants (refer to Table 4.1).

4.2.3 Participants' Categories, Years of Study, Working Experiences and Gender

Furthermore, the distribution of participants according to their categories, years of study, working experiences and gender was shown in Table 4.3.

Table 4. 3: Distribution of participants according to categories, years of study, working experiences and gender

Demographic categories		Gender of study Participants				Total
		Males		Females		
		n	%	n	%	
Participants' Categories (N=260)	Students	107	57.8	78	42.2	185
	Instructors	35	62.5	21	37.5	56
	Institutional leaders	9	100	0	100	9
	District Leaders	2	66.7	1	33.3	3
	Ministry Officials	1	50	1	50	2
	CSO gender advocates	1	25	4	75	5
	Total	154	59.2	106	40.8	260
Years of Study (N=185)	First-year	45	66.2	23	33.8	68
	Second- year	51	57.3	38	42.7	89
	Third -year	11	39.3	17	60.7	28
	Total	107	57.8	78	42.2	185
Working Experiences (N= 65)	Below 2 years	6	85.7	1	14.3	7
	2-5 years	12	63.2	7	36.8	19
	6-10 years	11	55	9	45	20
	Above 10 years	15	78.9	4	21.1	19
	Total	44	67.7	21	32.3	65

CSO- Civil Society Organisation

Source: *Primary questionnaire data (2019)*

Related to categories of participants, the results in Table 4.3 revealed more female participants among students 42% (78), CSO gender advocates 75% (5) and instructors 38% (21). Similarly, male participation was higher among institutional leaders at 100% (9), district leaders at 67% (2) and instructors at 63% (35). These results were attributed to the percentage representation of the different study participants, for example, all institutional leaders were males while nearly all CSO advocates were females in this study.

According to years of study, female participants were higher in the third-year 61% (28) and the second year 43% (28) students respectively. Conversely, more first-year 66% (45) and second-year 57% (51) males participated in this study. Justifiably, the majority of the TVET programs are offered in two years for students enrolling using the Uganda Certificate of Education (UCE) and Uganda Advanced Certificate of Education (UACE) levels. Related to gender, results indicated that more female students enrolled using the Primary Leaving Certificates (PLE) which required three years of study. On the contrary, more male students enrolled using the UCE and UACE certificates, requiring two years of study.

Furthermore, Table 4.3 showed that more than half 60% (39) of the instructors and IL had more than five years of working experience while more than a quarter 29.2% (19) had 2-5 years of working experience in TVET. Related to gender, more males had higher working experiences of 86% (6) and 79% (15) for below 2 years and above 10 years respectively. Females, on the contrary, had working experiences less than average with the highest rates at 37% (7) and 45% (9) for 2-

5 years and 6-10 years of experience respectively. These results implied that the majority of participants had adequate working experience of at least three years 89.2% (58) presumed to replicate quality data sharing. Nonetheless, many females had lower working experiences, which disqualified them from highly prestigious positions like Heads of Department and Principal in the VTI, thus creating an inequity challenge. These findings are synonymous with Dereje (2021) who noted low participation of female instructors in the science, technology and innovation (STI) ecosystem. These participation rates of females in STI were linked to a lack of academic preparation, negative attitudes, inadequate female role models, and gender disparity in employment.

4.2.4 Highest Academic Qualification of Study Participants

The distribution of study participants according to their academic qualifications is shown in Figure 4.1.

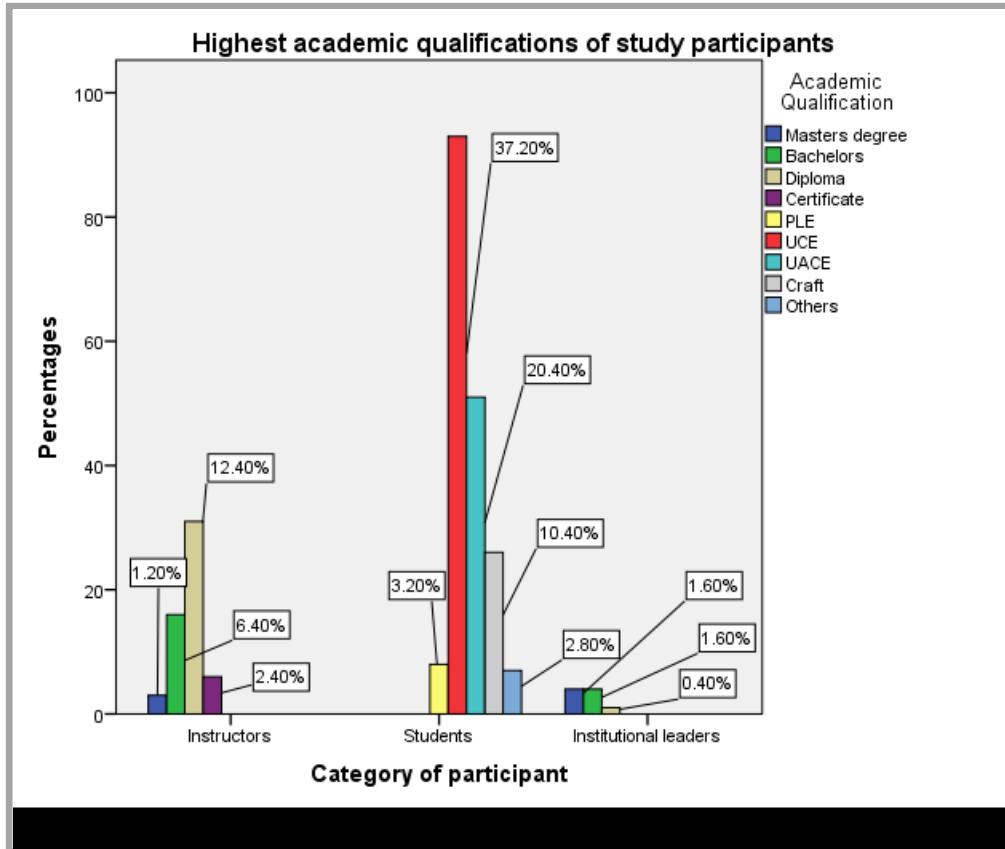


Figure 4.1: Highest academic qualification of participants

Source: Primary data (2019)

Findings in Figure 4.1 showed that the majority of the students 37.2% (93) had attained UCE, nearly a quarter of them had attained UACE 20.4% (51) while very few 10.4% (19) had attained craft qualification. Further, the majority of the instructors and IL had attained diplomas 12.8% (32), bachelor's degrees 1.6% (1) and master's degrees 1.6% (1) respectively. These results indicated that students who comprised the highest participation rate (71.2%) had attained UACE and UCE certificates while instructors and IL had attained bachelor's and master's degrees respectively. These results implied that the different participants possessed the necessary competencies to participate in TVET, with institutional leaders

presenting the highest academic credentials while the students presented the least. This study hence assumed that their academic competencies replicated the quality of the data generated. These assumptions are corroborated by Langat, Omboto, Ambuli, and Ngeno (2021) who reported a positive significant relationship between trainer academic qualification and training effectiveness in public TVET institutions in Kenya.

4.3 Enrolment and Participation Trends in TVET between 2013 and 2017

Objective one of this study intended to establish gender trends in TVET enrolment and retention of VTI students in the Central Region, Uganda between 2013 and 2017. The research question was: what gender-based trends exist in TVET enrolment and retention of VTI students between 2013 and 2017 in the Central Region, Uganda?

Therefore, institutional leaders (IL) provided data for current students' enrolment in VTI. Similarly, data for trade-based students' enrolment, gender-based enrolment, gender-based transition and students' drop-out rates in VTI in the Central Region, Uganda were generated from the institutions' documents and study questionnaires.

4.3.1 Current Students' Enrolment in Rural and Urban Institutions

Data for current students' enrolment was provided by IL. Table 4.4 shows the current enrolment of VTI students based on their institutional settings and gender.

Table 4.4: Means for current students' enrolment in rural and urban institutions

Setting	N	Males	Females	Mean	95% Confidence interval for mean	
					Lower bound	Upper bound
Rural	5	252	153	83	32	135
Urban	4	1147	286	364	272	455
Overall Mean		233	73			

Source: *Primary questionnaire data (2019)*

The Descriptive data in Table 4.4 showed that the mean enrolment of students in urban institutions was close to five times (364) that in rural institutions (83). Based on gender, the mean for male students was thrice (233) in comparison with that for female students (73). These results showed both gender and set-up enrolment disparities among VTI students. These could perhaps be attributed to socio-cultural and economic factors, institutional factors, policy-related constraints and student-related factors. Relating these findings to Subject-Task Value (STV) theory (Eccles, 2005), it argued that students' motivations and achievement-related choices are influenced by their expectations to succeed and subjective-task values. Similarly, the Feminist Socialisation Theory (FST) suggested strategies for promoting gender equity in education, which are dependent on the larger support system (Thompson, 2003), including the rural-urban divide and gender. This implied that gender equity in TVET was influenced by multiple factors including students' interests, gender, and grades at previous education levels, among others. Equally, attributes of the larger support system,

including the rural-urban divide, among others influenced the gender equity of students. The findings concurred with studies by ILO (2016) in Lao which showed that the rural-urban divide impacted TVET participation. Accordingly, the percentage proportions of TVET participants was less than 5% in urban areas, 2.2% in rural areas with roads and 1.3% in rural areas without roads. Similarly, 51% of TVET trainees were from urban settings, 45% were from rural areas with roads, and 5% were from rural areas without roads. Additionally, Wheelahan & Moddie (2016) reported regional-based disparities in TVET enrolment for developed (urban) and under-developed (rural) regions. Their study showed average TVET enrolment trends of 23.7% and 89% for ISCED 3 (upper secondary) and ISCED 4 (tertiary levels) respectively, influenced by available alternative education options for students in the different regions. Thus, the urban-rural divide relating to the degree of development for different regions also led to some disparities. For ISCED 4 for example, nearly all students enrolled in North America (100%), Latin America and Caribbean (97%) regions were TVET while nearly a million students (61.1%) in SSA were TVET.

The One-Way ANOVA was also computed to assess if there was a statistically significant difference in the enrolment of students based on urban-rural settings. Results are summarized in Table 4.5.

Table 4.5:Enrolment of students based on institutional settings

ANOVA					
Enrolment of Students in TVET					
	Sum of Squares	df	Mean square	F	Sig.
Between Groups	174346.69	1	174346.69	73.04	.000
Within Groups	16708.20	7	2386.89		
Total	191054.89	8	174346.69		

The independent variable was the institutional settings of the VTI being either rural or urban. The ANOVA was significant, $F(1,7) = 73.04$, $p=0.05$). Therefore, there was a significant difference between the enrolment of VTI students based on institutional setting because 0.000 is less than 0.05. Similarly, the large F value of 73.04 affirmed the wider difference between TVET enrolment rates in rural and urban settings, than within the groups of TVET institutes involved in the study. Triangulating with observations made for the learning environment, the researcher noted that urban institutions had a more friendly learning environment, with strategic location, adequate classrooms, medical, sanitation and boarding facilities, among other attributes. Contrary, rural-based institutions were distant from main access roads (over 10 kilometres), with uncondusive classrooms, dormitories, sanitation and library facilities. Likewise, the study's post-document analysis interview with one male IL at KNVI004 revealed that:

We cannot take on female students without hostel facilities. Females cannot enrol easily in absence of hostel facilities because some come from far... (Mr Winok, male IL, urban, August 2019).

Whereas KNVI004 was based in an urban setting, it lacked hostel facilities, which replicated in low female students' enrolment rates. These findings showed that conducive location, infrastructure and hostel facilities impacted students' participation in TVET. These findings affirmed propositions of the FST (Thompson, 2003, p.15) that argued that strategies for the promotion of gender equity in education were dependent on the larger support system, including the rural-urban divide and the infrastructure facilities. These results concurred with studies by Ayonmike, Okwelle, & Okeke (2015) that cited TVET institutions in Nigeria with inadequate classroom blocks, unconducive staff offices, inadequate electricity, water supply, TVET tools and machines as well as inadequate consumable and instructional materials, which affected quality participation in TVET. Further, Bahagdhel, et al., (2017) noted that Charter schools in France with adequate resources, high-quality teachers, and a strong academic environment boosted children's academic performance and increased their aspirations. Consequently, the boarding children enjoyed better studying conditions and outperformed non-boarding children in mathematics, two years after admission. Likewise, findings by Ahmed, Wadood, and Mohammad (2020) cited that the rural-urban divide influenced the distribution of TVET trainees in Pakistan according to their training periods. For instance, 18.4% and 15.7% were registered for three months of TVET qualification, 27.14% and 24.07% for six months of TVET qualification, while 28.15% and 30.56% were identified for 12 months of TVET qualification in rural and urban set-ups respectively. Therefore, the urban-rural divide complements the multiple factors that impact gender equity

in form of enrolment and retention among VTI students. The contribution of some of these factors to gender equity has been discussed further in the subsequent sections.

4.3.3 Gender-based Enrolment Trends in VTI between 2013 and 2017

This study sought to establish gender-based enrolment trends of students between 2013 and 2017. Therefore, enrolment of students in two cohorts of 2013-2014 and 2015-2016 was established. These cohorts were chosen because they presented a complete data set of students at both the initial and progressive stages of the policies being assessed. The results are presented in Table 4.7 and Appendix H.

Table 4.6: Gender-based enrolment trends in 2013-2014 and 2015-2016 cohorts

Institute	Initial Policy Era (2013-2014)				Progressive Policy Era (2015-2016)				% Enrolment Increase	
	Females		Males		Females		Males		F	M
	N	%	N	%	N	%	N	%	%	%
Rural										
Mean										
Enrolment	24	32.9	46	67.1	29	28.8	86	71.2	17.8	87.7
Urban										
Mean	36	24.7	205	75.3	42	26.1	212	73.8	16.5	3.9
enrolment										
Total Enrolment & %	182	19.5	752	80.5	213	19.2	895	80.8	17.0	19.0

Source: Primary document analysis data (2019)

According to findings in Table 4.7 and Appendix H, enrolment of females was nearly a quarter of the total enrolment 19.5% (182) and 19.2% (213), in both the

2013-2014 and 2015-2016 cohorts respectively. Quite the reverse, the enrolment rate of males in the two cohorts was greater than three-quarters of the total enrolment 80.5 % (752) and 80.8% (895), in the 2013-2014 and 2015-2016 cohorts respectively.

Related to institutional settings, female students' enrolment rate was about a third 30.9% (26) of the total students' enrolment for both cohorts in rural VTI. Conversely, male students' enrolment rate was two-thirds 69.2% (41) of the total students' enrolment in both cohorts. Nonetheless, enrolment of both female and male students in both cohorts was less than 50 students indicating low participation.

Whereas an increase in both female and male students' enrolment was noted in the two cohorts, male students' enrolment rate was three-quarters 74.6% (209) of the total enrolment rate. Equally, female students' enrolment rate was only a quarter of the total enrolment 25.4% (41) in the two cohorts, with the highest and least rates at 66.7% (90) and 5.3% (11) respectively. Generally, male students' enrolment rate increased by five times 19% (143) more than female students 17% (31) for the two cohorts. Specifically, female and male enrolment rates in both cohorts increased by 17.8% (13) and 87.7% (121) and 16.5% (18) and 3.9% (22) in rural and urban VTI respectively. However, the difference between the percentage proportions of female and male students enrolled in the two cohorts was only -0.3% (31) from 19.5% to 19.2% and 0.3% (143) from 80.5% to 80.8% respectively, showing a less significant regional increase.

These findings seemed to suggest that the type of TVET trades offered at a VTI influenced the enrolment rates of female and male students respectively. For instance, MMNS006 trains traditionally female TVET programs and had more female students while WKT1003 and KNVI004 train mostly non-traditional TVET programs and thus had more male students. Secondly, enrolment of male and female students did not significantly increase at both the inception (2013-2014 cohort) and progressive (2015-2016 cohort) stages of the gender policies in rural and urban VTI, despite a 10% annual projection by the BTVET strategic plan (MoES, 2013). According to the FST, girls were argued to have the same potential as boys to perform well in science and maths-based subjects (Thompson, 2003). These findings however indicated gender disparities in students' enrolment due to gender stereotypes relating to TVET as male-oriented, hence leading to the noted gender inequities. These findings concurred with those of Opit (2014) in Uganda that noted that whereas girls' and boys' enrolment in Sciences kept increasing before and after policy inception of the Uganda Government science-based university sponsorship policy (UGSBUSP), there was no significant difference in their enrolment rate before and after policy inception. Her study surprisingly noted that enrolment of both genders at A' level decreased after policy inception in 2007 with girls' and boys' enrolment rates at 255 (52%) and 312 (61%) respectively in 2011. Likewise, findings by Iddrisu (2016) in Ghana revealed a steady increase in children's enrolment rates in treatment schools not charging admission, examination and entrance exams fees as a form of policy adherence, in comparison with control schools charging the different fees, which

had a 1.6% less enrolment rate in 2008/2009. Treatment schools' enrolment rate was 5.3% higher than control schools in 2010/2011 and highest at 16.2% in 2013/2014 (ibid). Nevertheless, both Iddrisu's (2016) and Opit's (2014) studies were not conducted in TVET institutes, hence the current study revealed evolving trends regarding the contribution of gender policies to students' enrolment trends. The study findings however disagreed with those by Kushmakar (2016) in Nepal which showed that the mean value of female trainee participation in TVET programs was about two-thirds of the mean value of male participants. His study affirmed that females had statistically equal participation in TVET programs with males (ibid). This divergence might most likely be linked to the TVET trades studied and other socioeconomic determinants in Nepal.

According to the post-document analysis interviews with IL about their gender-based enrolment trends, one IL at MCPR001 cited that:

We need money. Whenever students show interest in joining our programs, we do not hesitate to enrol them. It is their funds that meet the day-to-day running of the institute... (Mr Dekem, male IL, rural, August 2019).

According to a female Head of the Department, enrolment in VTI was influenced by both the institution's and parents' advocacy strategies. She revealed that:

The parents always advise our students to join TVET. Sometimes, we go to the communities and tell them about technical education... (Ms Jadika, female instructor, rural, August 2019).

Their views seemed to indicate that students' enrolment and involvement in TVET were influenced by institutional factors like funding, and community and family advocacy strategies. These findings concurred with findings by Matsolo,

Ningpuanyeh, and Susuman (2018) who noted that finances and transportation to institutions hampered access to HEI in South Africa. The association between these factors and gender equity was explained in the subsequent sections.

4.3.2 Trade-based Enrolment of VTI Students

Trade-based enrolment of VTI students was also explored and computed as shown in Table 4.6.

Table 4.7: Trade-based enrolment rates of students in six institutes

Trades	Percentages (%)		Mean Enrolment		N
	Female (%)	Male	Female	Male	
WWT	3 (3%)	99 (97%)	0.33	11	9
BCP	32 (10%)	285 (90%)	4	32	9
Nursing	176 (59%)	124 (41%)	20	14	9
TGD	104 (96%)	04 (4%)	12	0.4	9
AHS	21 (53%)	19 (48%)	2.3	2.1	9
Electricity	49 (10%)	430 (90%)	5.4	47.7	9

BCP-Building and Construction, TGD-Tailoring and Garment design, WWT-Woodwork technology, AHS-Agriculture and Home Science

Source: *Primary document analysis data (2019)*

The findings in Table 4.6 showed that enrolment rates of females were descendingly higher in traditional trades at 96% (104), 59% (176) and 53% (21) for TGD, Nursing and AHS respectively. Male participation was descendingly higher in non-traditional TVET programs at 97% (99), 90% (430) and 90% (285) for WWT, Electricity and BCP respectively. Conversely, the representation of females in non-traditional programs like WWT 3% (3), Electricity 10% (49) and

BCP 10% (32) was less than a quarter participation rate. Interestingly, the mean enrolment in Nursing and AHS for both genders was nearly parity rate at 55.6% (99) and 44.4% (72) for females and males respectively. Importantly, AHS trade was taught in three of the sampled VTI while Nursing was taught in only one. These findings implied that the varieties of TVET trades in VTI influenced gender-based enrolment and promoted stereotypes. More so, one male CSO advocate cited that:

...Therefore, girls are equipped with tailoring and hairdressing skills while boys are equipped with knowledge of mechanics, metal and craft, motor-bike repairs... (Mr Bagom, male advocate, rural, August 2019).

Despite Mr Bagom's contribution to education access for boys and girls, their approach promotes gender stereotypical training with girls' training in tailoring and hairdressing skills while boys are equipped with mechanical, and motor-bike repair skills. Reference made to FST, girls were argued to have the same potential as boys for performing well in science and maths-based subjects (Thompson, 2003, p.7). These findings however disagreed with this proposition of FST not only relating to gender stereotypes in some TVET trades but also low academic grades in STEM, thus leading to the noted gender inequities. These findings concur with Kushmakar (2016) who reported that most traditional VET programs like beauticians and cosmetologists had a high inclusion of women while poor participation appeared in non-traditional trades like building electricians in Nepal.

Furthermore, interviews with different study Participants stated reasons for their choice of TVET trades. The female role model instructor of BCP at WKTI003 cited that:

My sister studied and completed a BCP diploma and then enrolled on a degree course. Upon completion of the degree, she got employed as an assistant manager and she encouraged me to also enrol (Ms Harito, female instructor, urban, August 2019).

Similarly, a female role student studying Electricity at KNVI004 said:

I have an aunt who was working with Electricity Regulatory Authority (ERA). She is the one who encouraged me to join this course (Akol, female student, urban, August 2019).

Additionally, a male role model student studying TGD at LBAC005 mentioned:

I have an instructor called madam Liya. She motivates us. She tells us not to lose morale. (Oumol, male student, rural, October 2019).

Conversely, a CSO gender advocate noted:

It is assumed that girls' education does not relate to their future roles as mothers. TVET remains unpopular generally particularly amongst girls because these have a science background right from secondary that girls usually shun (Ms Taweno, female CSO advocate, urban, October 2019).

These findings seemed to suggest that role models in TVET greatly contributed to TVET enrolment and retention. Nonetheless, the science divide at lower education levels and low academic grades in STEM influenced females' participation in non-traditional fields. According to the Subject-Task value (STV) theory, students' motivations and achievement-related choices are argued to influence their expectations to succeed and subject-task values (Eccles, 2005). Therefore, enrolment, retention and choice of TVET trades for VTI students were influenced by role models and the science divide that impacted grades at lower education levels. These results concurred with Ngugi & Muthima (2017) who affirmed that students' backgrounds, gender and peer pressure had a greater influence on their career choices in TVET. Conversely, gender stereotypes depicting TVET-related courses as masculine hampered females from pursuing

them, in addition to social norms which regarded women as caregivers (Ngugi & Muthima, 2017). Thus, females preferred careers that allowed flexibility to balance family and career responsibilities. Hence, strict policy adherence and the presence of role models at institutions and workplaces were suggested to avert this.

4.3.4 Gender-based Transition Trends in TVET between 2013 and 2017

This study further investigated students' transition rates from one year to another in the two cohorts of 2013 and 2015 respectively. The results are shown in Table 4.8 and appendix I.

Table 4.8: Gender-based transition rates in 2013-2014 and 2015-2016 cohorts

	Transition phase I (2013-2014)				Transition phase II (2015-2016)				% Increase or decrease	
	Female		Male		Female		Male		Female	Male
Settings	N	%	N	%	N	%	N	%	%	%
Rural										
Mean TR	20	34	52	66	21	26	78	74	5	56
Difference in TR									-8	8.3
Urban										
Mean TR	31	24	148	76	40	26.3	162	74	29	9.5
Difference in TR									2	-2
Total	172	28	445	72	181	23	694	77	-5	5
Mean TR rural & urban									25	75

%- Percentage

TR- transition rates

Source: *Primary document analysis data (2019)*

The findings in Table 4.8 and appendix I showed a slight increase in female students' transition rates of 5% (9) from one cohort to another. Contrary, male students presented a major increase of 56% (249) from the 2013-2014 cohort to the 2015-2016 cohort. Therefore, the mean transition rate of male students at 74.5% (570) tripled that of female students at 24.5% (177) for the two cohorts. However, the difference between the percentage proportions of female and male students retained in the two cohorts was -5% (13) from 28% (172) to 23% (181) and 5% (249) from 72% (445) to 77% (694) respectively. These results showed a less significant regional increase for females while that of male students was slightly significant. According to the rural-urban divide, the female students' transition rate was a third 30% (20) while that of male students was more than two-thirds 70% (65). Likewise, female and male students' transition rates in urban settings were 25% (35) and 75% (155) respectively.

These findings seemed to imply that female students' transition trends did not improve with the progression of gender policies being studied, while that of male students slightly improved. Therefore, the results suggested that gender may be a major hindrance to students' transition rates, and policies alone had minimal impact on students' transition rates. Further, the noted gender and set-up disparities in students' transition rates predicted multiple factors enhancing them, including institutional location, presence of adequate teaching-learning resources, gender stereotypes in TVET, and financial constraints, among others. These results corroborated with findings by Iddrisu (2016) in Ghana which showed that 6.6% more boys than girls retention rate was registered in the 2008-2009

academic years while a negative retention rate of -3.2% was recorded between 2013 and 2014. However, his study was conducted at the basic education level while the current study presented emerging retention trends among VTI students. Moreso, Hongmei, et al., (2015) argued that baseline academic performance, maternal education and migration status were strong correlates to students' dropout rates while Biji and Lawrence (2019) cited feelings of isolation, curriculum content, administrative process and financial constraints as strong impediments to students' retention rate in South African TVET.

Furthermore, students' dropout rates were computed and the results are presented in Table 4.9.

Table 4.9: Gender-based drop-out rates in rural and urban institutes

Institutes	Female Drop-out rates (%)			Male Drop-out rates (%)		
	Cohort 2013-2014	Cohort 2015-2016	Mean rate	Cohort 2013-2014	Cohort 2015-2016	Mean rate
Rural			10%			11%
MCPR001	2 (6.3)	16 (46%)	26	+4 (0)	50 (33%)	17%
WMTS002	1 (8.3)	0 (0%)	4.2	+13 (0)	0 (0%)	0
LBAC005	0 (0)	0 (0%)	0	0 (0)	0 (0%)	0
Urban			19%			17%
WKTI003	6 (33.3)	5 (19%)	26%	116 (34%)	146 (37%)	36%
KNVI004	4 (25)	2 (22%)	24%	52 (23%)	3 (2%)	12%
MMNS006	5 (6.7)	6 (7%)	8%	1 (2%)	2 (4%)	3%
Overall mean			15%			14%

Source: Primary document analysis data (2019)

According to the results in Table 4.9, the mean drop-out rates for female students at 10.1% (6) and male students at 11% (8) students was nearly a tenth of the student population in the two cohorts in rural settings. For the urban settings, nearly a quarter drop-out rate for female and male students at 19% (5) and 17.1% (53) respectively was recorded. This was slightly higher than that recorded for rural VTI. Conclusively, nearly a quarter of drop-out rates were recorded for both female and male students recorded at 15% and 14% respectively. Further, the highest dropout rates for females were registered at 45.7% (16) in rural VTI while that of male students were 37.1% (146) in VTI respectively. Likewise, the drop-out rate in urban VTI was nearly twice that in rural VTI, implying the availability of attributes in both settings that impacted students' transition rates.

Relating the findings to the FST, girls were argued to have the same potential as boys to perform well in science and maths-based subjects (Thompson, 2003). However, the noted gender and set-up disparities in students' drop-out rates predict multiple factors enhancing them, including institutional location, presence of adequate teaching-learning resources, gender stereotypes in TVET, and financial constraints, among others. The results are contrary to those of Hongmei, et al., (2015) who reported that the drop-out rate of TVET students in upper secondary schools was 10.7% in two provinces of China and as high as 22% in poorer inland areas, suggestive of major gaps and disparities. According to Hongmei and colleagues, drop-out rates were higher in Shaanxi (a poorer inland province than in Zhejiang (an urban province). Similarly, Iddrisu (2016) reported a progressive increase in pupils' drop-out rates for treatment and control schools

between 2008 and 2015, with the highest and lowest values at 2.4% and 1.1% respectively for basic education. Iddrisu (2016) conducted his study at the basic level of education and this study produced new knowledge about TVET retention rates in the Central region of Uganda.

Triangulating the drop-out rates data with data from the learning environment observation schedules for different VTI in the Central Region of Uganda, the learning environment in rural-based VTI was not as conducive as that in urban-based VTI, hence unattractive and demotivating for students to enrol and stay in institutions.

For LBAC005 and WMTS002 situated in rural districts, the classrooms were small with dusty floors, unroofed shelters, no or small workshops, absence of flowing water with students having to walk long distances to fetch water, small congested and unclean hostels, inaccessible (very distant from major highways) and unhygienic sanitation facilities for both students and staff (Study observations, primary data, September 2019).

Additionally, library facilities, materials and instructor-related challenges hampered their concentration in class. A male student leader at LBAC005 cited that:

...We do not have a library or textbooks to refer to whenever our teachers give us assignments. Some of us with smartphones can use the internet when we have data but not all of us have smartphones. We do not have running water in the institute and during the dry season, we have to walk up to three kilometres to fetch water. The situation is worse for our sisters... (Oumol, male student, rural, September 2019).

Similarly, a female CSO gender advocate emphasized:

...Girls need a conducive environment that can entice them to stay in school. TVET institutions need to have attractive and spacious hostels, very clean toilets and safe running water to make them feel at home. If that happens, all of them will most likely study and

complete their programs... (Ms Pesi, female CSO advocate, rural, August 2019).

These assertions seemed to suggest that the learning environment needs to be conducive if students have to enrol and transit in TVET. These findings concurred with Santhya, et al., (2014) who opined that household factors (75%) including school-related reasons (11%) and transportation (15%) hindered students from attaining their educational aspirations in India, thus leading to school drop-out. Similarly, Matsolo, Ningpuanyeh, and Susuman (2018) cited finances, orphanhood and transport to higher institutions as factors that contributed to drop-out in higher education institutions in South Africa. Therefore, multiple strategies for improving student retention rates were suggested in the subsequent sections.

4.3.5 Participants' Perceptions of Students' Enrolment and Retention

The study further sought Participants' insights about TVET enrolment and retention. Their responses are presented in Figure 4.2.

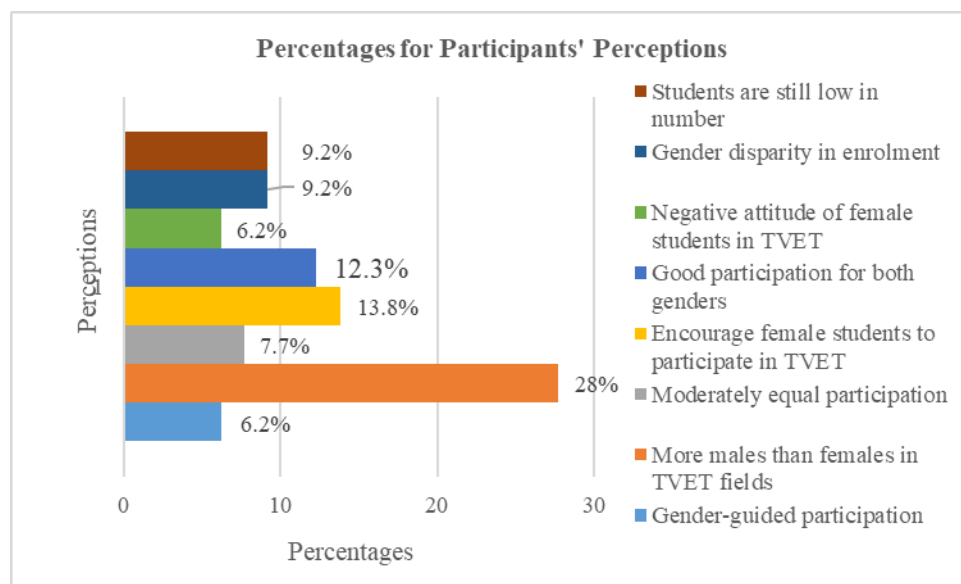


Figure 4.2: Views about enrolment and participation of students in TVET

Source: *Primary document analysis data (2019)*

Results in Figure 4.2 highlighted that the majority 27.7% (18) perceived more males than females participating in TVET. Additionally, a tenth of the participants 13.8% (9) encouraged female students to participate in TVET while a few participants 6.2% (4) reported negative attitudes of females towards TVET. Relating these perceptions with data from participants' interviews, justifications for some of their views in Figure 4.2 are revealed therein. According to a female CSO advocate, the low participation of females in TVET is linked to several factors:

NSGE does not look at the structural issues, it looks at issues like teenage pregnancies, poverty and other factors that affect girls' stay in school but it does not provide solutions to those problems. For instance, women spend 75% of their time doing unpaid work or domestic work which is one of the reasons why most girls don't go to school at times (Ms Taweno, female CSO advocate, urban, October 2019).

Furthermore, a male gender advocate in a rural district affirmed that their district presents challenges of high child marriages, teenage pregnancy and extremely high school dropouts, most of which hamper students' participation in TVET. He noted:

Lately, empowering girls and boys economically through acquiring hands-on skills is a major focus, especially for those that have dropped out of school. (Mr Bagom, Male CSO advocate, rural, August 2019).

These findings seemed to suggest a low-status quo for TVET amidst gender disparities and stereotypes. Significantly, despite Mr Bagom being an education and literacy advocate, his views affirmed TVET as a second priority for students

dropping out of school and not perceived as a major academic pathway which promotes inequitable participation. Relating these views to the STV theory (Eccles, 2005), it claimed that students' motivations and achievement-related choices were influenced by their expectations to succeed and subjective-task values. Therefore, the participants' views affirmed that values of attainment (competence), intrinsic (interest), utility (usability) and cost (sacrifices) influenced students' involvement in TVET. These findings are in agreement with Ngugi & Muthima (2017) who cited great gender disparities in TVET enrolment among male and female students in Kenya over the years, with males dominating females. For example, 60.5% of the total TVET enrolment was male while 39.5% were females in 2012. Ngugi & Muthima (2017) further argued that enrolment in TVET programs depended on what was traditionally tagged as either male or female TVET programs. Females thus opted for programs that enabled them to balance work and family responsibilities. This was equally noted with some CSO advocates conducting TVET with a gender-stereotyped mindset. The study findings disagreed with those by ILO (2016) in Mongolia, where females represented 47% of the total enrolment in TVET institutions in 2009-2010, with 62% of all full-time instructors being females. Therefore, gender-biased participation in TVET was unified in some countries like Kenya while in others like Mongolia, participation was slightly better due to policy-related reasons. This study thus proposed policy interventions in chapter five that can avert such mindsets and attitudes, as a way of boosting TVET participation.

4.4 Contribution of TVET Advocacy Strategies to Gender Equity among VTI Students

Objective two of this study examined the contribution of TVET advocacy strategies to gender equity among VTI students. Therefore, the participants' knowledge and acquaintance with two gender policies which are; the Business Technical Vocational Education and Training (BTVET) strategic plan and National Strategy for girls' education (NSGE) in Uganda was sought, and how that contributed to gender equity among VTI students. More so, respondents' motivations to participate in TVET and the relationship between TVET advocacy strategies and gender equity were sought.

4.4.1 Participants' Knowledge of Gender Policies

Participants' knowledge of gender policies was sought and their responses are shown in Table 4.10

Table 4.10: Familiarity with Gender policies based on participants' category

Knowledge about Gender Policies		Category of Participants			Total	%
		Instructors	Students	Institutional leaders (IL)		
BTVET strategic plan (N=250)	Yes	41	89	9	139	55.6
	No	15	96	0	111	44.4
NSGE in Uganda (N=250)	Yes	34	72	5	111	44.4
	No	22	113	4	139	55.6
Other TVET policies (N=241)	Yes	12	4	0	16	6.6
	No	44	172	9	225	93.4

Source: *Primary data (2019)*

According to Table 4.10, it was noted that more than half of the participants 55.6% (139) were familiar with BTVET strategic plan while nearly half of the participants 44.4% (111) were familiar with the NSGE policy. Interestingly, some participants 6.6% (16) were familiar with other TVET policies including, the promotion of girl-child education and prevention of gender-based violence (GBV).

Based on the participants' categories, all IL (100%) were familiar with the BTVET strategic plan while nearly half of them 56% (5) were aware of the NSGE. Further, less than half of the students were familiar with BTVET strategic plan and NSGE at 48% (89) and 39% (72) respectively. Convincingly, more

instructors were familiar with both the BTVET strategic plan and NSGE at 73% (41) and 61% (34) respectively.

Furthermore, the study interviews with role model students, district leaders, and ministry officials exhibited mixed perceptions about gender policies that contribute to gender equity among VTI students.

Accordingly, a male role-model student at MMNS006 asked about policies, strategies, or guidelines that promote the participation of both female and male students in nursing and noted:

I do not know any documents that have been written by either the institution, nursing society, or the government to encourage both male and female students in nursing (Luket, male student, urban, September 2019).

Another female role-model student at KNVI004 noted:

The government is currently promoting the education of the girl child in institutes by giving them sponsorships because I am also government-sponsored... (Akol, female student, urban, August 2019).

Likewise, a female district leader (DL) noted:

I haven't seen any policies that focus on technical training. What has been done in VTI is the introduction of new courses that favour females or girls, unlike in the past when there was no training. This doesn't mean that the government has developed any policies for VTI (Ms Abinu, female DL, urban, August 2019).

On the contrary, a female official for MoGLSD elucidated:

Every department in the ministry has a guiding policy and these are numerous...We have policies like the equal opportunities policy, and the national gender policy, ...(Ms Feni, female official, MoGLSD, September 2019).

These findings and excerpts seemed to suggest the average popularity of TVET policies. Similarly, they presented a lag in information flow about TVET policies

as corrective and affirmative strategies intended to improve TVET access and retention, despite recommendations by FST, thus not addressing gender inequities in TVET (Thompson, 2003). Arguably, the different participants showed knowledge gaps about the gender policies being studied. According to STV theory (Eccles, 2005), these results aligned with the ‘utility’ and ‘cost’ values which denote the relevance of different TVET policies or programs and the sacrifices in form of time, efforts, funds, and valued alternatives for disseminating the TVET policies or programs to participants and institutions. These findings are synonymous with studies by Pirzada (2020) which showed that 52% of the respondents were applying UNESCO TVET strategies in their training and believed that gender equity and equality were useful TVET strategies in their institutions. Whereas reports by MoES (2013) in Uganda revealed a major gap between policy and practice, with many national-level actors having only heard about the NSGE strategy but had never guided their activities, these results revealed that NSGE was only fairly heard-of at district and institution levels, even with the top-most administrators. Thus, TVET advocacy strategies like policy dissemination, evaluation, research, and publication were anticipated to avert the low policy advocacy (MoES, 2013). Equally, Wheelahan & Moddie (2016) suggested that advocacy for TVET required information strategies, proper policy implementation, and joint efforts from communities, families, and institutions. Additionally, Adalakun, et al., (2015) asserted that sensitization by government, policymakers, and other stakeholders at all levels about the benefits of equitable participation in TVET and enactment of policies that enhance gender-based

participation were major strategies for addressing gender inequities in TVET. This implies that without information strategies for gender policies including political and government will, the policies remain unfamiliar to many thus not achieving their intended goals. Convincingly, studies by Adelakun, et al., (2015) and Atari & Mckague (2015) suggested that government will, political will and close collaborations of different stakeholders towards equitable participation in TVET were paramount for enhancing TVET advocacy. Therefore, advocacy for TVET requires collaborations between governments, institutions, communities, and different stakeholders to disseminate, implement and evaluate the different policies intended to promote gender equity.

4.4.2 Relationship between Knowledge of Gender Policies and Institutional Settings

The Chi-square test for independence was computed to ascertain the extent to which participants' institutional settings influenced their knowledge of gender policies. The findings are presented in Table 4.11.

Table 4. 11: Relationship between gender policies and institutional settings

Chi-Square Tests						
Knowledge of TVET policies	N	Institutional Settings		df	Chi-Square values	Asymp. Sig. (2-sided)
		Rural	Urban			
BTVET Policy	250	f	f	1	.327 ^a	.057*
NSGE Policy		55	84		3.545 ^a	.060*
Total		90 (36%)	160 (64%)			

*. The relationship is not significant at the 0.05 level (2-tailed)

According to the results in Table 4.11, participants in urban settings 64% (160) were more familiar with gender policies than those in rural settings 36% (90). Likewise, the results presented an insignificant relationship between informants' knowledge of gender policies and their institutional settings in Central Region, Uganda, $X^2(1, n=250) = .33$, and 3.55 , $p=.057$ and $.060$ for BTVET and NSGE policies respectively. The results suggested the average popularity of the gender policies in the two settings. The results further implied that one's institutional setting (either rural or urban) could influence their knowledge of gender policies. This conforms with studies by Gore, et al., (2017) which revealed a weak effect of school location (metropolitan and provincial states) and students' VET aspirations (Odds Ratio=1.41). Nevertheless, findings by Ahmed, Wadood, and Mohammad (2020) cited that the rural-urban divide influenced the distribution of TVET-qualified women in their respective labour markets in Pakistan, with 108 (60.6%) women in urban areas while 70 (39.3%) were traced in rural areas. These variations in participation percentages of TVET-qualified women based on the rural-urban divide replicated the level of TVET advocacy for the two settings.

4.4.3 Use of Different TVET Advocacy Strategies in Institutions

The study further sought participants' views about the extent to which different TVET strategies were used using a four-point Likert scale with numerical values of 4, 3, 2, and 1 for always, often, sometimes, and never respectively. The means of their views are presented in Table 4.12.

Table 4.12: Means for use of different TVET advocacy strategies

Strategy	Extent of use	Gender of participants		Total	Mean	SD	Remark
		Male	Female				
Career Guidance	Scarcely used	15	7	22	3.3	.979	Often used
	Fairly used	55	43	98			
	Greatly used	76	40	116			
Usage %		62%	38%	236			
Research & Publications	Scarcely used	31	19	50	2.76	.963	Often used
	Fairly used	61	39	100			
	Greatly used	37	19	56			
Usage %		63%	37%	206			
Public lectures	Scarcely used	33	20	53	2.74	1.03	Often used
	Fairly used	53	30	83			
	Greatly used	41	24	65			
Usage %		63%	37%	201			
Fliers and magazines	Scarcely used	39	31	70	2.28	1.04	Some times
	Fairly used	48	16	64			
	Greatly used	23	13	36			
Usage %		65%	35%	170			
Social media	Scarcely used	14	11	25	2.98	1.04	Often used
	Fairly used	54	26	80			
	Greatly used	44	42	86			
Usage %		59%	41%	191			
TVET and Gender Policies	Scarcely used	28	18	46	2.67	1.04	Often used
	Fairly used	47	35	82			
	Greatly used	40	14	54			
Usage %		63%	37%	182			

SD -Standard deviation

% - Percentage

Source: *Primary data (2019)*

Except for fliers and magazines, findings in Table 4.12 showed that participants agreed to often use the different advocacy strategies based on the mean ranges of 2.67 and 3.3. Career guidance (3.3) and social media (2.98) were the most used advocacy avenues. The standard deviation indices also ranged from 0.8 to 1.04, implying that participants' responses were clustered around their means. Related to gender, more males agreed with the usage of the different advocacy strategies at rates of more than fifty per cent while female participants reported usage rates of more than a quarter for all advocacy avenues.

Additionally, the study interviews with a female student, male DL, female ministry official, and CSO gender advocate cited the advocacy strategies used.

The female student noted:

Through advertising, we girls at the foundation level have known that we can upgrade and become civil engineers in the future. For students who completed secondary education and failed to upgrade, advertising of TVET has enabled them to enrol and acquire skills for job creation... (Atipo, female student, urban, September 2019).

Similarly, a male DL also highlighted:

To improve enrolment, we have done advertisements through mass media and in churches because most of our vocational institutes are church-based. Sometimes we go to the communities and talk to them about TVET. In my church, the parish priest gives me time every Sunday for TVET announcements...(Mr. Mumiso, male DL, urban, August 2019).

Further, a female ministry official reported collaboration with other stakeholders as a policy advocacy strategy:

Most of our strategies are around capacity development and awareness creation. We do promotions on women's days, the day of the girl child, ... We do a lot of advocacy work so that people know what the government's intentions and priorities are. At the community level, we use structures like CSO, cultural institutions,

and faith-based institutions, which can influence people's mindsets (Ms Feni, female official, MoGLSD, September 2019).

According to a female advocate from CSO, multiple advocacy avenues have been used for different policies. She mentioned:

Looking at the constitution, we are one of the organizations that ensured that our constitution is gender-sensitive and promotes equal opportunities for all genders. We collaborate closely with MoGLSD, the parliamentary committee on gender, and over 20 CSOs. We have also advocated for the passing of the domestic violence act, the national gender policy.... (Ms. Yadak, female advocate, urban, September 2019).

The above findings and excerpts seemed to affirm the use of different advocacy strategies for TVET and gender equity including sensitization, awareness creation, and multi-sector collaborations. Nonetheless, study observations of the learning environment at the six VTI revealed that none of them had any posters or fliers for TVET advocacy or gender policies. Additionally, the institutions lacked key gender and TVET advocacy messages within classrooms, sanitation areas, dormitories, and compounds except for one at MCPR001 about the protection of girl children against HIV and early marriages, and others at WKTI003 and KNVI004 communicating the institutes' mottos and visions (see Appendix J). However, their positionings were far from areas of heavy student traffic thus minimally accessed by all. Still, picture 1 of appendix J showed gender bias in the distribution of gender roles. More so, the majority of the institutions lacked functional gender units or departments, despite policy recommendations for all VTI to constitute them (MoES, 2011; MoES-Uganda, 2013). Triangulating with excerpts from the male official of MoES, he cited challenges in TVET advocacy:

We have a challenge of low advocacy. Institutions don't look out for students. They are not in contact with their parents. They don't

go to secondary schools to get students. Many students in technical schools are from poor backgrounds (Mr Mpasu, male official, MoES, October 2019).

Referring to FST, the theorists proposed the use of rational educational programs and corrective affirmative policies as strategies to counteract gender inequities. (Thompson, 2003). Similarly, these findings coincide with propositions of STV theory (Eccles, 2005), specifically the ‘utility’ and ‘cost’ values denoting the relevance of the different TVET policies or programs and the sacrifices in form of time, efforts, funds, and the valued alternatives for disseminating the TVET policies or programs to participants and institutions, as determinants of TVET advocacy strategies. The study findings corroborate studies by Ngugi and Muthima (2017) who argued that raising awareness for gender issues at the institutional level would achieve greater social benefits for students and trainees, including increased female participation in TVET. Equally, Olelewe, Orji, Onisen, and Ikemelu (2019) in Nigeria noted that 13 social networking sites (SNSs) promoted collaborative learning and participation in TVET. Likewise, Atkins and Flint (2015) in England suggested that career guidance, future career goals, previous education grades, and familial influence impacted students’ choice of Further Education (FE). They resolved that TVET policies at University Technical Colleges might raise the esteem of specialised and elite TVET, but not the broader middle-level TVET programs (ibid). Likewise, Sullivan (2019) acknowledged posters as media for advocacy, voicing support, raising awareness, and communicating unfolding injustices. Convincingly, Resnick (2013, as cited in Sullivan, 2019) in her exhibition titled ‘graphic advocacy’ showed posters as media for social change. Nevertheless, the findings of Cheruiyot and Wanyaga

(2019) revealed multiple barriers to sustainable gender equity interventions, including gender issues and a lack of clear policy guidelines among others. Their study also noted that gender centres were not fully operational and had been reinstated for employment and earning purposes, and did not necessarily offer guidance about the gender issues in the institutions (ibid). Therefore, Adedokun, et al., (2015) encouraged career guidance and counselling related to TVET, and advocacy by the government and other policymakers about the relevance of equitable TVET participation, as strategies for addressing gender inequities.

4.4.4 Participants' Motivations to Participate in TVET

This study further identified students' motivations to participate in TVET, as a form of advocacy strategy. Their responses are shown in Figure 4.4.

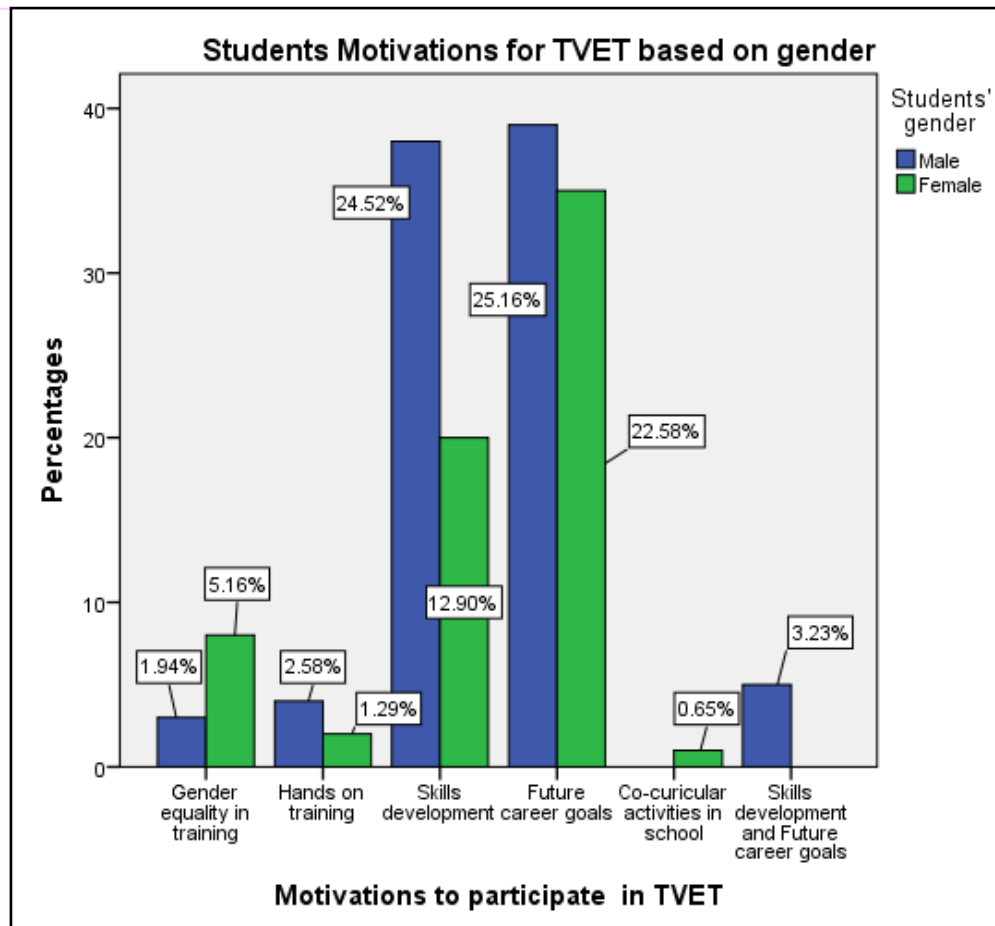


Figure 4.3: Gender-based motivations of students for TVET

Source: *Primary data (2019)*

According to the results in Figure 4.4, nearly half of the students 49% (79) reported future career goals while more than a quarter 39% (63) cited skills development as the major motivation for their TVET participation. Based on gender, male students mostly cited future career goals at 25.2% (61) and skills development at 24.5% (54) as their motivations for TVET participation. Equally, female students cited future career goals and skills development at 22.6% (18) and 13% (9) respectively. However, the agreement rate for females regarding

career goals and skills development was slightly lower than that of males, partly because the participants' sample comprised more males than females.

Additionally, sentiments in Figure 4.4 were affirmed by interviews with different role-model students and instructors. Referring to the male student of AHS at MCPR001:

I want to be a great baker and one lady called 'Aliket' bakes good cakes. We usually download her cake pictures and designs from her Facebook page. I want to bake cakes like hers (Atiku, male student, rural, August 2019).

Another male student of AHS at WMTS002 reported:

I once went to apply for a job after senior four at a restaurant and was asked if I had acquired any training in Catering. There and then, I applied to join this VTI for training so that I get the certificate... (Moselo, male student, rural, August 2019).

Furthermore, a female instructor of BCP at WMTS002 noted:

When we completed senior four, my father encouraged me to pursue being an architect. He took me to a VTI where an instructor counselled and told me that I would be an engineer who would draw plans. That male instructor encouraged and supported me... (Ms. Jadika, female instructor, rural, August 2019).

For the female instructor of BCP at WKTI003, she highlighted:

My sister had sat for senior six and wanted to become an engineer but didn't have money. She decided to join the BCP course, studied, and completed the BCP diploma and degree courses. She then got employed as an assistant manager in a reputable engineering company (Ms Harito, female instructor, urban, August 2019).

These findings and extracts seemed to suggest that students' future career goals enhanced by career guidance, interest, and role model aspects amidst socio-economic challenges, influenced their choice of education and career paths. Therefore, students in this study based their inspiration for TVET on both the

intrinsic and utility value determinants as highlighted by the STV theory (Eccles, 2005). Eccles (2005) proposed that students' choice of education or career path (subject) was dependent on how important the task was in achieving a short- or long-term goal (utility value) as well as his/her level of enjoyment of the career path (intrinsic value), which was TVET in this case. Therefore, students' choice of career paths and TVET fields depended on their interest in the field, as well as its contribution to their intended career paths. These values of interest and importance for TVET boosted enrolment and retention in the TVET field as well as minimized chances of drop-outs due to low interest or ambition. These views are in conformity with studies by Atkins and Flint (2015) who noted that career guidance and future career goals impacted students' choice of FE in England. Ayonmike, Okwelle, and Okeke (2015) further emphasized that students' factors like poor interest in learning, peer group influence, and lack of self-confidence marred quality TVET participation. Therefore addressing such impediments as advocacy strategies would enhance gender equity.

4.4.5 Relationship between Advocacy Strategies' Use and Students' Enrolment

Conclusively, the research question to be answered was, what is the contribution of TVET advocacy strategies to gender equity among VTI students in Central Region, Uganda? Thus, the relationship between the use of TVET advocacy strategies and students' enrolment was determined using chi-square tests. The findings in Table 4.13 showed their relationships.

Table 4.13: Relationship between the use of advocacy strategies and students' enrolment

Chi-square Tests						
Students' enrolment						
Advocacy strategies	Female students			Male Students		
	Fisher's Exact value	Sig. (2-tailed)	Cramer's V (Approx. Sig)	Fisher's Exact value	Sig. (2-tailed)	Cramer's V (Approx. Sig.)
Career Guidance	18.35	.583*	.207	20.71	1.00*	.324
Research and publications	18.35	.583*	.207	20.71	1.00*	.324
Public lectures	24.58	1.000*	.300	29.02	1.00*	.304
Fliers and magazines	16.90	.333*	.207	18.43	1.00*	.324
Social media	16.91	.361*	.207	18.50	1.00*	.324
TVET and gender policies	6.72	1.000*	.431	8.36	1.00*	.342
N of Valid Cases						9

***. The relationship is not significant at the 0.05 level (2-tailed)**

The chi-square test for independence (with Fisher's Exact Test) indicated no significant relationship between the use of advocacy strategies and female students' enrolment, X^2 (n=9) =18.4, 18.4, 24.6, 16.9, 16.9, 6.7, p=.58, .58, 1.0, .33,.36, 1.0, for the respective advocacy strategies. Similarly, the chi-square test for independence (with Fisher's Exact Test) indicated no statistically significant

relationship between the use of advocacy strategies and male students' enrolment, with p-values greater than the alpha value of .05. These results implied that there was no association between the use of TVET advocacy strategies and gender equity of female and male students in Central Region, Uganda. However, Cramer's V coefficients for the different advocacy strategies ranged between 0.2-0.4, indicating a medium measure of association between advocacy strategies and students' enrolment (Pallant, 2007, pp. 214-218). These results seemed to argue that despite confirmation of the use of different advocacy strategies (see Table 4.13), this did not necessarily replicate gender equity, perhaps due to several reasons. Firstly, the intensity of using these strategies with means ranging from (2.67-3.3) indicated moderate utilization of these strategies. Secondly, advocacy for TVET and gender policies was noted to be average (see Table 4.10), where nearly half of the participants were unfamiliar with both the BTVET strategic plan and NSGE policies. These factors coupled with gender stereotyping in education, society, homes, and schools fuel gender inequities. Referring to the conceptual framework, whereas an association between the use of advocacy strategies and gender equity might have existed, it was noted to be statistically insignificant. These findings confirmed the results by Kushmakar (2016) who emphasized that gender inequity is enhanced by sociocultural practices, low socioeconomic status, patriarchy, and low education. He noted that girls were often prepared for their husbands' homes, while males were trained to be superior to females in many aspects including education. Likewise, Cheruiyot and Wanyaga (2019) in their study in Kenya showed multiple limitations to sustainable gender equity

interventions including inadequate funding for gender-equity-related activities, limited gender awareness among students, staff, and institution managers, negative attitudes towards gender issues, and lack of clear gender policy guidelines. The contribution of some of these factors has further been discussed in the subsequent sections and chapters.

4.5 Contribution of Financial Resources to Gender Equity among VTI Students

Objective three of this study explored the contribution of financial resources to gender equity among VTI students in the Central Region of Uganda. Therefore, data for students' funding avenues, student's fees payments, receipt of capitation grants, perceptions of TVET budgets, and staff remunerations were presented. The contribution of the different funding avenues to gender equity of students was pursued and participants' perceptions about financing strategies that can enhance TVET participation were explored.

4.5.1 Funding Avenues for Students in TVET

Institutional leaders (IL) also shared data on funding avenues students employ to access and transit in TVET. Their views are presented in Table 4.14.

Table 4.14: Means for funding avenues for students

	N	Counts		%	Total n	Mean	
		Female	Male			Females	Males
Government Sponsored	9	239	541	27.1	780	27	60
Privately Sponsored	9	417	1620	70.8	2037	46	180
Studying on Bursaries	9	22	38	0.02	60	2	4
Total		678	2199				

Source: Primary data (2019)

According to results in Table 4.14, the majority of the students 70.8% (2037) were privately sponsored while nearly a third 27.1% (780) were government-sponsored. Results further showed that the mean of male government-sponsored students (60) nearly doubled that of females (27). Similarly, only a quarter of the female students (46) were privately sponsored compared to three-quarters of male students (180).

Further, the findings in Table 4.14 were triangulated with data on school dues payment modes for students as shown in Figure 4.5.

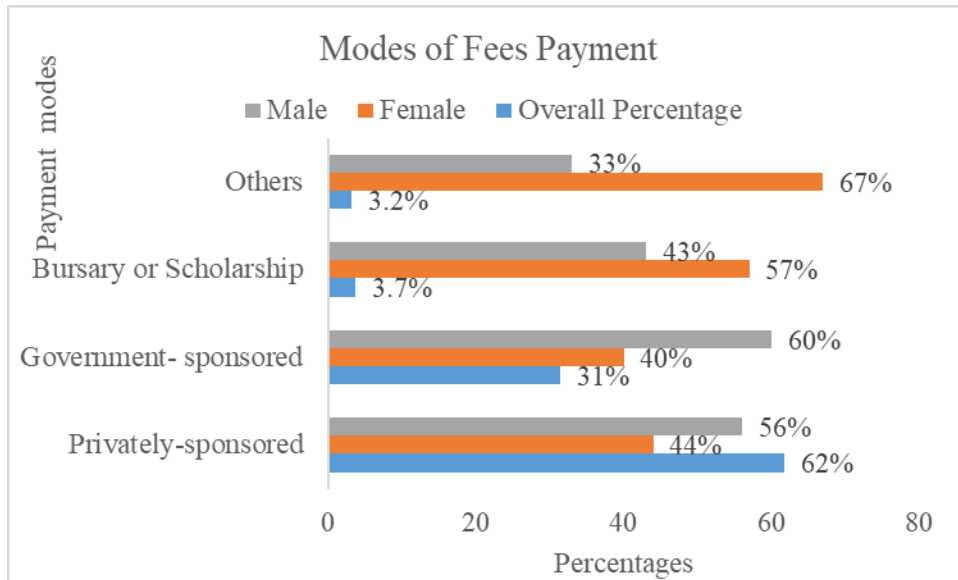


Figure 4.4: Percentages for fees payment modes for TVET students

Source: Primary data (2019)

The findings in Figure 4.5 affirmed that the number of privately sponsored students was double that of government-sponsored ones at 62% (114) and 31% (58) respectively. Based on gender, slightly more males 56% (64) than females 44% (50) were privately-sponsored. Likewise, government-sponsored students comprised more males 60% (35) than females 40% (23). There were however more females 57% (4) than males 43% (3) on bursaries or scholarships.

Additionally, the study interviews with informants revealed the different funding avenues. The female instructor at WKT003 highlighted that:

...when I joined the VTI, I paid fees for myself because my parents had decided to stop paying fees at O' level... (Ms. Harito, female instructor, urban, August 2019).

Further, a male student at MMNS006 reported:

I am government-sponsored and this sponsorship supports the timely payment of my school fees (Luket, male student, urban, September 2019).

Interestingly, a female student at MCPR001 mentioned:

Both my parents and boyfriend pay my school dues and meet my needs (Agupo, female student, rural, August 2019).

These findings and excerpts implied that privatization of education access including TVET has boosted equitable participation, with the majority of students accessing TVET through private sponsorship while others studied with both government sponsorship and scholarships. The findings also indicated that gender disparities in TVET access were replicated in the funding avenues for TVET with more males than females recorded for most funding avenues. Relating the findings to the propositions of STV theory, the participation of VTI students in TVET was based on both the intrinsic and cost value determinants (Eccles, 2005). Similarly, FST proposed fair treatment of males and females by teachers, parents, and school administration as strategies for promoting gender equity in education (Thompson, 2003). Therefore, a fair selection of female and male students for sponsorship, scholarships, fees weavers, and payments by school administrators, parents, or sponsors would replicate gender equity, and the reverse was assumed to be true. These results concurred with findings by Matsolo, et al., (2018) in South Africa that noted that more than three-quarters (92%) of students in HEI accessed education through private sponsorship while only a few (8%) received financial support. Thus, many students depended on family income, loans and other means of funding their studies (ibid). Equally, studies by Biji and Lawrence

(2019) noted that financial constraints promoted school dropout in TVET while the provision of bursaries and stationery in TVET institutions promoted retention and attrition.

4.5.2 Receipt of Capital Grants and Dispatch Period

Institutional leaders were asked if they received capital grants from the government and the average period taken for dispatching the funds. Their views are shown in Table 4.15.

Table 4.15: Percentages for receipt of capital grants

Variable	Categories	Percentages (%)
Receipt of capititation grants (N=9)	YES	100 (9)
	NO	0 (0)
	Total	100 (9)
Average dispatch period (N=9)	Below 2 months	0 (0.0)
	2-4 months	57.1 (4)
	More than 4 months	42.9 (3)
	Total	100 (7)

Source: Primary data (2019)

The results in Table 4.15 indicated that all six VTI (100%) were receiving capital grants from the government. This was a major criterion for sampling VTI for this study. Nonetheless, more than half of the institutes 57% (4) received the capital grants within a period of two to four months while the others 43% (3) took more than four months.

Accordingly, a district leader noted that:

The capital grant to VTI is very little money. They give 122,200 to each student per year. It is often said they have given an institution

157 million Ugx a year but how many students are enrolled ...?
(Mr Mumiso, male DL, urban, August 2019).

These findings implied that despite the receipt of grants as specified in the BTVET strategic plan (MoES, 2011), the funds were dispatched late to the majority of VTI, which impacted the effective implementation of the policies and instruction. Equally, the interview extract noted that the amount allocated to each student annually is insufficient. Referring to FST, it proposed increment improvements as a long-term strategy for a more equitable society (Thompson, 2003). Therefore, capital grants were a form of such increments, which if sufficient and timely dispatched would enhance a conducive learning environment thus promoting equitable participation among VTI students. Nevertheless, delays in the dispatch of these grants and low rates for each student affected the contribution of such increment improvement strategies to equitable participation. According to the BTVET strategic plan, the receipt of capital grants with the introduction of modular programs was anticipated to boost enrolment capacity with a doubling effect by 2020 (MoES, 2011). These findings thus reinforced studies by Drotos & Cilesiz (2016) which cited that funding related to college dues and daily survival was a requirement for students' enrolment in high-poverty, urban high schools in the USA. Consequently, scanty resources created academic, emotional, and financial risks in the learning environments (ibid). Likewise, Orodho (2014) noted that despite the 32.4% government support to FDSE in Kenya, the rate per student was insufficient especially for girls, in addition to the late dispatch of these funds. This affected students' regular school attendance, especially those from low SEC backgrounds.

4.5.3 Views about TVET Budget Allocation and Staff Remuneration

IL also shared views about TVET budget allocation while instructors and IL shared views about staff salaries and rewards. Their responses are presented in Table 4.16.

Table 4.16: Percentages for views about TVET budget allocation and staff salaries

	Views	Percentages (%)
Views about TVET budget allocation (N=9)	Low Salaries vis-a-vi workload	88.9 (8)
	Increase salaries for staff	11.1 (1)
	Total	100 (9)
Views about salaries and rewards for TVET staff (N=65)	Low salaries vis-a-vi workload	48.3 (29)
	Gender equity in salaries	3.3 (2)
	Fairly adequate remuneration	5.0 (3)
	Unmotivating salaries for staff	10 (6)
	Salary increments required	28.3 (17)
	Others	5.0 (3)
	Total	100 (60)

Source: Primary data (2019)

Referring to Table 4.16, the majority of the IL reported low salaries for staff 88.9% (8) as a major hiccup in TVET budgeting. Whereas the question item required their views about the budget allocation for TVET as a whole, their responses hinged strongly on salaries for staff. Triangulating findings in Table 4.16 with views on staff salaries and rewards, the majority of participants 48% (29) mentioned low salaries for staff, more than a quarter 28.3% (17) commended

salary increments, while a tenth of the participants 10% (6) noted un motivating salaries for staff.

Additionally, the study interviews with some participants revealed multiple perceptions about staff salaries and rewards. The female instructor of BCP at WMTS002 noted that staff salaries hampered equitable participation in TVET:

...they have to improve our salaries so that the profession can be admired by students. Many of us are surviving on loans, which are also insufficient. That is why we engage in part-time work here and there which affects our students because we don't have enough time with them (Ms Jadika, female instructor, rural, August 2019).

Further, a female CSO gender advocate emphasized that:

...if the TVET budget was enough, enough facilities would be provided. The biggest challenge facing rural schools is inadequate staffing. If resources were enough, we would have more quality teachers recruited. I think it is also about remuneration. Most of the teachers gamble to survive. They get little money... (Ms Yadak, female CSO advocate, urban, September 2019).

These findings and extracts affirmed that both the intrinsic (level of enjoyment) and cost values (sacrifices in form of time, efforts, funds and valued alternatives) influenced budget allocations to TVET, which also impacted gender equity among VTI students. With insufficient budget allocations to TVET, less would be allocated towards remunerations and rewards, which influenced instructors' participation in TVET. Subsequently, the unfavourable participation of instructors in TVET impacted the gender equity of students. Equally, the inadequate salaries did not enable instructors to meet their basic needs, which demotivated them to perform their duties well, as well engaging in part-time jobs. Similarly, FST proposed increment improvements as a long-term strategy for a more equitable

society (Thompson, 2003). Thus, for scenarios where TVET budgets were insufficient and staff salaries inadequate, instructors' morale and commitment to perform their duties diligently would be low, which consequently impacted the learning environment in terms of instructors' commitments and motivation. These findings conform with studies by Adelokun, et al., (2015); Ayonmike, et al., (2015); Gameda & Tynjala (2015) and Orodho (2014) which emphasized the need for earmarking funds for technical education by the government, as a way of boosting TVET participation. Further, studies by Miles & Katz (2018) revealed a growth in salary gaps among teachers in the USA, with teachers earning 17% less than their peers by 2015. The researchers noted that the average teacher salary was less than the family living wage in about half of all states, thus insufficient to meet their regular expenditures on food, childcare, medical care, housing and transportation. Further, UNESCO (2016b) reported young people as less-interested in joining the teaching profession due to poor remunerations. Therefore, there is an ardent need to make TVET instruction more attractive to the young through adequate salaries and rewards along with increased budget allocation.

4.5.4 How Funding and Staff Salaries Contribute to Gender Equity

This study further explored participants' views about how funding, staff salaries and rewards contribute to gender equity. Their views are shown in Table 4.17.

Table 4.17: Contribution of staff salaries and TVET funding to gender equity

Perceptions about staff remunerations (N=65)	Percentages (%)
A Uniform workload promotes equitable motivation	2 % (1)
Salary increments improve staff participation	6.1% (3)
Motivate staff to work	79.6% (39)
Minimizes moonlighting of staff	10.2% (5)
Enhances voluntary participation and delegation of roles	2% (1)
Total	100% (49)
Perceptions about students' funding (N=185)	
Increases students' concentration	83.2% (84)
Improves students' attendance at school	16.8% (17)
Total	100% (101)

Source: Primary data (2019)

Table 4.17 showed that most of the staff 80% (39) argued staff salaries and rewards to motivate staff to work while a tenth of them 10% (5) revealed how conducive staff salaries minimized moonlighting of staff. Relating their views with interview excerpts from a female CSO advocate, she affirmed that staff salaries boost instructors' morale:

...you know remuneration affects someone's morale, diligence and level of care. If one is not well-paid and has things to take care of, she/he will not concentrate a hundred per cent. And if the teachers abscond from work and do not cover the curriculum, it affects the quality of the graduates (Ms Taweno, female CSO advocate, urban, October 2019).

According to a male DL, he argued:

... Instructors are surviving on loans. They are not contented. They are not sure if they will get dinner or medical treatment if they fall sick. How do you expect such a person to work? They part-time here and there and so do not concentrate...(Mr Mumiso, male DL, urban, August 2019).

Accordingly, Table 4.17 presented views about how funding contributes to the gender equity of students. Therefore, more than three quarters 83% (84) cited its impact on their concentration in class while nearly a quarter 17% (17) reported improvement in regular school attendance. Linking these views with interview findings from the female CSO advocate, male student and male DL, they postulated that funding for TVET promotes retention and regular attendance of students in school. The CSO advocate noted:

... about student retention, if I was a student who is struggling to pay my fees but the teachers are absent, I may be tempted to drop out and find something better... (Ms Taweno, female CSO advocate, urban, October 2019).

Likewise, a male student of MMNS006 cited:

Some adult students who fund their education won't be in school all the time. They desire time from school to attend to their work and raise school dues. But if someone is paying your tuition, you will always be available for studies (Ogumu, male student, urban, September 2019).

Conversely, a male IL at WMTS002 suggested that funding impeded the quality participation of some students in TVET. He cited:

...students sponsored by Non-Government Organisations (NGOs) are complicated. They don't care about their learning and participation in school activities which affects their stay in school (Mr Okullom, male IL, rural, August 2019).

These findings seemed to propose that the 'cost value' of STV theory (funds, time, valued alternatives) impact the intrinsic value in terms of instructors' and

students' enjoyment and motivation to participate in TVET. This consequently impedes the gender equity of students. These findings are in agreement with Gameda and Tynjala (2015) who noted that teachers' salaries and rewards were key issues in their motivation and development. Low teachers' salaries had a distressing impact on the whole education process, devaluing their work, thus leading to the loss of teachers to better-paying professions. Zhilla (2013, as cited in Gameda & Tynjala, 2015) further emphasized that a compensation financial amount could be perceived to satisfy and motivate workers. Similarly, studies by Obikwelu and Nwasor (2017) in Nigeria noted that male and female teachers perceived remunerations to influence their motivation.

The findings also implied that funding enhanced gender equity among VTI students through increased concentration in class and regular school attendance. Whereas funding was argued to promote regular school attendance, scholarships from NGOs promoted a lack of care for some students. These findings conform to studies by Drotos & Cilesiz (2016) who affirmed that school dues and other contextual challenges hampered college attainment for economically disadvantaged students. According to their study, the availability of funds to pay for college studies was a requirement for students' participation in college education while scanty resources and fees deterred students from graduating and participating in high school events. Likewise, the enrolment rate of students in HEI in South Africa was strongly influenced by the school fees owed (Matsolo, et al., 2018) while inadequate funding promoted dropout from TVET institutions (Biji & Lawrence, 2019).

Additionally, this study ascertained whether there was a statistically significant association between views about staff salaries and their contribution to gender equity. Chi-square tests were computed and the results are shown in Table 4.18.

Table 4.18: How staff salaries relate to their contribution to gender equity

Chi-square Test			
	Values	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	52.336 ^a	20	.000
Likelihood Ratio	18.416	20	.560
Linear-by-Linear Association	.937	1	.333
N of Valid Cases	45		

Source: Primary data (2019)

Results in Table 4.18 showed a significant relationship between TVET staff salaries and their contribution to gender equity, $X^2 (20, n=45) = 52.3, p=.000$, at .05 alpha value. These results implied that as staff salaries and rewards increase, gender equity would also increase, with other factors being constant. These findings corroborate assertions that teachers with insufficient funds were unable to meet their family expenditures and thus more qualified for public assistance (Miles & Katz, 2018; Obikwelu & Nwasor, 2017). Findings by Miles and Katz (2018) also revealed that teachers with the greatest gap between salaries and a family living wage exhibited the most substantial signs of an unhealthy labour market compared to their counterparts whose teachers received 10 per cent above their living wage. Consequently, such states exhibited high teacher deficits and turnover rates of 16.6 per cent, thus promoting inequities.

4.5.5 Timely and Adequate Resources and their Contribution to Gender Equity

The study further sought instructors' perceptions about the receipt of timely and adequate teaching resources and how that contributed to gender equity among VTI students. The participants' views are represented in Table 4.19.

Table 4.19: How supply of adequate resources contributes to gender equity

Variable	Categories	Percentages (%)
Receipt of timely and adequate resources (N=56)	YES	35.7% (20)
	NO	64.3% (36)
	Total	100 (56)
Alternative sources of teaching resources in TVET (N=56)	Improvisation by HoDs	46.7% (14)
	Browsing on internet	6.7% (2)
	Contributions from students	23.3% (7)
	Instructors mobilize resources	13.3% (4)
	Late Practical lessons	10.0% (3)
	Total	30 (100)
How timely and adequate teaching resources contribute to gender equity (N=65)	Limit improvisation	16.6% (3)
	Minimizes gender biases	11.1 (2)
	Promotes equity in interacting with resources	50% (9)
	Support instructors to conduct lessons	22.2% (4)
	Total	100 (18)

Source: Primary data (2019)

According to the results in Table 4.19, nearly three-quarters of the instructors 64% (36) reported non-receipt of timely and adequate teaching resources while a third of the participants 36% (20) agreed with the timely and adequate receipt of resources. Additionally, nearly half of the instructors reported improvisation by HoDs at 46.7% (14), about a quarter sourced materials from students at 23.3% (7)

while a few at 10.0% (3) conducted late practical lessons, as alternatives to the delayed supply of materials.

Triangulating the results in Table 4.19 with interview data from study participants, one male instructor and HoD at WKT1003 revealed that:

...We do not receive teaching resources in time. Sometimes we ask students to contribute money for the practical lessons. At times, we use our money to purchase the materials needed... (Mr Lumok, male instructor, urban, August 2019).

Likewise, a male role model student of TGD at LBAC005 affirmed that:

...We lack teaching materials and resources, yet our instructors give us a lot of coursework (Oumol, male student, rural, September 2019).

Furthermore, Table 4.19 showed participants' perceptions about how timely and adequate teaching resources contributed to gender equity among VTI students. Half of the instructors 50% (9) cited the promotion of equity in interacting with resources while nearly a quarter 22% (5) cited its relevance to the teaching and learning process. Interestingly, more than a tenth of the participants 17% (3) noted that it limited improvisation.

Equally, a male IL of WMTS002 noted that timely and adequate teaching resources would motivate instructors to train students practically in TVET. Sadly, the resources were not received in time:

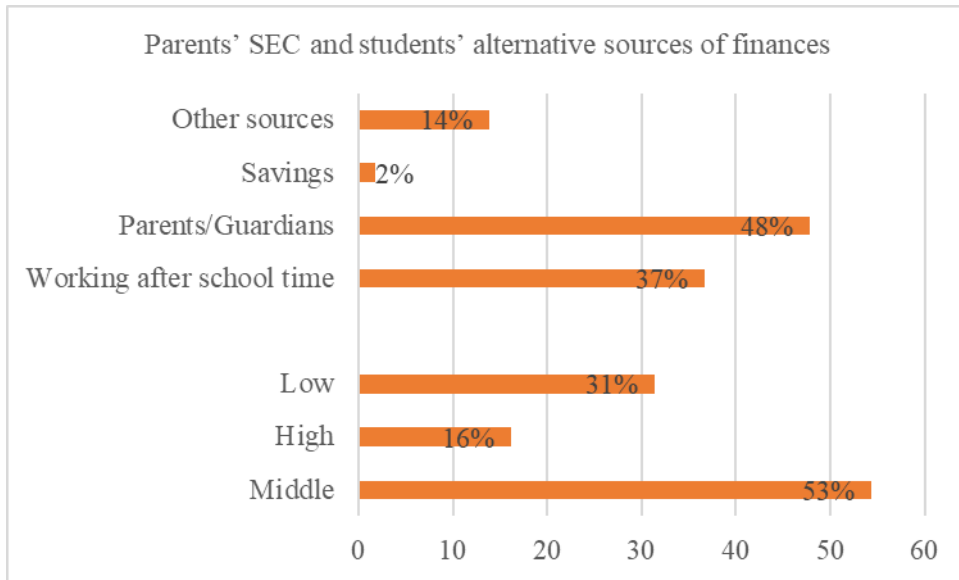
We train students between November and February but the resources for practical teaching are supplied at the end of the program. Do you expect instructors to get morale to train ...? (Mr Okullom, male IL, rural, September 2019).

These findings seemed to affirm that the cost value of STV ((Eccles, 2005) in terms of the provision of adequate and timely resources, dependent on budget

allocations for TVET impeded both education attainment and instructors' motivation, and subsequently gender equity among students. Notably, FST posited increment improvements as a long-term strategy for a more equitable society (Thompson, 2003). Such increments related to the provision of adequate and timely resources would motivate students and instructors to actively participate in TVET, attend school regularly, and engage in practical lessons and discussions thereupon leading to gender equity. Thus, the results conformed to studies by Adedokun, et al., (2015) and Ayonmike, et al., (2015) who noted that poor funding of TVET programs impeded quality education participation and attainment. Further, Adedokun et al., (2015) cited that poor provision of instructional materials to TVET institutions hampered the training of females in TVET. More so, Edokolor and Dumbiri (2019) cited that instructional resources were inadequate and under-utilised for teaching and learning VET in Nigeria. Thus, the rarely utilized instructional resources affected the effectiveness of teaching and learning in the TVET programmes (ibid).

4.5.6 Parents' Income, Alternative Sources of Funds and their Contribution to Gender equity

This study also explored work done by students' parents as a source of funds for TVET. Similarly, information about alternative sources of funds for school dues and other needs was established. Their views are depicted in Figure 4.6.



SEC- Social Economic Classification *Source: Primary data (2019)*

Figure 4.5: Parents' SEC and students' alternative sources of finances

According to a three-class version of the socioeconomic classification, SEC (Connelly, Gayle & Lambert, 2016), findings in Figure 4.6 showed that the majority of the student's parents were of middle SEC 53 % (97), more than a quarter of the students were of low SEC 31 % (58) while almost a quarter 16.2% (30) belonged to high SEC. Additionally, Figure 4.6 showed that the majority of the students 47.8% (86) depended on their parents or guardians while more than a quarter worked after school 36.7% (66) to meet their scholastic and personal needs.

Further, a gender-based analysis for the SEC of student participants was done as shown in Table 4.20.

Table 4.20: Distribution of students according to their SEC and gender

SEC of Parents or Guardians (N=185)	Gender of students		Total	%	
	Mal	Fem		Mal	Fem
High	12	18	30	40.0	60.0
Middle	54	43	97	55.7	44.3
Low	41	17	58	70.7	29.3
Total	107	78	185	58.0	44.0
Funding alternatives					
Working after school	49	17	66	74.2	25.8
Parents/guardians	40	46	86	43	47.0
Savings	2	1	3	67.0	33.0
Others	8	9	17	47.1	52.9

SEC -Social Economic Classification Mal- Males Fem- Females

Source: Primary data (2019)

The results in Table 4.20 revealed that more male participants 71% (41) had parents whose SEC was low while the majority of female participants 60% (18) had parents with high SEC. Further, the participation rate of male and female students from middle SEC was near parity at 56% (54) and 44% (43) respectively. Equally, more males 74% (49) than females 26% (17) were working after school while more females received financial support through other avenues like boyfriends 53% (9) than males 47% (8). Interestingly, nearly parity male and female students depended on their parents or guardians to meet their financial needs at 43% (40) and 47% (46) respectively.

Likewise, interviews with role model students affirmed these findings. A female student of AHS at MCPR001 reported:

My parents are farmers, and they pay my fees and meet other personal and scholastic needs. Sometimes, my boyfriend meets the rest of my needs...When they provide for my needs, my staying in school is safe, I will not miss school... (Agupo, female student, rural, August 2019).

Another male student of AHS at MCPR001 cited that:

My aunt is paying my tuition fees. To meet my other needs, I supply chapatis at the school canteen during break time. During holiday times, I work at a restaurant to get scholastic requirements for the next term (Atiku, male student, rural, August 2019).

These findings seemed to reveal that parents' or guardians' SEC as a source of TVET funding may both promote and impede students' participation in TVET. Whereas TVET is argued to be expensive, parents of middle and high SEC, whose children were the majority in the study sample 69 % (127) were likely to enrol and complete school unlike their counterparts of low SEC 31% (58). Importantly, more males than females from the low SEC engaged in work after school, thus increasing their chances of financial independency in comparison with females, hence promoting inequities. Despite the government paying for their tuition fees, students of parents for low SEC were prone to deficits for scholastic and personal needs, which encouraged them to engage in part-time jobs and get funding from boyfriends, like the case for Agupo. Consequently, their study time was compromised with these jobs and pre-marital relationships, which promoted irregular school attendance and school dropouts. Relating these results to STV theory, the 'cost value' in form of time, funds, resilience and valued alternatives influence one's participation and completion of TVET. Therefore,

parents' income aligns with the cost value of STV theory as a funding avenue for TVET and valued alternatives for the use of the available funds and time for TVET vis -a-vi the part-time jobs. These findings are consistent with studies by Bhattarai, Bernasek and Pena (2020) in Nepal that noted higher school attendance rates related to wealth and fines for absence from school. They showed that female students' attendance rates decreased with their age while it increased with the number of young siblings. Likewise, male students' school participation depended on wealth proxy and having an educated parent whose SEC would be high. Similarly, Shahrin, Normala, Irdyanti, and Noor (2020) affirmed that family and societal factors strongly influenced students' enrolment in TVET. Conversely, Drotos & Cilesiz (2016) and Vidyakala & Vaishnavi (2017) argued that low SEC and annual family income compelled students to hold jobs as a source of funds, which counteracted their study time and promoted absenteeism respectively. Nonetheless, the long working hours tasked their mental state and made their learning tiresome, which consequently led to drop-out or disengagement in quality learning.

Therefore, the research question to be answered was, what is the contribution of TVET financial resources to gender equity among VTI students in the Central Region, Uganda? These results and exerts discussed above indicated that despite agreeing with using the majority of the financing strategies (see Tables 4.14, 4.15, and 4.16), this did not necessarily replicate gender equity, due to many reasons. Firstly, whereas students were sponsored both privately and by the government, great disparities existed with the mean of male government-sponsored students

(60) doubling that of females (27) while only a quarter of the female students (46) were privately-sponsored compared to three quarters for male students (180). Secondly, despite receipt of capitation grants by all participating institutions (see Table 4.15), more than half of the VTI (57.1%) experienced delayed receipt by 2 to 4 months, which hampered equitable participation. Thirdly, the majority of the participants (90%) were dissatisfied with staff remunerations (see table 4.16), which had a strong correlation with gender equity among VTI students (see Table 4.17). More so, more than half of the instructors (64.3%) denied timely receipt of teaching materials (see Table 4.19). Likewise, despite most students having parents of middle and high SEC (see Figure 4.6 and Table 4.20), more than a quarter of their parents 31.4% (58) were from low SEC, which encouraged their daughters and sons to engage in part-time jobs to meet their financial needs, thus hampering regular school attendance, transition and quality participation. These factors coupled with gender stereotyping in education, society, homes and schools contributed to gender inequities. Therefore funding and salary challenges demotivated staff to work and promoted moonlighting of staff while timely and adequate TVET funding promoted retention and regular attendance of students in VTI. Referring to the conceptual framework, the predictable contribution of financing strategies to gender equity among VTI students was evident. These results conformed with studies by Matsolo, et al., (2018) in South Africa which cited that the fees owed (0.82) strongly influenced students' enrolment rates while a weak correlation was noted between bursaries or fees weavers and enrolment rate (0.21). Equally, Gore, et al., (2017) emphasized that SEC was a significant

predictor of interest in TVET. Their study cited that students of low SEC (quartile 1) and low-middle SEC (quartile 2) were more likely to choose TVET than those in the highest SEC (quartile 3).

Conclusively, chapter four has presented findings and discussions about the gender trends in enrolment and retention of VTI students between 2013 and 2017, the contribution of TVET advocacy strategies to gender equity among VTI students, and the contribution of financial resources to gender equity among VTI students respectively, in the Central region of Uganda.

CHAPTER FIVE

DATA ANALYSIS, PRESENTATION AND DISCUSSION II

5.1 Introduction

Chapter five presents the findings, interpretations and discussions for objectives four and five of this study. Objective four intended to establish the contribution of the Learner-Friendly Environment (LFE) to gender equity among Vocational Training Institutions (VTI) students, while objective five sought policy interventions that can boost gender equity among VTI students in the Central Region, Uganda.

5.2 Contribution of Learner-Friendly Environment (LFE) to Gender Equity

This section examined the status of the physical learning environment (PhLE), inside-class and psycho-social learning environment (IPsLE), co-curricular activities, and human resource status in VTI. Further, the contribution of the different LFE avenues to gender equity among VTI students was explored. Lastly, strategies that could promote gender equity were suggested and participants' perceptions about their contribution to gender equity were ascertained.

5.2.1 Status of the PhLE in TVET Institutes

The study observed the PhLE comprising: institution location, classrooms and workshops, sanitation facilities, kitchen and dining facilities, medical facilities

and co-curricular facilities. These attributes were predicted and generated from the literature review. The findings of these observations are depicted in Table 5.1

Table 5.1: Status of the physical learning environment

S/N	PhLE Attribute	Analysis (if available, adequate, or functional)	
		Urban	Rural
1.	Institution location	-Easily accessible	-Inaccessible
2.	Spacious and safe environment	-Noisy with an interruption from traffic -Fire -extinguishers at different points. -Gates and strong fences for all -Gates with security personnel	-quiet with less interruption from traffic -Fire assembly points -One fire extinguisher per institute -No gate and temporary fence -spacious
3.	Classrooms and workshops	-Spacious, sufficient equipment and materials -Classrooms close to workshops for easy integration	-Workshops with traditional and modern equipment -Small and dusty classrooms
4.	Sanitation facilities for students and staff	-Multiple water sources -Separate for males and females -Unclean and not in a good state - Handwashing facilities missing at critical points	-Flowing water not seen at critical points -Pit latrines for males and females are available -Unhygienic handwashing facilities seen
5.	Medical facilities	-Sickbays with a minimum of 10 beds and full-time nurse	-Non-operational sickbays -No full-time nurse
6.	Housing facilities for students and staff	-Staff houses insufficient for all staff -Separate dormitories for females and males	-A few staff houses, far from institutes -Sufficient and separate dormitories -Girls' dormitories close to boys' ones
7.	Library/ bookstore facilities	-Spacious with multiple books authored by males and females -Distant from heavy traffic	-Collection of old books, non-functional stores seen -Mostly male-authored books -Textbooks non-representative of all trades
8.	Kitchen and dining facilities	-limited to specific students -fairly spacious and hygienic	-No dining hall, but the multi-purpose room -Traditional kitchen facilities
9.	Co-curricular facilities	-Limited space for game activities -Mostly club activities seen	-Spacious for multiple ball activities and athletics

Source: Primary data (2019)

The results in Table 5.1 showed that the majority of the PhLE attributes were available and functional. However, some hindrances to equitable participation were noted. Most urban institutes faced interruptions from heavy traffic and noise, most sanitation facilities were unhygienic with inadequate hand-washing facilities at critical points, small and unhygienic dining facilities, small sports grounds, as well as insufficient housing facilities for staff. Conversely, rural TVET institutes were distant from heavy traffic and noise, with spacious sports grounds which presented a quiet and conducive environment for learning. Their PhLE however presented multiple hindrances to equitable participation including limited safety, small and dusty classrooms, unhygienic facilities, limited library facilities, non-functional medical facilities and distant staff houses.

The data in Table 5.1 was triangulated with data on problems experienced by students in the TVET learning environment as depicted in Table 5.2.

Table 5.2: Challenges faced by VTI students

Challenges (N=185)		Frequency (n)	Percentage (%)
Physical environment challenges	Expensive tools and materials	50	27.0
	School dues and personal finances	42	22.7
	Poor meals	20	10.8
	Poor sanitation and accommodation facilities	16	8.6
	Noisy neighbourhood	14	7.6
Inside-class and psycho-social challenges	Bullying, Theft and Tribalism	17	9.1
	Absenteeism of instructors	12	6.5
	Inadequate learning time	10	5.4
	Hectic practical lessons for females	4	2.2
Total		185	100

Source: Primary data (2019)

According to the findings in Table 5.2, the majority of the students cited equipment and tools challenges 27% (50), nearly a quarter noted funding challenges 23% (42), and a tenth cited poor meals challenges 10.8% (20) in the PhLE.

Furthermore, data from study interviews with key participants about the TVET learning environment affirmed these results. At LBAC005, a male student cited:

... they often ask me about my school but when I tell them about it, they tell me the school is far and they can't afford the transport... (Oumol, male student, interview data, October 2019).

At KNVI004, a female student of electricity emphasized:

We have good facilities at the institute like clean toilets, running water, lunch, and everything we need for real-life projects is available, but our environment is noisy. At times, our instructors move to other classes to control the noise due to traffic and shouting... (Akol, interview data, August 2019).

Further, a male DL emphasized:

...we don't have some machines yet these skills should be hands-on. They end up being theoretical. How will students study motor vehicle mechanics where there isn't even a vehicle in a VTI? (Mr Mumiso, male DL, urban, August 2019)

Likewise, Mr Mpasu, a male official from MoES reported that accommodation facilities and equipping TVET institutes were major barriers to the participation of students. Equally, a female CSO gender advocate cited:

Schools are not safe havens for girls, and we cannot say that the girls are being helped enough. Then the 'WASH' programs are not favourable enough in most schools. The quality of the classrooms is very poor ... (Ms Taweno, CSO female advocate, urban, October 2019).

Relating these results to the Feminist Socialisation Theory (FST) in education (Thompson, 2003), it suggested several strategies for promoting gender equity in education for instance fair treatment of males and females which depends on the larger support system of LFE. Therefore, a conducive environment in TVET would promote gender equity among VTI students while barriers to LFE would impede it. These results are consistent with studies by Ayonmike, Okwelle, and Okeke (2015), and Edokolor and Dumbiri (2019) which affirmed that physical facilities in TVET contributed to education quality in teaching-learning processes. Studies by Shahrin, Normala, Irdyanti, & Noor (2020) further affirmed that training facilities were one of the pull factors for students' enrolment in TVET community colleges in Malaysia.

5.2.2 Status of Inside-class and Psycho-social Learning Environment

This study further assessed the inside-class and psycho-social learning environment (IPsLE) of VTI students including the arrangement of furniture, class rules, teaching-learning methods and resources, instructor-learner interactions (language use, rewards, distribution of teacher's energy, students' participation), instructor-learner ratios, guidance and counselling.

Table 5.3 shows the results.

Table 5.3: Status of inside-class and psycho-social learning environment

S/N	IPsLE Attribute	Analysis (if available, adequate or functional)	
		Urban	Rural
1.	Furniture arrangement	-Available furniture was not sufficient for all students -comfortable furniture	-Disorganised and uncomfortable furniture
2.	Class Rules	- Workshop rules available but non-functional -Late coming, absenteeism, bullying, noted	-Late coming noted -Noise-making
2.	Teaching-learning methods	-Instructors as guides -Some students were allowed to experiment alone	-Mostly traditional methods, less interactive and boring -Instructors as guides
3.	Teaching-learning resources	-Insufficient for all students -Chalkboard and chalk are mostly used -Other resources minimally used	-Chalkboard and chalk are more commonly used -Few demonstration items with big students numbers -Learning aids not seen
4.	Language use	-Polite and non-abusive seen -A mix of local and English languages used	-Negative feedback to females, <i>why are you silent? Did you smoke before coming?</i>
5.	Rewards/ punishments	-Achievement-related instructions were noted -Some punishments were noted for late-coming	-Minimally used
6.	Student-instructor interactions	-About 2 students participate in lessons due to large numbers -Good instructor-student relationships, buzz groups used	-Passive interactions -Constructive feedback given
7.	Distribution of instructors' energy	-No special attention noted for both gender	-Instructors focused more on male students than females
8.	Instructor-students' ratio	1:32	1: 10
9.	Guidance and counselling	No session seen	None was seen despite noted vices like late-coming

Source: Primary data (2019)

Results in Table 5.3 and appendix J showed that most attributes of IPsLE were moderately available or functional. Specifically, furniture was mostly inadequate and uncomfortable, no class rules were displayed and used, traditional methods of instruction were mostly utilised, chalkboard and chalk were major tools of instruction, and other materials were insufficient for the available students' numbers. Additionally, the use of impolite and abusive language was evident, minimal participation of students in lessons was seen, with more focus on males than females, with no evidence of guidance and counselling during instruction, as well as moderate instructor-student ratios.

Triangulating results in Table 5.3 with participants' perceptions about fair treatment of boys and girls, methods of instruction, forms of school-related violence, and avenues for addressing them, participants' views are depicted in Table 5.4.

Table 5.4: Percentages for the status of IPsLE attributes in VTI

LFE Attribute		Frequency (n)	Percentage (%)
Fair treatment of boys and girls (N=185)	YES	137	74.1
	NO	48	25.9
Methods of instruction (N=250)	Lecture method	126	44.1
	Discussion	101	35.3
	Project method	54	18.9
	Others	5	1.7
Forms of school-related violence (N=250)	Verbal abuse	68	33.8
	Bullying	48	23.9
	Sexual abuse	36	17.9
	No violence	31	15.4
	Other forms	18	9.1
Ways of addressing violence and indiscipline (N=65)	Guidance and counselling	26	60.5
	Rules and regulations	7	16.3
	Disciplinary committees	6	14
	Using administrators and parents	4	9.3

Source: Primary data (2019)

According to Table 5.4, it was clear that most participants reported fair treatment of female and male students 74% (137) while a quarter of the participants 26% (48) cited unfair treatment. Moreover, results affirmed the presence of school-related violence including verbal abuse 34% (68), bullying 24% (48), and sexual abuse 18% (36). Most participants also cited guidance and counselling 61% (26) and adherence to rules and regulations 16% (7) as avenues for addressing school-related violence. Triangulating the results in Table 5.4 with results in Table 5.2,

bullying, theft and tribalism at 10% (17), absentee instructors at 7% (12) and inadequate training time at 5% (10) were cited as major challenges in IPsLE.

Further, the results in Table 5.4 showed that the lecture method was predominantly used in instruction at 44% (126), followed by the discussion method at 35% (101) while the project method was least used at 19% (54).

Equally, interview findings for different participants affirmed the status of the IPsLE and the challenges encountered. According to a female CSO gender advocate:

Funds for TVET materials are inadequate. Vocational training is hands-on based and materials have to be availed but most times, the materials are just for a few students and one wonders what happens to the rest... (Ms Kasamu, CSO female advocate, urban, September 2019).

Similarly, another female CSO advocate revealed:

Girls' access to vocational education is still hampered by ill-equipped institutions linked to inadequate funds, and the low level of female instructors in the field. There is also poor teachers' attendance to lessons, and the curriculum is still rooted in negative gender stereotypes (Ms Taweno, CSO female advocate, urban, October 2019).

According to a male instructor and HoD at WKTII003:

We do not use the new competence-based curriculum during instruction. It has complex modules, especially for girls, and it is expensive, and 'hard' to implement. We still use the old curriculum which is cheaper to implement and easier for students (Mr Lumok, male instructor, urban, August 2019).

Additionally, a male district leader mentioned:

Most instructors use demonstration, question and answer, discovery, and experiential learning methods (Mr Mumiso, male DL, urban, August 2019).

Furthermore, a female instructor at WKT1003 reported:

Here, some boys come with different behaviours and if you are not keen enough, they bully others. Second-year students abuse first-year students. What we do as instructors is to guide them about acceptable behaviour in the institution (Ms Harito, female instructor, urban, August 2019).

Despite the FST (Thompson, 2003) positing several strategies for promoting gender equity in education including fair treatment of males and females by teachers and parents, equitable pedagogical interventions for teachers, parents and school administrators, and addressing personal socialized perceptions, dependent on the larger support system (textbooks and other media, unbiased and objective curricula, and support of male teachers to feminist teachers' initiatives), results for IPsLE revealed multiple impediments to equitable participation. Notably, unfair treatment of male and female students, non-interactive instruction methods, impolite language use like asking a female student if she smoked before coming for lessons, gender insensitive curricula, insufficient and biased learning resources, disorganized classes and workshops, unequal distribution of instructors' energy and focus, school-related violence, and minimal guidance and counselling were evident. Such challenges often discourage many students from regular school attendance, demotivate them from learning and create an uncondusive learning environment, thus promoting inequities in participation, especially for females who already face other underlying barriers like sociocultural norms and attitudes, science divide, few role models, funding, among others. These results corroborate studies by Edokolor & Dumbiri (2019), Shahrin, et al., (2020), and Simmonds (2017) which reported that teaching

resources and curricula influenced quality participation in TVET. Moreover, Alber (2017) revealed that hidden gender biases in curriculum and teaching resources led to inequitable education participation. She cited that male-dominated class discussions, and uneven distribution of teachers' time and energy promoted inequalities in education. Further, Biji & Lawrence (2019) affirmed that feelings of isolation from students and instructors, and a theoretical curriculum affected students' participation and retention in TVET. Equally, Chege and Likoye (2015) reported that teachers' and schools' concentration on girls' education had played havoc in the construction of masculinities, which promoted inequities in the participation and performance of boys in Kenyan schools. Furthermore, Fong, et al., (2020) argued that the discussion method, imitation and giving assignments were the most used VP approaches by Malaysian engineering TVET teachers for theory and practical aspects respectively. These approaches were more interactive and enhanced students' participation in learning (ibid) unlike the less-interactive methods noted for this study which promoted an uncondusive learning environment.

5.2.3 Participation in Co-curricular Activities in TVET

Students and instructors in this study also shared views about participating in CCA and the kinds of activities engaged in. Their views are presented in Table 5.5.

Table 5.5: Percentages for CCA categories and participation rates

LFE Attribute		Frequency		Percentage (%)		
		F	M	F	M	TT
Participation in CCA (N=250)	YES	81	122	40.0	60.0	84.2
	NO	18	20	52.6	47.4	15.8
	Total	99	142			100
Categories of CCA (N=250)	Athletics	11	13	45.8	54.2	12.2
	Ball games	51	86	37	63.0	69.9
	Music, Dance and Drama	7	7	50.0	50.0	7.9
	Club Activities	6	4	60.0	40.0	5.1
	Others	4	7	63.6	36.4	5.6
	Total	79	117			100

CCA- Co-curricular Activities F-Female M- Male TT- Total

Source: Primary data (2019)

According to Table 5.5, it was evident that most participants 84% (203) were engaged in CCA while a few were not 15% (38). Similarly, more males 60% (122) than females 40% (81) were participating in CCA. Moreover, most participants 70% (137) engaged in ball games (football, netball, volleyball, woodball), a tenth engaged in athletics 12% (24) and a few in music, dance and drama (MDD) 8% (14). Female students participated more in club activities 60% (6) while male students did more ball games 63% (86).

Triangulating the finding in Table 5.5 with the study observations of PhLE, different CCA were evident. For the rural institutions, MDD, athletics, and several ball games were the commonest CCA. Institutions like MCPR001, and

MMNS006 hosted national competitions due to their spacious and multiple CCA facilities. For the urban VTI, both field and club activities were evident, with more focus on club activities like Debating, Environment, Rotaract, Scouts and Guides, Scripture Union, Entrepreneurship, and Red Cross clubs. Study interviews with informants further affirmed students' participation in the CCA.

One female student at KNVI004 said:

I am a member of the Rotaract club. Rotaract Club is more like a voluntary club and I love serving. We also tend to meet influential people in our society (Akol, female student, urban, August 2019).

Likewise, a male student at MMNS006 reported:

I am a footballer. We are currently preparing for inter-school competitions, inter-regions, and then national competitions next year (Ogumu, male student, urban, September 2019).

Interestingly, another female student at KNVI004 cited:

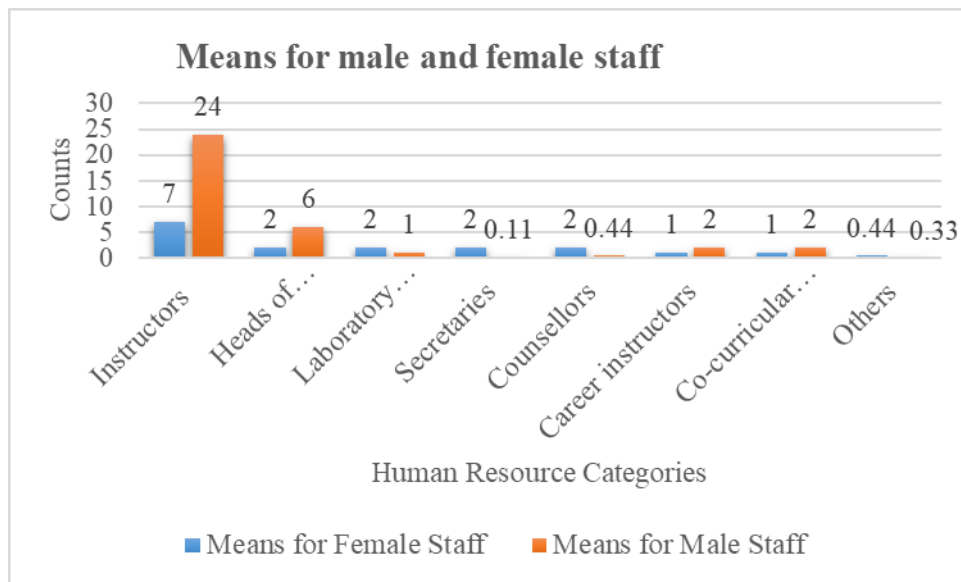
I participate in sports activities. I play football and cricket (Atipo, female student, urban, August 2019).

The findings in Table 5.5 and excerpts from interviews and observations affirmed participants' involvement in CCA. The varieties of CCA in TVET institutions encouraged both female and male students to choose and participate in one or more activities. According to the National Strategy for Girls' Education (NSGE) in Uganda (MoES, 2013), participation in CCA was strongly encouraged as an avenue for addressing inequities in education. These findings thus affirmed the policy propositions. Nonetheless, the findings disagreed with studies by Al-Ansari, et al., (2016) which recorded lower participation of 27.1% and 43.8% in CCA for two dental institutes respectively compared to the current study which registered 84%. This divergence might relate to how demanding medical-related

courses are and students might have failed to identify time for CCA activities. Their study, just like the current study showed that students participated in a range of CCA including community services, sports and social activities. Equally, the study findings did not concur with those by Naik and Wawrzynski (2018) in South Africa, which showed higher participation of female (61%) than male (39%) students in CCA unlike the current study with more males (60%) than females (40%) participating in CCA. This could be attributed to the study sample comprising more male than female participants.

5.2.4 Human Resources in VTI Learning Environment

This study further identified the proportions for human resource categories in VTI according to their gender. Figure 5.1 shows the findings.



Source: Primary data (2019)

Figure 5.1: Means for male and female human resources

Findings in Figure 5.1 showed that the mean for female instructors was only a quarter (7) of that for male instructors (24). Likewise, only a third of the heads of department (2) were female compared to males (6). Females were more dominant in categories of secretaries and counsellors (2 per institute) compared to males whose mean was less than 1 (0.11, 0.44) respectively.

With reference made to FST (Thompson, 2003), instructors, parents, and institutional administrators were anticipated to enhance the fair treatment of males and females in education through equitable pedagogical interventions and supporting feminist teachers' initiatives. Equally, the NSGE policy commended harmonized actions on human and financial resources (MoES, 2013). Nonetheless, the results showed a low representation of females as instructors, Heads of Department (HoDs), and top administrators (all IL in this study were male), thus counteracting equitable participation. Notably, these results affirmed the study assumptions of females being more dominant in traditional vocational fields like secretarial services while males were dominant in prestigious and non-traditional positions. These findings are synonymous with those by Dereje (2021) and Magaji, et al., (2020) who reported a low representation of female instructors in STEM and TVET respectively. Likewise, Asimwe and Atukwase (2017) noted a low representation of females in administrative positions in TVET institutions in Uganda and the situation is yet to improve 5 years later in the VTI of Central Region, Uganda.

This study further sought the relationship between students' enrolment and staff population in TVET institutions. Therefore, a Pearson Product Moment Correlation Coefficient (r) was computed and the results are depicted in Table 5.6.

Table 5.6: Relationship between students' enrolment and staff population

		Correlations	
		Students' enrolment	Staff population
Students' enrolment	Pearson Correlation	1	.571**
	Sig. (2-tailed)		.108
	N	9	9
Staff population	Pearson Correlation	.571**	1
	Sig. (2-tailed)	.108	
	N	9	9

** Correlation is significant at 0.01 level (2-tailed)

The results in Table 5.6 showed a significant positive linear relationship between students' enrolment and staff population in Central Region, Uganda $r(9) = .57$, $p = .001$. These results implied that an increase in staff population would increase students' enrolment by 57.1%. Therefore, increasing the staff population could address inequities among VTI students. These findings corroborate with studies by Magaji, et al., (2020) which revealed that the proportion of instructors influenced by students' enrolment promoted disparities in TVET teachers in Nigeria. Therefore, the more instructors the VTI would recruit especially females,

the more students the institutions would receive due to improved focus, morale, and motivation raised by their presence.

5.2.5 Human Resource Competencies

This study equally explored the academic qualifications of the instructors. Figure 5.2 shows the findings.

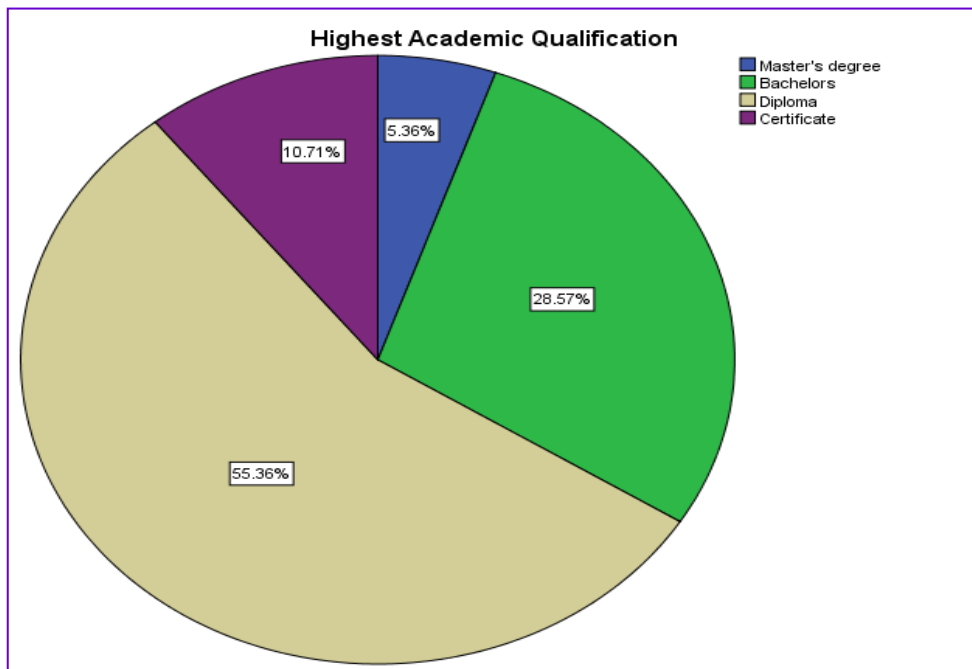


Figure 5.2: Percentages for academic qualifications of instructors

Source: Primary data (2019)

According to Figure 5.2, the majority of the instructors 55% (32) had diplomas, more than a quarter 28.6% (20) had bachelor's degrees while a tenth 10.7% (4) had attained certificates in varying TVET fields. These findings seemed to suggest that instructors' academic credentials determined their expertise in

handling gender-related challenges in TVET, which influenced the gender equity of students. Equally, their academic competencies supported them to transit from didactic imparting of skills and knowledge to the facilitation of learning, which encourages students to enrol and stay in school. These findings corroborate studies by Shahrin, Normala, Irdianti, and Noor (2020) which noted that instructors' competencies significantly influenced students' enrolment in TVET in Malaysia. Equally, Langat, Omboto, Ambuli, and Ngeno (2021) reported a positive significant relationship between trainer academic qualification and training effectiveness in public TVET institutions in Kenya. They also noted that trainer qualification, continuous professional development and pedagogy influenced trainer effectiveness in TVET. However, there is still a need to train instructors with learner-centred and gender-sensitive pedagogy, to address the noted inequities.

5.2.6 Role Models in TVET Learning Environment

Students in this study further shared information about who their role models were. Percentages of their views are shown in Figure 5.3

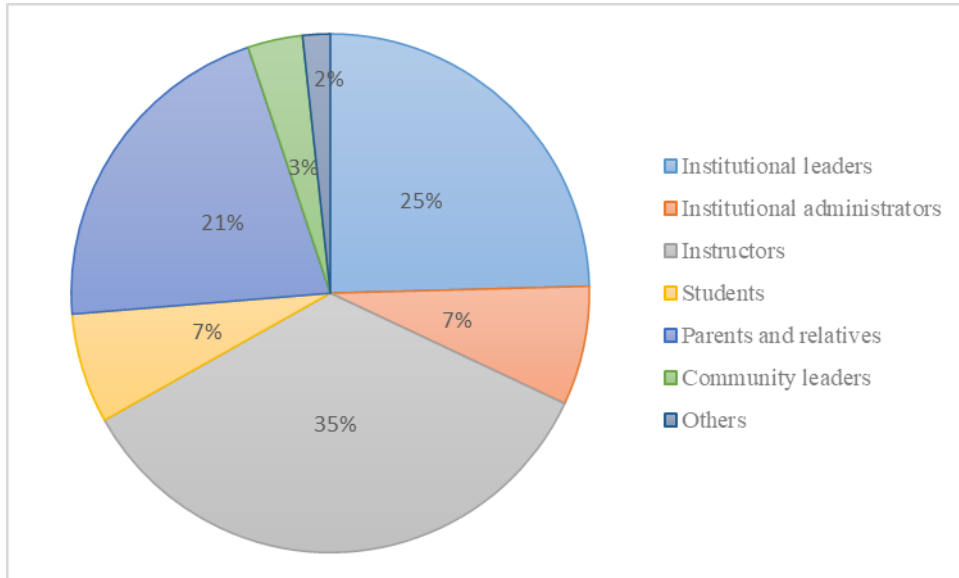


Figure 5.3: Percentages for students' role models

Source: Primary data (2019)

Results in Figure 5.3 revealed the majority of the role models as instructors at 35% (61), a quarter were institutional leaders at 25% (43), and almost a quarter were parents and relatives at 21% (37).

The results in Figure 5.3 were triangulation with excerpts from study interviews about who their role models were. Thus, a female student at KNVI004 cited:

My class teacher, Ms Tija is my role model. She is a calm peer guide. (Ako1, female student, urban, September 2019).

Another female student at KNVI004 said:

My principal is my role model. Despite his humble background, he was hopeful and aimed at what he wanted to become. He studied motor-vehicle technology at this institution and gradually worked hard as an instructor and in other organisations, upgraded until he was appointed the principal (Atipo, female student, urban, September 2019).

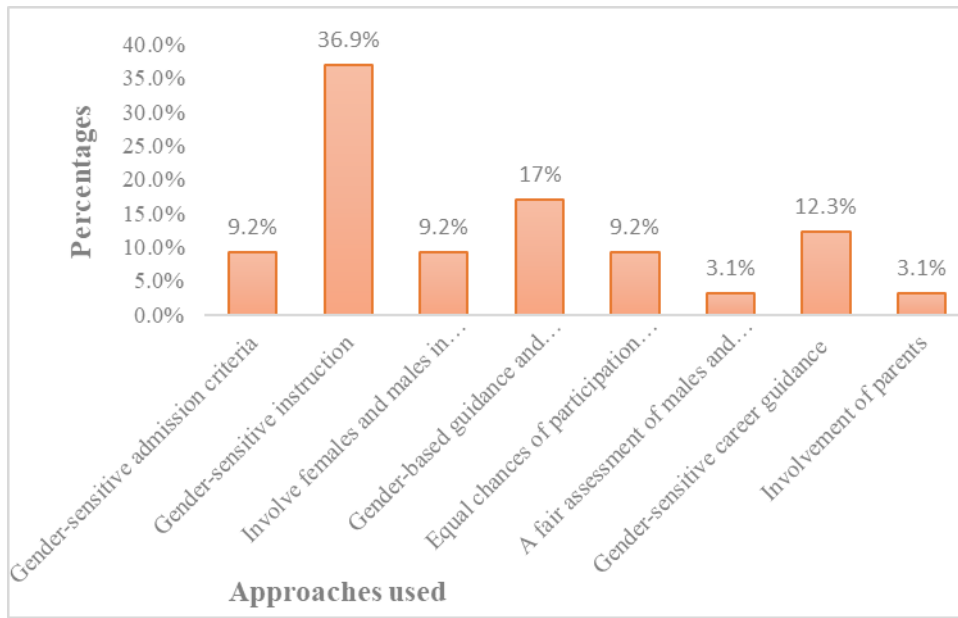
Equally, a male student at MMNS005 noted:

My dad is my role model. He has supported and encouraged us to never drop out of school, no matter how hard the courses become (Luket, male student, urban, September 2019).

The results in Figure 5.3 and the excerpts affirmed the presence of role models for TVET students within and outside the institutions. Moreover, NSGE policy suggested instructors as the most significant role models for students, especially females who encourage and motivate students to participate, refrain from dropping out and build their confidence (MoES, 2013). These results are synonymous with studies by Chege and Likoye, (2015) which reported the predominance of female teachers in primary schools, which boosted the confidence of girls and empowered them to take on leadership positions, previously tagged for the male students. Similarly, the participation and performance of girls in education were better than that of boys, who lacked adequate role models in schools. Ngugi and Muthima (2017) further encouraged teachers to be more supportive of female students in TVET, along with the use of role models in the field, as avenues for increasing participation of female students in TVET.

5.2.7 Approaches Employed to Promote Gender Equity in the LFE

Participants in this study were also asked to share strategies they used for promoting gender equity in LFE. Their views are shown in Figure 5.4.



Source: Primary data (2019)

Figure 5.4: Instructors' avenues used in LFE to promote gender equity

According to the results, the majority of instructors reported the use of gender-sensitive instruction (methods, resources, language and instruction) 36.9% (24), followed by gender-based guidance and counselling 17% (11), as well as gender-sensitive career guidance 12.3% (8), as to promote gender equity in the learning environment. Further, a gender analysis of the strategies employed by male and female instructors to promote gender equity. Table 5.7 depicts the results.

Table 5. 7: Strategies employed by instructors to promote gender equity in LFE

SN	Approaches used to promote gender equity	Gender of participants		Total
		Male	Female	
1.	Gender-sensitive admission criteria	3	0	3
2.	Gender-based guidance and counselling	8	3	11
3.	Involve females and males in leadership	5	1	6
4.	Bursaries for female students	1	2	3
5.	Use of gender-sensitive teaching materials	2	2	4
6.	Encourage girls to participate in learning activities	1	3	4
7.	An objective and fair assessment of females and males	2	0	2
8.	Learner-centred practical lessons	1	0	1

Source: Primary data (2019)

The results in Table 5.7 noted that the majority of female instructors employed gender-based guidance and counselling (3) in addition to encouraging girls to participate in learning activities (3). More male instructors also employed gender-based guidance and counselling strategy (8) and involved both genders in leadership (5). Nonetheless, study observations in the IPsLE revealed the use of negative and impolite language, male-dominated class discussions and biased attitudes of instructors towards female students. These observations, along with other challenges counteract efforts for promoting gender equity in the learning

environment. Therefore, there is a need to make these strategies more usable in the TVET learning environment.

Referring to assertions by FST (Thompson, 2003), they postulated the use of strategies like fair treatment of males and females by teachers, school administrators, and community leaders, which are dependent on the larger support system of the learning environment. Thus, the results affirmed the assertions of FST (Thompson, 2003) and are synonymous with studies by Alber (2017), Biji and Lawrence (2019), Fong, et al., (2020), Simmonds (2017) and Shahrin, et al., (2020) which recommended proper selection of learning materials, deliberate involvement of females in classroom discussions, proper lesson planning, good student-instructor interactions, and gender-sensitive instruction. The contribution of some of these strategies to gender equity among students has been discussed in the subsequent section.

5.2.8 Contribution of the LFE Attributes to Gender Equity in TVET

The research question for objective four was, how do TVET learner-friendly learning environments contribute to gender equity among VTI students in the Central Region, Uganda? Thus, the study sought the contribution of the LFE attributes including PhLE, IPsLE, instruction methods and resources, curricula, subject content and coursebooks, fair treatment of male and female students, role models and CCA to gender equity among students. Table 5.8 depicts participants' views.

Table 5.8: Views on how the LFE attributes contribute to gender equity

LFE attribute	Views	Frequency (n)		Percentage (%)		TT
		F	M	F	M	
Physical learning environment (PhLE) (N= 250)	Promotes concentration in class	33	54	37.9	62.1	87
	Attracts participants to enrol	19	30	38.8	61.2	49
	Exposes students to different skills	7	9	43.8	56.2	16
	Attracts competent instructors	4	8	33.3	66.7	12
	The institution's location promotes equal chances of access	4	3	57.1	42.9	7
	Promotes stability of students and staff	1	3	25.0	75.0	4
	Improves morale and healthy minds	2	2	50	50	4
Others	1	4			5	
Instruction methods and resources (N=185)	Simplify complex modules/concepts	24	30	44.4	55.6	17
	Multiple ideas raised through discussions	15	31	32.6	67.4	46
	Identify strengths and challenges for students	11	22	33.3	66.7	33
	Improve instructor-student interactions	6	7	46.2	53.8	13
	Make learning enjoyable	8	4	66.7	33.3	12
Curricula, subject content, text, and course books (N=185)	Text and course books promote research	34	67	33.7	66.3	101
	Develop knowledge and study skills	24	22	52.2	47.8	46
	Simplified content motivates females	1	3	25.0	75.0	4
Fair treatment of females and males (N=185)	Provides a safe environment for all	17	47	26.6	73.4	64
	Promotes gender equality	29	24	67.4	32.6	53
	Boosts one's self-esteem	10	15	40	60	25
Role models (N=185)	Encourage hard work	30	34	46.9	53.1	64
	Guide and counsel students	22	27	44.9	55.1	49
	Exemplary leadership and mentorship	16	26	38.1	61.9	42
	Pay school dues/tuition	6	9	42.9	57.1	14
Cocurricular activities (N=241)	Refresh students' minds	33	45	42.3	57.7	78
	Enhance physical fitness	19	30	38.8	61.2	49
	Promote collaboration, vigilance and motivation	19	24	44.2	55.8	43
	Promote students' talents	10	17	37.0	63.0	27
	Students acquire financial support	11	12	47.8	52.2	23

Source: Primary data (2019)

Findings in Table 5.8 noted that the majority of male and female participants cited promotion of concentration in class at 62% (54) and 38% (33) respectively, followed by attracting students to enrol at 61% (30) and 39% (19) respectively.

Additionally, interviews with study participants avowed the results. At WKT1003, a female instructor noted:

...if one enters a school or institution without good buildings, no adequate and good classrooms, and the compound is dirty, he/she will not be encouraged to come back. A good learning environment can encourage more students to enrol and stay in school (Ms Harito, female instructor, urban, August 2019).

Similarly, a male student at MCPR001 noted:

The learning environment is not so good because the classes are small, especially for catering students, and our department is close to old pit latrines, which are dirty and smelly. We don't concentrate well (Atiku, male student, rural, August 2019).

Related to instruction methods and resources, it was evident that the majority of male and female participants cited simplification of complex modules at 56% (30) and 44% (24) respectively, followed by raising multiple ideas for different students at 33% (15) and 67% (31) respectively.

Further, data about curricula and textbooks revealed that most male and female participants cited the promotion of research and independent study at 66% (67) and 34% (34) respectively, in addition to developing knowledge and study skills at 48% (22) and 52% (24) respectively. Triangulating the results of instruction methods and resources with data from participants' interviews, one female instructor at WMTS002 noted:

When the environment is not good, it cannot motivate students to participate and stay in school and it also demoralizes the staff. Like

here, we lack a shed for building practice and the students build under sunshine which weakens them and affects their concentration in lessons (Ms Jadika, female instructor, rural, August 2019).

Similarly, a male student at LBAC005 emphasized:

We cannot research because we do not have a library or textbooks to refer to whenever our teachers give us assignments. Some of us use the internet to research when we have data but not all of us have smartphones (Oumol, male student, rural, September 2019).

Results in Table 5.8 further showed that most male and female participants cited the provision of a safe environment for both genders at 73% (47) and 27% (17) respectively, in addition to the promotion of gender equality at 33% (24) and 67% (29) respectively. On the contrary, one ministry official cited the promotion of gender inequities:

One church leader said that gender equality has gone too far, with the boy child being more vulnerable now than the girls. People now think gender equity modalities are western feminist ideas (Ms Feni, lady official, MoGLSD, September 2019).

Linked to how role models contribute to equitable participation, male and female participants cited encouraging hard work at 53% (34) and 47% (30) and guiding and counselling students at 55% (27) and 45% (22) respectively. The study interviews with a role model student at LBAC005 also emphasized:

Our class teacher madam Liya is my role model. She motivates and encourages us not to lose morale, but rather work hard (Oumol, male student, rural, September 2019).

Regarding the contribution of CCA to gender equity, the male and female participants majorly showed refreshing of one's mind at 58% (45) and 42% (33), enhancing physical fitness at 39% (30) and 61% (19) in addition to promoting collaboration, vigilance, and motivation 56% (24) and 44% (19) respectively.

Further, participants' interviews about how CCA enhanced students' participation and retention in TVET revealed that:

For students who join uninterested in learning, CCAs encourage them to stay in school, when they find a game or co-curricular activity they like or enjoy doing (Ms Jadika, female instructor, rural, August 2019).

Similarly, a male student at MMNS006 noted:

When I participate in CCA, my mind is always constructive which enables me to solve problems. Engaging in football trains me to control my emotions, and learn how to associate and make friends (Luket, male student, urban, September 2019).

Moreso, a female CSO advocate revealed:

CCA help to identify and develop talents among the students. They also enable the students to develop the life skills like confidence, and self-control, among others (Ms Taweno, female CSO advocate, October 2019).

According to a male district leader,

Enrolment of students is usually higher during periods of games and sports. When a student is excellent in games like football or netball and others cheer him/her, that motivates him/her to keep in school. Secondly, such students will be highly demanded in many schools and may not even pay school fees due to their talents. Participation in CCA also teaches students skills of tolerance, appreciation, and teamwork (Mr Mumiso, male DL, urban, August 2019).

Relating the results of Table 5.8 and excerpts from interviews with suggestions of the FST in education (Thompson, 2003), different strategies of the larger support system in LFE were affirmed to enhance equitable participation of students in TVET including conducive environments and fair treatment of both genders, which these results confirmed due to their enormous roles to equitable participation. These findings are synonymous with studies by Shahrin, Normala,

Irdayanti, and Noor (2020) which noted that institutional facilities strongly promoted the enrolment of students in TVET. Bahagdhel, et al., (2017) further argued that schools with adequate resources, high-quality instructors and a strong academic environment increased students' aspirations and academic performance. Similarly, Ayonmike, et al., (2015) posited that inadequate TVET facilities and poor teaching methods hampered the quality of TVET programmes, while the provision of required TVET facilities promotes quality TVET participation. Simmonds (2017) also asserted that formal curricula contributed to gender equality in schools while Biji and Lawrence (2019) reported that the mostly theoretical curriculum did not meet students' perceptions about what TVET institutions and curricula must offer, which agitated them to drop out from institutions.

Relating to how role models promote gender equity, Dereje (2021) postulated that inadequate role models in STEM yielded low female instructors in Science Technology and Innovation (STI) in HEI. Further, Chege and Likoye (2015) reported that a female predominant workforce empowered girls through their education, demonstrated by their confidence and competitive capabilities to take up school and classroom leadership responsibilities, previously labelled for male students. Conversely, boys who lacked male role models to guide and counsel them the way girls did, experienced frustration and lethargy in schooling when girls 'out-performed' them, which contributed to their drop out of school. Linked to how CCA promoted life skills and gender equity, the results of this study

corroborated with studies by Ngutiku (2016) and St-Amand, et al., (2017) which showed that participation of students in CCA motivated them to enrol in school, reduced dropouts, counteracted school disengagement and unhealthy behaviour, and improved participants' physical fitness. These studies further affirmed that CCA nurture social skills like teamwork, friendship, resilience, tenacity, confidence and perseverance, among others which are paramount in enrolment and retention in school, especially for female students.

5.3 Policy Interventions to Boost Gender Equity among VTI students

Objective five intended to propose policy interventions that can boost gender equity among VTI students in the Central Region, Uganda. Thus, the strategies for boosting gender equity were thematized into advocacy interventions, financing interventions, and LFE interventions.

5.3.1 Advocacy Interventions for Promoting Gender Equity

The study participants further suggested advocacy strategies for boosting gender equity among VTI students as shown in Table 5.8.

Table 5.9: Advocacy interventions for boosting gender equity

Advocacy Interventions	Views	Frequency (n)	Percentage (%)
(N= 250)	Mass sensitization about TVET	66	45.2
	Advertising TVET	12	8.2
	Gender equity in admission	12	8.2
	TVET Exhibitions in schools	5	3.4
	Career Guidance	29	19.9
	Designing Compulsory gender modules and programs	5	3.5
	Enforcement of gender policies	15	10.3
	Advocacy based on institutional location	2	1.4
	Total	146	100

Source: Primary data (2019)

According to Table 5.8, the majority of the participants suggested mass sensitization 45.2 % (66), career guidance 20% (29) and enforcement of gender policies 10% (15) as advocacy interventions for boosting gender equity among VTI.

Similarly, the excerpts from study interviews affirmed these suggestions.

According to a female CSO advocate,

...there is a need to use MDD to spread messages about gender and the importance of girls staying in school, the government needs to invest in policies, programs and projects that reduce unpaid domestic work such as bringing water points closer, to encourage females to go to school (Ms Taweno, female CSO, urban, October 2019).

Similarly, a female role model instructor at WKTII003 affirmed:

TVET policies contribute to students' enrolment because the BCP first-year class has more girls admitted than the year-two class due

to sensitization. When these policies are developed and people talk about them, students are informed... Even when parents find girls enrolled in TVET courses, they are motivated to bring their daughters (Ms Harito, female instructor, urban, August 2019).

Further, a male student at MMNS006 cited:

We face the challenge of the inability to upgrade to a bachelor in comprehensive nursing in this school. Available alternatives are linked to midwifery. Nonetheless, one still registers as a comprehensive nurse and not a midwife. This needs to be rectified to enhance students' motivation (Ogumu, male student, urban, September 2019).

These findings affirmed propositions of the FST (Thompson, 2003) for several strategies geared to promoting gender equity in education like the support of parents, instructors and school administrators for activities intended for enhancing gender equity, which depends on the larger support system. These findings corroborated studies by Kigwilu, et al., (2016) and Ngugi & Muthima (2017) which commended mass sensitization, career guidance and counselling, and implementation of gender policies as strategies for boosting TVET participation. Nonetheless, their studies were not conducted in VTI and the current generated primary data for strategies to enhance gender equity among VTI students.

5.3.2 Perceptions of Advocacy Strategies that Enhance Gender Equity

The study further sought participants' perceptions about how different advocacy strategies promoted gender equity among VTI students using a five-point Likert scale. Numerical values of 5, 4, 3, 2, and 1 for strongly agree (SA), Agree (A), undecided (UD), disagree (DA), and strongly disagree (SD) were used to show their views. Responses with mean values of 3.5 and above indicated participants'

agreement with the strategy while strategies with a mean below 3.5 indicated disagreement. The means of their perceptions are thus presented in Table 5.10.

Table 5.10: Mean responses for advocacy strategies that promote gender equity

S/N	Advocacy strategy (N=250)	Mean	SD	Remarks
1	Use of Gender policies	4.24	.94	Agree
2	Increasing sensitization for gender equity	4.66	.62	Agree
3	The same potential for TVET participation for girls and boys	4.25	1.15	Agree
4	Increasing sensitization for TVET	4.64	.70	Agree
5	Research in TVET	3.89	.94	Agree
6	Institutional and community leaders	4.36	.83	Agree
8	Implementation and evaluation of policies	4.17	.80	Agree
9	Boosting parents' attitude towards TVET	3.98	1.16	Agree
10	Government and political will	4.14	1.07	Agree
11	Improve students' attitude towards TVET	3.98	1.14	Agree
12	Involvement of male instructors and role models in TVET	3.41	1.36	Disagree

SD -Standard deviation

N- Number of valid cases

Source: Primary data (2019)

The findings in Table 5.10 showed that respondents rated eleven items (1-11) as advocacy strategies that boost gender equity among VTI students, whereas one item (12) rated least showing disagreement with that strategy. The SD indices also ranged within acceptable ranges from 0.6 to 1.36, implying that participants' responses were clustered close to their means.

Similarly, interviews with key participants cited advocacy strategies that enhanced gender equity. According to the female CSO official, she argued:

... affirmative action has seen many disadvantaged women and girls access education and occupy leadership positions. Alliances with social-cultural leaders to support and promote the rights of women and girls are key. We have also brought men on board to become champions of girls' education and gender equality. We influenced the MoGLSD to come up with the male engagement strategy to ensure that the men in top decision-making positions are gender-sensitive (Ms Yadak, female CSO advocate, urban, October 2019).

Moreover, a male student at MCPR001 emphasized that:

..If we knew of policies that guide students to enrol in TVET, it would guide us to know the importance of what we are studying and talk to other students who admire our courses (Atiku, male student, rural, August 2019).

Likewise, a male district leader suggested:

Instructors need to be majorly trained on the gender policies and not the district leaders, because they are the main implementers (Mr Mumiso, male DL, urban, August 2019).

These findings and excerpts seemed to propose that TVET advocacy in form of affirmative policies, community and cultural leader alliances, male-engagement strategy, TVET policies, and sensitization about TVET and gender policies enhance gender equity. These findings thus affirmed some propositions of the FST like girls having the same potential as boys to perform well in science and maths-based subjects, support of parents and male teachers to feminist teachers' initiatives, as advocacy avenues for addressing gender inequities (Thompson, 2003). These findings however disagreed with the suggestion of utilizing males in addressing gender inequities in education. These findings are in agreement with Ayonmike, et al., (2015) who noted that adequate planning and implementation of TVET programs by the government was a strategy for attaining quality TVET participation. Nevertheless, respondents disagreed with the use of male instructors

and role models in promoting gender equity, despite recommendations to MoGLSD by CSO advocates for the enactment of a male-engagement strategy. These findings thus disagreed with the policy recommendations of NSGE which suggested male involvement in supporting girls' education including male role models at community levels, father-protect-daughter campaigns, and involving boys in gender-responsive activities in education institutions (MoES-Uganda, 2013). Therefore, there is a need for popularizing these strategies if their impact has to be attained. Further, Ngugi and Muthima (2017) endorsed that teacher education and policies on recruitment should not only ensure a fair representation of both male and female teachers in all subjects but also at all levels of education.

5.3.3 Financing Interventions for Promoting Gender Equity

Likewise, participants posited financing interventions that can boost gender equity among students. Their views are depicted in Table 5.11.

Table 5.11: Financing interventions for boosting gender equity

Views for financing interventions (N= 250)	Frequency	Percentage (%)
Bursaries for learners for low SEC	56	54.4
Reduction of tuition fees	31	30.1
Facilitating students' industrial training	7	6.8
Scholarships for outstanding students	5	4.9
Non- refundable loans to learners	2	1.9
Appropriate pay for TVET products	1	0.97
Partnerships to support TVET training	1	0.97
Total	103	100

Source: Primary data (2019)

According to the results in Table 5.11, participants majorly suggested bursaries for learners from low SEC at 54% (56), reduction of tuition fees at 30% (31) and facilitating students' industrial training at 6.8% (7), as financing interventions for enhancing gender equity among VTI students.

The results in Table 5.11 were further triangulated with participants' perceptions about financing strategies that can boost gender equity. Using a five-point Likert scale with numerical values of 5, 4, 3, 2 and 1 for strongly agree, agree, undecided, disagree and strongly disagree respectively, the means and standard deviations of their views are shown in Table 5.12.

Table 5.12: Mean responses for financial strategies that enhance gender equity

S/N	Financing strategy (N=250)	Mean	SD	Remarks
1.	Privatisation of TVET participation	3.51	1.34	Agree
2.	Increasing TVET Budgets	3.76	1.32	Agree
3.	Timely and adequate capital grants	3.98	1.19	Agree
4.	Timely and adequate staff remunerations	3.88	1.29	Agree
5.	Increasing school fees	1.84	1.19	Disagree
6.	Bursaries and scholarships in TVET	4.30	1.11	Agree
7.	Public Private Partnerships (PPP)	4.14	1.07	Agree
8.	Affirmative strategies	3.98	.81	Agree
9.	Boosting parents' income	4.05	1.15	Agree

SD- standard deviation

Source: Primary data (2019)

The results in Table 5.12 showed that participants rated eight items with means greater than 3.5 (1-4, 6-9) as financing strategies that boost gender equity among VTI students, whereas they disagreed with one item (5) rating less than 3.5 (1.8). The standard deviation indices for the nine test items also ranged from 0.8 to 1.34, suggestive of participants' responses as clustered close to their means.

Equally, interviews with key informants cited financing strategies that enhance gender equity in TVET programs. One male district leader (DL) said:

... The government needs to increase the capitation for TVET. Just like how the government promotes science education, it has to find ways to promote these vocational courses too. For example, the student loan scheme that takes up science students can also be introduced for vocational courses... (Mr Mamiso, male DL, urban, August 2019).

Likewise, a female CSO advocate revealed that:

...Poverty and lack of political will influence the allocation of resources. For example, while you are thinking that education should be given enough resources, that is not the case. Priorities differ and more money is being given to security while education is not given that priority. If the citizens could also get involved in the budget processes, sections like education would be given adequate resources... (Ms Yadak, female CSO advocate, urban, October 2019).

Additionally, a male district leader postulated:

The institutions with land could start farming to reduce food costs. Students like those for WWT can make products and sell while those for BCP can contract sites to generate some money. The government needs to reinstate the policy of paying students in technical schools because they manufacture many items for their institutes (Mr Mumiso, male DL, urban, August 2019).

These results in Tables 5.11, 5.12 and excerpts implied that TVET funding in the form of increased budget allocation, prioritization of TVET in budgeting,

increased staff remunerations, affirmative strategies, PPP in addition to bursaries and scholarships for females and learners from low SEC would enhance gender equity. However, the allocation of 870 million USD for the BTVET strategic plan over nine years, with 40% budget earmarked for raising access and quality of TVET, while 433 billion UGX was suggested for capital grants and bursaries of students in formal TVET (MoES, 2011, p. 8), these findings proposed the need for an increment in the budget allocation. The results affirmed one proposition of the FST about increment improvements as a long-term strategy for a more equitable society (Thompson, 2003). Thus, The results are synonymous with studies by Ngugi & Muthima (2017) postulated that the allocation of appropriate funds for equipment and resources would stimulate students' interest in STEM mostly among female students thus promoting gender equity in TVET. Ngugi and Muthima (2017) opined that TVET access was riddled by low government funding, which had a replica effect on teacher training, poorly equipped institutions and inadequately trained graduates. Moreover, Kintu, Kitainge, & Farej (2019) commended the establishment of income-generating activities at institutions, institution-industrial linkages, and issuing tools and materials for self-employment in TVET as transition strategies to WoW in Uganda. Related strategies have been suggested in this study for boosting gender equity among VTI students. On the contrary, findings by Matsolo, et al., (2018) revealed a weak link between bursaries and fee weavers and gender equity in terms of enrolment rates. However, their study was not conducted in mid-level VTI which might explain the noted divergence due to set-up differences, among other reasons.

5.3.4 LFE Interventions for Promoting Gender Equity

This study also suggested LFE interventions that can boost gender equity among VTI students as shown in Table 5.13.

Table 5.13: Percentages for LFE interventions for boosting gender equity

Learner-friendly environment interventions (N= 250)	Frequency	Percentage (%)
Increasing training materials	57	22.9
Guidance and counselling for students	55	22.1
Improving infrastructure facilities	41	16.5
Increasing and retooling TVET staff	21	8.4
Good feeding	15	6.0
Encouraging female instructors' participation	4	1.6
More practical lessons than theories	8	3.2
Conducive language of instruction	7	2.8
Fair rules and regulations	4	1.6
Introducing gender-sensitive programs	1	0.4
Good teacher-student interactions	3	1.2
Rewards for excellent students	14	5.6
Improving 'WASH' facilities and sanitary towels	4	1.6
Provision of tools to students on completion	3	1.2
Improving the education structure of TVET	8	3.2
Cubing bribery among instructors	2	0.8
Total	248	100

Source: Primary data (2019)

Regarding interventions in LFE, participants strongly postulated increasing training materials by 23% (57), guidance and counselling of students at 22% (55), and improving infrastructure facilities at 17% (41) as strategies for boosting gender equity among students.

The findings in Table 5.13 were triangulated with participants' perceptions about LFE strategies that can boost gender equity using a five-point Likert scale with numerical values of 5, 4, 3, 2, and 1 for strongly agree, agree, undecided, disagree, and strongly disagree respectively. The means and standard deviations of their views are shown in Table 5.14.

Table 5.14: Means for LFE strategies that boost gender equity among VTI students

S/N	LFE strategy (N=250)	Mean	SD	Remarks
1.	Strategic location and adequate facilities	4.28	1.02	Agree
2.	Conducive classroom and hostel facilities	4.32	.93	Agree
3.	Improving infrastructure facilities	4.08	1.12	Agree
4.	Fair treatment of girls and boys	4.47	.93	Agree
5.	Conducive Sanitation and medical facilities	4.41	.73	Agree
6.	Provision of sanitary towels to girls	3.89	1.26	Agree
7.	Use of Learner-friendly pedagogical approaches	4.32	.85	Agree
8.	Presence of female instructors	4.32	.95	Agree
9.	Fair distribution of instructor's time and energy	3.95	1.02	Agree
10.	Gender-sensitive curricula and textbooks	3.72	1.24	Agree
11.	Co-curricular activities enhance female students' life skills	4.27	.92	Agree
12.	Presence of role models in TVET	4.36	.90	Agree
13.	Low students population	3.01	1.36	Disagree
14.	High instructor-student ratios	3.54	1.21	Agree
15.	Well-organised and tidy classrooms	3.76	1.29	Agree
16.	Use of teacher-centred approaches	3.00	1.37	Disagree
17.	Career guidance and counselling	4.50	.78	Agree
18.	Proper language use and rewards	4.15	1.10	Agree
19.	Minimising school-related violence	4.01	1.29	Agree
20.	Fair rewards for boys and girls	4.13	1.26	Agree

SD- standard deviation

N- number of valid cases

Source: Primary data (2019)

Except for strategies 13 and 16, participants agreed with all other strategies of the LFE for boosting gender equity among VTI students in Uganda. The strategy of career guidance and counselling scored the highest mean (4.5) while a high instructor-student ratio scored the least mean (3.54) for strategies that boost

gender equity among students. Importantly, the use of teacher-centred approaches and increasing student population were not supported for promoting gender equity, yet they are evident in the TVET learning environment. Similarly, the SD indices of their perceptions ranged between 0.78 and 1.37 implying that their views were clustered around their means.

Additionally, data from interview extracts for study informants affirmed the results. Firstly, a female official from MoGLSD suggested:

The government needs to invest more in TVET. The cost of inputs is very high, the laboratories and workshops are expensive, and the government needs to try apprenticeship training just like it is being done in developed countries for learners to acquire hands-on training. Otherwise, the industries are still very few (Ms Feni, lady official, MoGLSD, September 2019).

Similarly, one female CSO advocate asserted:

Instructors ought to be gender-sensitive in their tone and delivery of lessons, and encourage girls to engage in sports to develop social skills. There is also a need to provide accommodation for teachers, more female teachers in TVET, and the use of affirmative action for girls. Gender studies need to also be incorporated into training for TVET teachers as a core (Ms Taweno, female CSO advocate, urban, October 2019).

Equally, a male official from MoE suggested:

Government institutions enrol controlled numbers of students because the VTI are very few. We, therefore, encourage private VTI to take up some of the students... (Mr Mpasu, male MoES official, October 2019)

Accordingly, these findings and excerpts reinforced assertions by FST (Thompson, 2003) for strategies that promote gender equity in education, including fair treatment of males and females by teachers, school administrators, and community leaders, which were dependent on the larger support system of the

LFE. Therefore, the results and excerpts suggested that interventions related to improving training facilities and resources, incorporating gender studies in teacher-training courses, encouraging females to participate in CCA, and using gender-sensitive teaching strategies would boost gender equity among TVET students in Uganda. These results are synonymous with studies by Ngugi & Muthima (2017) which postulated that allocation of appropriate funds for equipment and resources, use of gender-sensitive resources, instructional methods and strategies would stimulate students' interest in STEM mostly among female students, thus boosting gender equity among students. Equally, Alber (2017), Biji and Lawrence (2019), Fong, et al., (2020), Simmonds (2017) and Shahrin, et al., (2020) explicitly cited multiple strategies in the LFE for boosting gender equity among VTI students. These included a proper selection of learning materials, deliberate involvement of females in classroom discussions, proper lesson planning, teachers' self-evaluation of lessons, good student-instructor interactions, gender-sensitive resources, and gender-sensitive instruction, among others. Therefore, if gender equity has to be achieved among VTI students, all stakeholders ought to take deliberate efforts to implement these strategies.

Conclusively, chapter five presented findings, interpretations and discussions about the status of the PhLE and IPsLE, participation in CCA, human resources and role models in TVET and their contribution to gender equity among VTI students. Equally, findings and discussions for advocacy, financing and LFE interventions for boosting gender equity were ascertained.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter presents the study findings for the contribution of gender policies in TVET to gender equity among Vocational Training Institutes (VTI) students in the Central Region of Uganda. Therefore, the summary of key findings, conclusions made from the study, recommendations and suggestions for further research are shown therein.

6.2 Summary of Main Findings

This study generated data for five study objectives including:

- i. Establishing the gender trends in TVET enrolment and retention of VTI students between 2013 and 2017 in the Central Region, Uganda.
- ii. Examining the contribution of TVET policy advocacy strategies to gender equity among VTI students in Central Region, Uganda.
- iii. Exploring the contribution of financial resources to gender equity among VTI students in Central Region, Uganda
- iv. Establishing the contribution of learner-friendly learning environments to gender equity among VTI students in Central Region, Uganda.
- v. Proposing policy interventions that can boost gender equity in TVET programs among VTI students in the Central Region, Uganda.

Using the convergent parallel mixed methods research design, the study analyses generated the following findings.

6.2.1 Gender-Based Trends in Enrolment and Retention of Students between 2013 and 2017

The study revealed that the mean enrolment of students in urban VTI was about five times (364) compared to those in rural settings (83). The mean for male students was thrice (233) in comparison with that for female students (73). According to trades offered, the enrolment rate of female students in traditional trades (Nursing, TGD, AHS) was 70% (100) compared to 30% (49) for male students. However, the enrolment rate of females in non-traditional female trades (WWT, BCP, electricity) was nearly a tenth 8% (28) compared to 92% (271) of male students. The one-way ANOVA that assessed whether there was a significant difference in the enrolment of students in urban and rural settings was significant, $F(1,7) = 73.04, p = 0.05$. Hence, there was a significant difference between the enrolment rate of VTI students based on the institutional setting of the institution.

The results further showed that between 2013 and 2017, the enrolment rate of female students was 19.5% (182) and 19.2% (213) in the 2013-2014 and 2015-2016 cohorts respectively. The enrolment rate of male students was however 80.5% (752) and 80.8% (895) in the 2013-2014 and 2015-2016 cohorts respectively. More so, the enrolment rate of female students was a third 31% (28) of the total students' enrolment compared to two-thirds 69% (41) for male students in both cohorts in the rural setting. Contrary, urban TVET institutes

exhibited male student enrolment rates of 75% (209) compared to only 25% (41) for female students in both cohorts. Nonetheless, the enrolment rate of male and female students did not significantly increase at both the inception (2013-2014 cohort) and progressive (2015-2016 cohort) stages of gender policies, with a -0.3% (31) change from 19.5% to 19.2% and 0.3% (143) from 80.5% to 80.8% respectively. The study also showed a slight increase in female students' transition rates of 5% (9) from one cohort to another compared to the major increase of 56% (249) for male students from one cohort (2013-2014) to another (2015-2016). The study revealed that the mean transition rate of male students 74.5% (570) tripled that of female students 25.5% (177) in the two cohorts. The difference between the percentage proportions of female and male students retained in the two cohorts was, however -5% (13) from 28% to 23% and 5% (249) from 72% to 77% respectively, showing a less significant increase in transition trends for female and male students. The study also showed that 27.7% (18) perceived more males than females participating in TVET, 13.8% (9) encouraged female students to participate in TVET while 6.2% (4) reported a negative attitude of females towards TVET. From the interviews, it was evident that inadequacies in gender policies like NSGE disregarding structural issues like unpaid domestic work and gender stereotypes in TVET influence the participation of female and male students in TVET.

6.2.2 Contribution of TVET Advocacy Strategies to Gender Equity among Students

The findings indicated that more than half of the participants 55.6% (139) were familiar with BTVET strategic plan while nearly half 44.4% (111) were familiar

with NSGE policy. Findings also showed that participants' knowledge of gender policies varied according to their categories. All IL (100%) were familiar with the BTVET strategic plan while nearly half 56% (5) were aware of the NSGE. Less than half of the students were familiar with BTVET strategic plan and NSGE while more instructors were familiar with both the BTVET strategic plan and NSGE. Findings from the interviews suggested the average popularity of TVET policies and a lag in information flow about TVET policies as corrective and affirmative strategies. A chi-square test ascertained the extent to which participants' institutional settings influenced their knowledge of gender policies. The relationship between participants' knowledge of gender policies and their institutional settings was insignificant $X^2(1, n=250) = .33$, and 3.55 , $p=.057$ and $.060$ for BTVET and NSGE policies respectively. Thus participants' institutional settings did not influence their knowledge of gender policies.

The findings further indicated that participants agreed to often use the different advocacy strategies based on the mean ranges between 2.67 and 3.3. Career guidance (3.3) and social media (2.98) were the most used advocacy avenues while fliers and magazines (2.28) were the least used. The interview excerpts equally affirmed the use of sensitization, awareness creation and multi-sector collaborations for TVET and gender equity. Data about participants' motivations to participate in TVET showed future career goals 49.4% (79) and skills development 39.4% (63) as major motivations for their participation in TVET. The gender-based analysis also affirmed these motivations. Extracts from interviews equally confirmed students' future career goals enhanced by career

guidance, interest, and role model aspects as motivations for TVET participation. The chi-square tests determined the relationship between the use of TVET advocacy strategies and students' enrolment. The chi-square test for independence (with Fisher's Exact Test) indicated no significant association between the use of advocacy strategies and female students' enrolment, X^2 (n=9) =18.4, 18.4, 24.6, 16.9, 16.9, 6.7, p=.58, .58, 1.0, .33,.36, 1.0, for the respective advocacy strategies. Similarly, the chi-square test for independence (with Fisher's Exact Test) indicated no statistically significant association between the use of advocacy strategies and male students' enrolment, with p- values greater than the alpha value of .05. Thus, there was no significant contribution of TVET advocacy strategies to gender equity of female and male students in the Central Region, Uganda. However, Cramer's V coefficients for the different advocacy strategies ranged between 0.2-0.4, indicating a medium measure of association between advocacy strategies and students' enrolment.

6.2.3 Contribution of Financing Avenues to Gender Equity of Students

The study noted the majority of the students 70.8% (2037) were privately sponsored while a few 27.1% (780) were government-sponsored. The mean of male government-sponsored students (60) doubled that of females (27). Further, only a quarter of the female students (46) were privately sponsored compared to three-quarters of male students (180). The excerpts for interview data affirmed the students' TVET access through private sponsorship while others studied with both government sponsorship and scholarships. The findings also revealed that all six VTI (100%) were receiving capital grants from the government. However, the

majority of the institutes 57% (4) received the grants after two to four months while others received the grants after four months. Participants also reported low salaries for staff at 88.9% (8) as the major hiccup in TVET budgeting while others noted low salaries for staff at 48% (29). From the interviews, it was clear that both TVET budgets and staff salaries were insufficient which influenced students' participation in TVET. The findings on the impact of staff salaries on gender equity among students majorly cited the demotivation of staff to work hard at 80% (39) while a tenth 10% (5) noted staff moonlighting reduction. The interview findings vividly revealed that funding for TVET promoted retention and regular school attendance of students. Nonetheless, funding was also argued to promote a lack of care among students on scholarships and bursaries.

Further, the findings showed that most of the instructors 64% (36) did not receive adequate and timely teaching resources while a few 36% (20) agreed with the receipt of timely and adequate resources. Likewise, findings majorly cited improvisation by HoDs at 46.7% (14), sourcing materials from students at 23.3% (7) and conducting late practical lessons at 10.0% (3), as avenues to counteract delayed supply of materials. Data from the interviews equally affirmed that teaching resources were not received in time. The findings further showed that timely and adequate resources promoted equity in interacting with resources at 50% (9), enhanced the teaching and learning process at 22% (5), and limited improvisation at 17% (3). Excerpts from the interviews also showed that timely and adequate teaching resources motivate instructors to conduct practical teaching of students in TVET.

The findings also indicated that most of the participants' parents were of middle SEC 52.4 % (97), some were of low SEC 31.4% (58) while a few belonged to high SEC 16.2% (30). Related to gender, male participants 71% (41) had parents of low SEC while the majority of female participants 60% (18) had parents with high SEC. Equally, more males at 74% (49) than females at 26% (17) were working after school while more females received financial support through other avenues like boyfriends 53% (9). The results also noted that the majority of students 47.8% (86) depended on their parents or guardians to meet their scholastic and personal needs while others worked after school 36.7% (66). According to interview extracts, it was evident that students depended on their parents or guardians to meet their financial needs for TVET while others participated in part-time jobs. Therefore male students from low SEC had higher chances of enrolling and completing TVET due to finances from part-time jobs while females were prone to drop out due to engagement in premarital relationships which promoted teenage pregnancies.

6.2.4 Contribution of LFE to Gender Equity among Students

According to the observation results, it was clear that the majority of the physical learning environment (PhLE) attributes were available and functional. Nonetheless, most urban institutes faced interruptions from heavy traffic and noise, unhygienic sanitation facilities with inadequate hand-washing facilities at critical points, small and unhygienic dining facilities, small sports grounds, as well as insufficient housing facilities for staff. The study also found that rural VTIs were distant from heavy traffic and noise, with spacious sports grounds

which presented a quiet and conducive environment for learning. However, their PhLE presented multiple hindrances to equitable participation including limited safety, small and dusty classrooms, unhygienic facilities, limited library facilities, non-functional medical facilities and distant staff houses. These results were confirmed by data about challenges met by students in the learning environment. They indicated equipment and tools challenges at 27% (50), funding challenges at 23% (42), and poor meals at 10.8% (20) as challenges in the PhLE. Findings of inside-class and psycho-social learning environment (IPsLE) revealed that most attributes of IPsLE were moderately available or functional. The study observations further noted that furniture was mostly inadequate and uncomfortable, no class rules were displayed and used, traditional methods of instruction were mostly utilised, chalkboard and chalk were the major tools of instruction, and the teaching materials were insufficient for the available students' numbers. Additionally, the use of impolite and abusive language was evident, minimal participation of students in lessons with more focus on male than female students, no evidence of guidance and counselling during instruction as well as moderate instructor-to- students ratios. It was also argued that female and male students were fairly treated in VTI at 74% (137). Results also confirmed the presence of school-related violence including verbal abuse at 34% (68), at bullying 24% (48), and sexual abuse at 18% (36). It was noted that guidance and counselling 61% (26) and adherence to rules and regulations 16% (7) were used to address school-related violence. The extracts from the interviews equally affirmed the status of IPsLE noting inadequate funds for TVET materials, the use

of teacher-centred approaches in instruction, the presence of bullying, ill-equipped institutions and complex modules in curricula that demotivated female students. The findings also indicated that most participants engaged in CCA at 84% (203) while a few did not at 15% (38). It was also clear that more males 60% (122) than females 40% (81) were participating in CCA. The participants engaged in multiple CCA including ball games at 70% (137), athletics at 12% (24) and music, dance and drama (MDD) at 8% (14). More female students participated in club activities at 60% (6) while more male students engaged in ball games at 63% (86). The study observations of the PhLE and interviews with students also confirmed the existence of different CCA with more field events, MDD and ball games in rural settings while urban VTI participated in club activities like debating, environment, Rotaract, scouts and guides, scripture union, entrepreneurship, and Red Cross

Further, results about the human resource categories in VTI according to gender revealed male domination as instructors (24) and HoDs (6) while females dominated as secretaries and counsellors (2 per institute). The Pearson Product Moment Correlation Coefficient (r) showed the relationship between students' enrolment and staff population in VTI. The results showed a significant positive linear relationship between students' enrolment and staff population in Central Region, Uganda $r(9) = .57, p = .001$. Therefore, an increase in staff population would increase students' enrolment by 57.1%. Equally, findings about role models in the LFE noted that most role models were instructors at 35% (61), institutional leaders at 25% (43) and relatives at 21% (37). Data from interviews

with role model students equally confirmed instructors, IL and parents as students' role models. Data about approaches employed in promoting gender equity of students reported the use of gender-sensitive instruction at 36.9% (24), the use of gender-based guidance and counselling at 17% (11), in addition to gender-sensitive career guidance at 12.3% (8). The majority of female (3) and male (8) instructors employed gender-based guidance and counselling (3), encouraged girls to participate in learning activities (3) and involved both genders in leadership (5).

Results further indicated that different attributes of the LFE contributed to gender equity differently. The PhLE promoted concentration in class at 47.3% (87), attracted students to enrol at 27% (49), and exposed students to different skills at 8.7% (16). Interviews with study participants suggested that a conducive learning environment enhanced enrolment and retention in TVET. It was also noted that instruction methods and resources simplified complex modules at 33% (54), raised multiple ideas for different students at 28% (46), and promoted child study at 20% (33). Similarly, the study results showed that curricula and course/textbooks promoted research and independent study at 67% (101), developed knowledge and study skills at 30.5% (46), and motivated female students at 2.6% (4). The interview extracts affirmed that unfavourable instructional resources demotivate students to enrol and transit in school, demoralize staff, affect students' concentration in class, and hamper research. Fair treatment of boys and girls was postulated to provide a safe environment for both genders at 38% (64), promoted gender equality at 37% (53), and boost students'

self-esteem at 18% (25). However, data from interviews cited mixed perceptions about gender equality, with male students being more vulnerable than females. It was also evident that role models encouraged hard work at 38% (64), guided and counselled students at 29% (49), and enhanced exemplary leadership and mentorship at 25% (42). Interview extracts also affirmed that role models motivated students to work hard. Additionally, results indicated that CCA participation refreshes one's mind at 36% (78), enhances physical fitness at 22% (49), and promotes collaboration, vigilance, and motivation at 20% (43). Excerpts from interviews also revealed that CCAs boosted enrolment and retention in TVET, identified and nurtured students' talents, and developed life skills like resilience, and confidence, among others. Therefore, the LFE both promoted and hindered gender equity depending on its status.

6.2.5 Policy Interventions for Boosting Gender Equity among VTI Students

The results for advocacy interventions majorly suggested mass sensitization at 45% (66), career guidance at 20% (29), and enforcement of gender policies at 10% (15) promoting gender equity among students. Excerpts from interviews equally suggested advocacy using MDD, increased financing for TVET advocacy, and training on gender policies for major policy implementers. Further, participants shared their views on advocacy strategies using a five-point Likert scale. Thus, participants agreed with 11 strategies for promoting gender equity, with increasing sensitization for gender equity and TVET scoring the highest mean at 4.66 and 4.64. From the interviews, excerpts suggested TVET advocacy in form of affirmative action, alliances with community and cultural leaders,

male-engagement strategy, TVET policies, and sensitization about TVET and gender policies as strategies for boosting gender equity.

Equally, results about financing interventions for boosting gender equity majorly suggested bursaries for learners from low SEC at 54% (56), reducing tuition fees at 30% (31), and facilitating students' industrial training at 6.8% (7). Similarly, interview extracts postulated increased budget allocation and prioritization of TVET in budgeting, increased staff remunerations, affirmative strategies, PPP and bursaries for females and students from low SEC, for boosting gender equity among VTI students.

The results of interventions in LFE that boost gender equity posited increasing training materials at 23% (57), guidance and counselling of students at 22% (55), and improving infrastructure facilities at 17% (41). Further, participants' perceptions about LFE strategies that promote gender equity using a five-point Likert scale indicated that they agreed with eighteen (18) strategies for promoting gender equity among students, with career guidance and counselling and fair treatment of girls and boys scoring the highest mean at 4.5 and 4.47 respectively. The extracts from study interviews also postulated improving training facilities and resources, incorporating gender studies in teacher-training courses, encouraging females to participate in CCA, and using gender-sensitive teaching strategies.

6.3 Conclusions

Based on the findings of this study, the following conclusions were made related to policy and practices in TVET.

6.3.1 Conclusions Related to Policy

- i) Familiarity with gender policies (BTVET strategic plan and NSGE policies) was moderate and varied according to the study participants' categories. However, the participants' institutional settings did not influence their knowledge of gender policies.
- ii) Mass sensitization, career guidance, enforcement and training about gender policies for major policy implementers, were the suggested advocacy interventions for promoting gender equity in TVET.
- iii) The financing interventions were majorly bursaries for females and learners from low SEC, reducing tuition fees, facilitating students' industrial training, increasing training materials, and reinstating pay for students who produce items for institutions.
- iv) Likewise, interventions for improving the learning environment were: improving infrastructure, training facilities and resources, incorporation of gender studies in teacher-training courses, encouraging females to participate in CCA, and using gender-sensitive teaching strategies.

6.3.2 Conclusions Related to Practices

- i) More female than male students participated in traditional TVET trades while most male students participated in non-traditional trades.

- ii) Career guidance and social media were the most popular TVET advocacy strategies while fliers and magazines were the least used. Participants' career goals, skills development need, and gender-related reasons influenced their involvement in TVET.
- iii) Likewise, most students were privately sponsored than government-sponsored. Gender inequities in private and government sponsorships were noted with more males than females noted in both funding avenues.
- iv) Despite receipt of capitation grants, the amount was inadequate and dispatched late which affected practical lessons for TVET.
- v) Low salaries for staff were a major hiccup in TVET budgeting and salary increments were thus commended. The insufficient TVET budgets and staff demotivated staff to work, enhanced moonlighting of staff and hampered students' retention and regular school attendance, which contribute to gender inequities.
- vi) Most instructors never received adequate and timely teaching resources despite postulations for them promoting gender equity among students, enhancing the teaching and learning process, and motivating instructors to exercise practical teaching in TVET.
- vii) Most participants whose parents were of middle and low SEC depended on their parents for financial support, which probed them to engage in part-time work after school, thus compromising their study time.
- viii) The PhLE and IPsLE in urban VTI exhibited multiple barriers to gender equity including heavy traffic and noise, unhygienic sanitation facilities, small

- and unhygienic dining facilities, small sports grounds, and insufficient housing facilities for staff. Rural-based VTI were however distant from heavy traffic and noise, with spacious sports grounds, thus presenting a quiet and conducive environment for learning. Nonetheless, they exhibited limited safety, hygiene, non-functional medical facilities, and insufficient housing facilities.
- ix) The IPsLE also lacked sufficient furniture, lacked organisation, employed teacher-centred approaches and had poor communication and interactions between instructors and learners.
 - x) Moreover, fair treatment of female and male students was reported in TVET institutes despite the presence of school-related violence like verbal abuse, bullying, and sexual abuse.
 - xi) Most participants also engaged in CCA, with males participating more in ball games while females were more dominant in club activities.
 - xii) The human resources in VTI were dominated by males in non-traditional careers like HoDs while females dominated traditional vocational careers like secretaries and counsellors. There was also a significant positive linear relationship between students' enrolment and staff population, where an increase in staff population would increase students' enrolment. Further, instructors, institutional leaders, and parents or relatives were the most cited role models for TVET students.
 - xiii) The LFE attributes influenced gender equity differently. The PhLE promoted concentration in class and attracted students to enrol. Equally, the

instruction methods and resources simplified complex modules and raised multiple ideas for different students while curricula and textbooks promoted research and independent study in addition to developing knowledge and study skills, and motivating female students. Further, fair treatment of boys and girls provided a safe environment for both genders and promoted gender equality, while role models encouraged hard work, and guided, mentored and counselled students. Furthermore, CCA refreshed one's mind, enhanced physical fitness, nurtured students' talents, and developed life skills like resilience.

xiv) The use of gender-sensitive instruction, gender-based guidance and counselling, and gender-sensitive career guidance, were employed in promoting gender equity in the LFE.

xv) Finally, it was concluded that this study achieved its purpose and objectives. The high return rate of students, IL and instructors' questionnaires, DL, CSO gender advocates and ministry officials' willingness to engage in interviews for the study provided adequate information to answer the five questions for the study. Issues relating to enhancing gender equity of students hinged on three aspects: TVET and gender advocacy, financing resources, and a learner-friendly environment for students and instructors in TVET.

6.4 Recommendations

According to the findings, the following recommendations were made to boost gender equity among VTI students.

6.4.1 Recommendations to Policy Makers

1. The government needs to employ experts for TVET advocacy in the different institutions, ministries and other stakeholders to support its mandate for TVET and gender policies.
2. There is a need to increase budgeting for the dissemination, implementation, and evaluation of strategies for TVET advocacy.
3. Policies for gender equity need to be disseminated to the instructors and students as major policy implementers to ease their implementation and evaluation
4. Equally, there is a need to unify policies for the promotion of gender equity among the East African Community (EAC) member states.
5. The use of the male engagement strategy for the promotion of equitable participation needs to be strengthened for its impact to be felt.
6. The government needs to revisit policies on the dispatch of grants and instructional resources to VTI to counteract delays in supplies. Their dispatch before the start of the new term/semester will enable institutions to plan better and adequately use them for proper instruction and learning.

6.4.2 Recommendations to VTI and HEI

1. The effective implementation of the different TVET advocacy strategies was commended in all VTI and HEI in Uganda.
2. There is a need to make TVET and gender policies very visible in VTI. Posters and messages in areas of heavy traffic are recommended.

Institutions need to also increase TVET advocacy around the community to improve its status quo.

3. A supportive loan scheme for TVET students needs to be reinstated to support more students to access TVET through private sponsorship.
4. There is also a need to increase the amount of money assigned to each student as a capital grant, with a slightly higher amount for females to cater for their sanitary needs.
5. Policy formulation and memoranda of understanding are encouraged between TVET institutions and the industries to support up-to-date skills training and reduce training costs.
6. A gender lens needs to be used in the allocation of bursaries and scholarships for TVET, as well as increasing budgets and staff remuneration for TVET so that inequities are addressed.
7. The government needs to reinstate pay for the students who make articles for the institutions, encourage TVET institutions to engage in income-generating activities, support public-private partnerships for up-to-date skills training, as well giving starter kits to students upon graduation.
8. TVET institutions are also encouraged to seek donor funding and build linkages with other institutions and organisations, as a benchmark for supporting activities geared towards gender equity.
9. The government also needs to prioritize infrastructure development and improving training facilities in TVET institutions, with a special focus on distinct sanitation and hostel facilities for female students and staff.

6.4.3 Recommendations to Instructors

1. Retraining of instructors about the use of gender-sensitive instruction (methods, resources, and language), gender-based guidance and counselling, and gender-sensitive career guidance, was also commended.
2. Female instructors also need to be more supportive and tolerant of female students in their language use, instruction and counselling.

6.4.4 Recommendations to MoES

1. The MoES needs to assess the use of learner-friendly pedagogical approaches, the presence of female instructors and the presence of role models in VTI, as avenues for promoting gender equity in the LFE.
2. The MoES needs to reinstate pay for the students who make articles for the institutions, encourage TVET institutions to engage in income-generating activities, support public-private partnerships for up-to-date skills training, and give starter kits to students upon graduation.
3. The MoES should periodically organise gender awareness training for different stakeholders, as a way of counteracting their perceptions of TVET.

6.4.5 Recommendations for Further Research

1. The influence of familial factors on equitable participation in TVET was not exhaustively explored, and parents or guardians were not involved in this study. Thus, a study focusing on the contribution of familial factors to equitable participation, with parents/guardians as one of the participants for that study is thus recommended.

2. The present study investigated the contribution of gender policies to the promotion of gender equity (enrolment and retention) of students in TVET institutions in Uganda. A similar study is recommended in other EAC states to compare findings and make unified conclusions for the region.
3. Likewise, a study focusing on the contribution of gender policies to equitable completion rates and life-long learning in TVET is also recommended.
4. The current study was conducted in one region of Uganda. There is a need to conduct a similar study in other regions of Uganda in a bid to improve the status quo of TVET.
5. This study also hinged on two gender policies and three attributes of gender policies including advocacy strategies, financial resources and learning environment. There is a need to explore advocacy for other gender and education policies and their impact on students' participation in education.
6. Equally, there is also a need to study how sexual abuse, early sexual engagements and teenage pregnancies contribute to gender equity among VTI students the government needs to reinstate pay for the students who make articles for the institutions, encourage TVET institutions to engage in income-generating activities, support public-private partnerships for up-to-date skills training, as well giving starter-kits to students upon graduati

REFERENCES

- ADEA. (2006). A toolkit for Mainstreaming Gender in Higher Education in Africa. (W. G. Education, Compiler) Accra, Ghana: Association of African Universities.
- Adelakun, O. A., Oviawe, J. I., & Barfa, G. I. (2015). Strategies for Enhancing Females' Participation' in Technical, Vocational Education and Training (TVET) in Nigeria. *Advances in Social Sciences Research Journal*, 2(4), 110-120.
- African Union Commission. (2015, April). Agenda, 2063: The Africa We Want. Ethiopia, Addis Ababa.
- African Union Commission. (2005). Protocol to the African Charter of Human & Peoples' Rights on the Rights of Women in Africa (Maputo Protocol. Maputo, Mozambique.
- Agrawal, T. (2014). Skills Development in India: An examination. *Journal of Education and work*, 6(27), 629-650. doi:10.1080/3639080.2013.787487
- Ahmed, A., Wadood, A., & Mohammad, N. (2020, September). Tracer Study of Socio-Economic and Demographic Impacts of Technical and Vocational Education and Training (TVET) for Women in Baluchistan. *Pakistan Social Sciences Review*, 4(3), 824-838.
- Akpakwu, O. S., & Terhile, B. F. (2014). Gender Equality in Schools: Implications for the Curriculum, Teaching and Classroom Interactions. *Journal of Education and Practice*, 5(32), 7-13. Retrieved June 29, 2018, from <https://www.iiste.org/>
- Al-Ansari, A., Al-Harbi, F., AbdelAziz, W., AbdelSalam, M., ElTantawi, M. M., & ElRafae, I. (2016). Factors affecting Student Participation in Extra-curricular Activities: A Comparison Between Two Middle Eastern Dental Schools. *The Saudi Dental Journal*, 28(1), 36-43.
- Alber, R. (2017, January 27). *Edutopia*. Retrieved from Edutopia website: <https://www.edutopia.org/blog/gender-equity-classroom-rebecca-alber>
- Asiimwe, J. ..., & Atukwase, A. (2017). Factors Affecting Participation of Women in Administration of Technical and Vocational Education and Training:

- Experiences from Central Uganda. *International Journal of Educational Planning and Administration*, 7(1), 11-21.
- Atari, O. D., & Mckague, K. (2015). South Sudan: Stakeholder's views of Technical and Vocational Education and Training and a framework for action. *Journal of Vocational education and training*, 169-186. doi:10.1080/13636820.2014.983954
- Atkins, L., & Flint, K. J. (2015). Nothing changes: Perceptions of vocational education in England. *International Journal of Training Research*, 13(1), 35-48. doi:10.1080/14480220.2015.1051344
- Ayonmike, C. S., Okwelle, P. C., & Okeke, B. C. (2015). Towards Quality Technical Vocational Education and Training(Tvet) Programmes in Nigeria. *Journal of Education and Learning*, 25-34. Retrieved March 3, 2021, from <https://files.eric.ed.gov/fulltext/EJ1075172.pdf>
- Bahagdhel, L., Chaisemartin, D. C., Charpentier, A., & Gurgand, M. (2017). Ready for Boarding? The Effects of Boarding School for Disadvantaged children in France. *American Economic Journal: Applied Economics*, 9(1), 140-164. Retrieved July 2018, from Fonds D'experimentation Pour La Jeunesse: https://www.povertyactionlab.org/sites/default/files/publications/236_Ready-for-boarding_Jan2017.pdf
- Ball, C., Huang, K.-T., Cotten, R. S., Rikard, R., & Coleman, O. L. (2016). Invaluable Values: An Expectancy-Value Theory Analysis of Youth's Academic Motivation and Intention. *Information, Communication & Society*, 19(5), 618-638. doi:10.1080/1369118X.2016.1139616
- Bhattarai, N., Bernasek, A., & Pena, A. A. (2020, June 26). Factors Affecting School Attendance and Implications for Students Achievement by Gender in Nepal. *Review of Political Economy*, 32(2), 259-282. DOI: 10.1080/09538259.2020.1769296
- Biji, A. V., & Lawrence, M. (2019). Retention and Attrition among National Certificate (Vocational) Civil and Construction Students in South African TVET. *Industry and Higher education*, 127-134.

- Bryman, A., & Teevan, J. J. (2005). *Social Research Methods*. Ontario, Canada: Oxford University Press.
- Center for Learning Research, F. o. (2003). Enriching learning cultures: proceedings of the 11th annual international conference on post-compulsory education and training: volume 1. *11th Annual conference on Post-compulsory Education and Training*. Brisbane: Australian Academic Press Pty. Ltd.
- Chege, E. N. (2012, November). *Implementation of Co-curricular Activities in Secondary Schools: A case of Kikuyu Division, Kiambu County Kenya*. Nairobi: Kenyatta University Unpublished Master's Degree Thesis.
- Chege, N. F., & Likoye, F. (2015). Where is Education for All? Parents' and Teachers' Perceptions of Schoolboys Becoming Men in Kirinyaga and Nairobi Counties, Kenya. *Journal of International Cooperation*, 17(2), 1-14.
- Cheruiyot, S. K., & Wanyaga, F. M. (2019, April 22). Gender Inclusion in TVET: An Examination of Sustainable Interventions in Selected TVET Institutions in Kenya's Sustainable Development in Education. *International Journal of Science, Technology, Education and Management Research*, 4(3), 39-55.
- Cohen, L., Manion, L., & Morrison, K. (2011). *Research Methods in Education (7th Edition)*. New York: Routledge.
- Connelly, R., Gayle, V., & Lambert, S. P. (2016, April 9). Review of Occupational-based Social Classifications for Social Survey Research. *Methodological Innovations*, 9, 1-14.
- Creswell, W. J. (2013). *Qualitative Inquiry & Research Design: Choosing Among Five Approaches (3rd Edition)*. Thousand Oaks: Sage Publications Inc.
- Creswell, W. J. (2014). *Research Design; Qualitative, Quantitative & Mixed Approaches (4th Edition)*. Thousand Oaks, California: Sage Publications. Retrieved April 2018
- Creswell, W. J., & Clark, P. L. (2011). *Designing and Conducting Mixed Method Research*. Thousand Oaks, California: Sage Publications, Inc.

- Crossman, B., & Cameron, R. (2014). A Comparative Thematic Review of Vocational Leadership Literature from USA, Great Britain and Australia. *Research in Post-Compulsory Education*, 19(4), 393-416.
- Dereje, M. K. (2021). Gender-based Assessment in Science, Technology and Innovation Ecosystem in Ethiopia. *African Journal of Rural Development*, 5(3), 87-104.
- Directorate of Industrial Training (DIT). (2018, March 26). *DIT-BrochureBTJET information*. Retrieved from Directorate of Industrial training Uganda: <http://dituganda.org/>
- Drotos, M. S., & Cilesiz, S. (2016). Shoes, Dues and other Barriers to College Attainment: Perspectives of Students Attending High Poverty, Urban Schools. *Education and Urban Society*, 48(3), 221-244.
- Eccles, J. (2005). Gender Achievements and Motivation. Retrieved January 23, 2018, from https://en.wikipedia.org/wiki/Expectancy-value_theory#Subjective_task_values
- Edokolor, E. J., & Dumbiri, N. D. (2019). Resource Adequacy and Utilization for Effective Teaching and Learning Effectiveness in Vocational Education Programmes in South-South Nigerian Universities. *Journal of Vocational Education Studies*, 2(1), 1-12.
- Emory, W. (1985). *Business Research Methods (3rd Ed.)*. Illinois: Irwin.
- Fincham, J. E. (2008). Response Rates and Responsiveness for Surveys, Standards, and the Journal. *American Journal of Pharmaceutical Education*, 72(2), 1-3.
- Flick, U. (. (2006). *An introduction to qualitative research (Third Edition)*. London. New Delhi. Thousand Oaks: Sage publications Limited.
- Fong, L. M., Kiong, T. T., Mukhtar, M. I., Yunos, J. M., & Maizam, A. (2020). *Issue 15: TVET Research as a Central Factor for the Development of TVET Systems*. Retrieved from TVET@Asia: The Online Journal for Technical and Vocational Education and Training in Asia: http://tvvet-online.asia/wp-content/uploads/2020/07/01_Lee-Ming-Fong_2020-07-20_Vorlage-Final.pdf

- Forum for African Women Educationalists (FAWE). (2015). Tackling Gender Inequality in Higher Education Institutions: From Affirmative Action to Holistic Approaches. *Summit on Higher Education for Revitalizing Higher Education for Africans* (pp. 1-7). Dakar: FAWE.
- Fraenkel, R. J., Wallen, E. N., & Hyun, H. H. (2012). *How to Design and Evaluate Research in Education*. New York: McGraw-Hill Companies, Inc.,
- Gemeda, T. F., & Tynjala, P. (2015). Exploring Teachers' Motivation for Teaching and Professional Development in Ethiopia: Exploring Voices from the Field. *Journal of Studies in Education*, 5(2), 169-186.
- Gimus, S. (2014). The Effects of Community Factors on School Participation in Turkey: A Multilevel Analysis. *International Review of Education*, 60(1), 79-98. doi: DOI 10.1007/s11159-014-9411-7
- Gore, J., Ellis, H., Fray, L., Smith, M., Lloyd, A., Berrigan, C., . . . Holmes, K. (2017). *Choosing VET: Investigating the VET Aspirations of School Students*. Adelaide, Australia: National Centre for Vocational Education Research.
- Government of Bangladesh. (2012, June 30). National Strategy for promotion of Gender Equality in TVET in Bangladesh. Dhaka, Bangladesh.
- Government of Uganda. (2009). The Gender in Education Policy. Kampala, Uganda.
- Government of Uganda. (2010). The National Development Plan. Kampala, Uganda.
- Greenwood, D., & Levin, M. (1998). *Introduction to Action Research; Social research for social change*. London.Thousand Oaks. New Delhi: Sage publications.
- Haugen, S. C., Klees, J. S., Stromquist, P. N., Lin, J., Choti, T., & Corneilse, C. (2011). *Increasing Female Primary School Teachers in African Countries: Barriers and Policies*. Maryland: FAWE-USA.
- Hongmei, Y., Zhang, L., Yezhou, Y., Wang, A., Yue, M., Yaojiang, S., . . . Scott, R. (2015, May). Exploring Dropout Rates and Causes of Drop-out in Upper Secondary Technical and Vocational Education and Training Schools in China. *International Journal of Education Development*, 115-123.

- Iddrisu, I. (2016). Universal Basic Education: Impact on Enrolment and Retention. *Education and Practice*, 7(17), 141-148. Retrieved April 12, 2019
- International Labour Organisation, ILO. (2016). *Compilation of Assessment Studies on Technical Vocational Education and Training (TVET): Lao People's Republic, Mongolia, The Philippines, Thailand and Vietnam*. Bangkok: International Labour Organisation, ILO.
- Isreal, G. D. (2008). *Determining Sample Size*. Retrieved June 28, 2018, from University of Florida Institute of Food and Agricultural Sciences (IFAS) Extension: <https://www.ifas.ufl.edu/>
- Jackson, K. M., Pukys, S., Castro, A., Hermosura, L., Mendez, J., Vohra-Gupta, S., . . . Morales, G. (2017). Using the Transformative Paradigm to Conduct a Mixed Method Needs Assessment of a Marginalized Community: Methodological Lessons and Implications. *Evaluation and Program Planning*, 66, 111-119. DOI:<https://doi.org/10.1016/j.evalprogplan.2017.09.010>
- Jones, S. K. (2011, July 4th). Girls Secondary Education in Uganda: Assessing Policy within the Women's Empowerment Framework. *Gender and Education*, 23(4), 285-413.
- Kariyana, I., Mophasa, C., & Mapuranga, B. (2013). Towards a Holistic Curriculum: How Significant is Learners' Participation in Cocurricular Activities? *Journal of Social Sciences*, 35(2), 159-167.
- Kell, P. (2010). VET Shifting Responses to Inequality, Disadvantage and Equity. *International Journal of Training Research*, 2(8), 98-102. doi:10.5172/ijtr.8.2.98
- Kigwilu, P. C., Akala, W. J., & Wambua, J. M. (2016). Challenges Facing the Effective Implementation of Artisan and Craft Courses in Catholic Sponsored Community Colleges in Nairobi. *Journal of Research and Methods in Education*, 6(2), 27-36.
- Kimani, E., Mugenda, O., Maina, L., & Wainaina, M. (2010). Challenges Facing Female Learners in Various Levels of Education in Kenya. *Isiphethu Solwazi International Journal of Education*, 1-18.

- Kindon, S., Pain, R., & Kesby, M. (2010, July 22). *Durham Research Online*. Retrieved April 28, 2016, from Durham university website: <http://www.dro.dur.ac.uk>
- Kintu, D., Kitainge, K. M., & Farej, A. (2019). An Exploration of Strategies for Facilitating Graduates' Transition to the World of Work: A case of Technical Vocational Education and Training Graduates in Uganda. *International Journal of Vocational Education and Training Research*, 5(1), 1-9. doi:doi:10.11648/j.ijvetr.20190501.11
- Krishnan, P., & Shaorshadze, I. (2013, February). *Technical and Vocational Education and Training in Ethiopia*. Retrieved from The International Growth Centre: <https://www.theigc.org/wp-content/uploads/2014/09/Krishnan-Shaorshadze-2013-Working-Paper.pdf>
- Kushmakar, B. (2016, July). Gender Equality and Social Inclusion in Vocational Education and Training. *Journal of Advanced Academic Research*, 3(11), 29-39. DOI: <https://doi.org/10.3126/jaar.v3i2.16753>
- Kwesiga, J., & Ahikire, J. (2006). On Students' success and Equity in a Reforming University; Makerere University in the 1990s and Beyond. *Journal of Higher Education in Africa*, 4(2), 1-46.
- Langat, K., Omboto, D. B., Ambuli, A. M., & Ngeno, J. K. (2021). The Effect of Trainer Competences on Training Effectiveness: A Survey of Public TVET Institutions in Kenya. *The Kenya Journal of Technical and Vocational Education and Training*, 2-13.
- Macklean, R., & Lai, A. (2011). The Future of Technical and Vocational Education and Training: Global Challenges and Possibilities. *International Journal of Training Research*, 9(1-2), 2-15. doi:10.5172/ijtr.9.1-2.2
- Magaji, A., Rishi, A. G., M, M. M., Hammad, D. D., Auwalu, Y., & Ahmed, A. A. (2020). Gender Disparity in the Production of Vocational and Technical Education Teachers in Northern Nigeria: A Case Study. *Sixth International Conference on E-Learning econf* (pp. 1-5). IEEE Xplore.
- Marshall, C., & Rossman, B. G. (2011). *Designing Qualitative Research 5th Edition*. Thousand Oaks: Sage Publications Inc.

- Martini, T., Verby-Verutis, R., Grose, J., Clark, B., & Elder, A. (2019). Canadian Undergraduate Reports of Co-curricular Involvement Across the Degree. *Teaching and Learning Inquiry*, 7(1), 103-119.
- Matsolo, J. M., Ningpuanyeh, W. C., & Susuman, S. A. (2018). Factors Affecting the Enrolment Rate of Students in Higher Education Institutions in the Gauteng Province, South Africa. *Journal of Asian and African Studies*, 53(1), 64-80.
- Mbirianjau, W. L. (2009). *Access to and Participation of Women in Science-oriented Vocation Education and Training*. Nairobi: Kenyatta University Unpublished Masters' Thesis.
- Md. Roknuzzaman, S. (2019). Developing Cocurricular Activities and Extra-Curricular Activities for All-round Development of the Undergraduate Students: A study in Selected Public University in Bangladesh. *Pakistan Journal of Applied Sciences*, 10(1), 61-82.
- Mikkelsen, B. (2005). *Methods for development work and research: a new guide for practitioners (second ed.)*. New Delhi. Thousand Oaks, London: Sage publications.
- Miles, H. K., & Katz, N. (2018, September). Teacher Salaries: A Critical Equity Issue. *National Association of State Boards of Education*, 18-35.
- Ministry of Education and Sports (MoES). (2008). The Business Technical Vocational Education and Training Act. Kampala, Uganda.
- Ministry of Education and Sports (MoES). (2013). National Strategy for Girls' Education in Uganda (2015-2019). Kampala, Uganda.
- Ministry of Education and Sports. (2017). *The Education and Sports Sector Annual Performance Report (ESSAPR) FY 2016-2017*. Kampala Uganda: MoES.
- Ministry of Education, Science and Technology (MoEST). (2015). Education and Training Sector Gender Policy. Nairobi, Kenya.
- MoE-Rwanda. (2008). Technical and Vocational Education and Training Policy in Rwanda. Kigali, Rwanda.

- MoES. (2016). *Education Statistical Abstract*. Kampala: Government of Uganda.
- MoES. (2017). *Business Technical Vocational Education and Training (BTJET)*. Retrieved from Ministry of Education and Sports: <http://www.education.go.ug/data/smenu/16/BTVET.html>
- MoES. (2011). *Skilling Uganda: BTJET Strategic plan 2012/13-2021/2*. Kampala, Uganda: Ministry of Education and Sports. Retrieved September 2016, from <http://fenu.or.ug/wp-content/uploads/2013/02/Skilling-Uganda-BTVET-Strategic-Plan-final-version.pdf>
- MoES (2013). *National Strategy for Girls' Education (NSGE) in Uganda (2015-2019)*. Kampala, Uganda.
- Molyneaux, K. J. (2011). Uganda's Universal Secondary Education Policy and its effects on 'Empowered' women: How reduced Income and moonlighting activities differentially impact male and female teachers. *Research in Comparative and International Education*, 62-78.
- Mugenda, A. G. (2008). *Social Science Research*. Nairobi: Applied Research and Training Services.
- Mugenda, O., Kimani, E. N., Maina, L. W., & Wainaina, M. (2010). *Female Representation at Various Levels of Education in Kenya: Identifying Opportunities for Policy, Actions and Linkages*. Nairobi: Longhorn Publishers.
- Naik, S., & Wawrzynski, W. M. (2018). Gender, Race, Finance and Student Engagement in Cocurricular Activities in South African University. *Journal of College Student Development*, 59(5), 598-613.
- Ndayambaje, I., Ampoto, S., Bizimana, B., Otieno, M. A., Ogeta, O. M., & Orodho, A. J. (2015). Challenges of Social and Spill-Over Benefits as Motivating Factors to Investment in Formal Education in Selected Countries of Ghana, Kenya and Rwanda. *Journal of Humanities and Social Sciences*, 29-38.
- Ngugi, M., & Muthima, P. (2017). Female Participation in Technical, Vocational Education and Training (TVET) Subsector; The Kenyan Experience. *Public*

- Policy and Administration Research*, 7(4), 9-23. Retrieved January 30, 2021, from <https://iiste.org/Journals/index.php/PPAR/article/view/36735>
- Ngutiku, K. G. (2016). *The Influence of Resources and Attitudes on Students' Participation in Co-curricular Activities in Secondary Schools in Meru County, Kenya*. Nairobi: Kenyatta University Unpublished Masters' Thesis.
- Nyaundi, L. (2018, June 16). *TVET needs Sh30 Billion to Drive the Big Four Agenda*. Retrieved February 16, 2019, from The star: https://www.the-star.co.ke/news/2018/06/16/tvet-needs-sh30-billion-to-drive-big-four-agenda-ps_c1773504
- Obikwelu, C. L., & Nwasor, V. C. (2017). Perceived Influence of Remuneration on Teachers' Motivation in Anambra State Secondary Schools. *Journal of the Nigerian Academy of Education*, 13(1), 146-156.
- Obonyo, M. M. (2013). *Contributions of Affirmative Strategies to Widening Access to Universities for Students from Kenya's Asal Regions*. Nairobi: Kenyatta University.
- Okello, B. (2012). *Factors Influencing the Attitude Towards Technical Vocational Education and Training in Uganda*. Nairobi: Kenyatta University, Unpublished PhD Thesis.
- Okoth, C. (2019, July 6). Vocational Students to Lose out on Admission. Kampala, Kampala, Uganda.
- Olelewe, J. C., Orji, T. C., Onisen, E. C., & Ikemelu, R.-K. C. (2019). Constraints and Strategies for Effective Use of Social Networking Sites (SNSs) for Collaborative Learning in Tertiary Institutions in Nigeria: Perceptions of TVET Lecturers. *Education and Information Technologies*, 25, 239-258. Retrieved March 12, 2021, from <https://link.springer.com/article/10.1007%2Fs10639-019-09963-7>
- Opit, E. (2014). *Impact of Uganda Government Science-based University Sponsorship Policy on Girls' participation in Sciences at A-level in Mukono & Wakiso Districts*. Kenyatta University, Nairobi: Unpublished PhD thesis.

- Orodho, J. A. (2014). The Equity and Quality Implications of Free Day Secondary Education (FDSE) Policy in Kenya: What are the Unfinished Business in the Financial Arrangement? *International Journal of Current Research*, 5582-5591. Retrieved March 16, 2018
- Oviawe, J. I. (2018). Revamping Technical Vocational Education and Training through Public-Private Partnerships for Skills Development. *Makerere Journal of Higher Education*, 10(1), 73-91.
- Pallant, J. (2007). *SPSS Survival Manual: A Step-by-Step Guide to Data Analysis Using SPSS for Windows-3rd Edition*. London: McGraw Hill Open University Press.
- Pirzada, G. (2020, July 20). *Effect of including global TVET worldview in TIMT (TVET Institute Management Training) on Vocational Institute Management in Pakistan*. Retrieved from TVET@Asia-The Online Journal for Technical and Vocational Education and Training in Asia: http://tvvet-online.asia/wp-content/uploads/2020/07/05_Gouhar-Pirzada_Effect_2020-07-20_Vorlage-Final-1.pdf
- Pirzada, G. (2020, July 20). *Issue 15: TVET Research as a Central Factor for the Development of TVET Systems*. Retrieved from TVET@Asia: The Online Journal for Technical and Vocational Education and Training in Asia: http://tvvet-online.asia/wp-content/uploads/2020/07/05_Gouhar-Pirzada_Effect_2020-07-20_Vorlage-Final-1.pdf
- The Republic of Kenya. (2013). The Technical Vocational Education and Training Act. Nairobi, Kenya.
- The Republic of Uganda. (1995). Constitution of the Republic of Uganda. Kampala, Uganda.
- Ryan, H. (2013, December 6). *The Effects of Classroom Environment on Student Learning*. Retrieved from ScholarWorks at Western Michigan University (WMU), Honors Theses: https://scholarworks.wmich.edu/cgi/viewcontent.cgi?article=3380&context=honors_theses

- Santhya, K., Jejeebhoy, J. S., Zavier, A. F., Acharya, R., & Shah, N. (2014). *Supporting Girls in their Transition to Secondary Education: An Exploratory Study of Family, School and Community Environments of Adolescent Girls in Gujarat*. New Delhi, India: Population Council. Retrieved July 2018, from https://www.popcouncil.org/uploads/pdfs/2014PGY_GujaratEducationReport.pdf
- Shaffer, L. M. (2019). Impacting Student Motivation: Reasons for Not Eliminating Extracurricular Activities. *Journal of Physical Education, Recreation and Dance*, 90(7), 8-14.
- Shahrin, A.-A. N., Normala, Z., Irdyanti, N. M., & Noor, A. K. (2020). Pull and Push Factors of Students' Enrolment in TVET Programmes at Community Colleges in Malaysia. *Journal of Vocational Education and Training*, 12(1), 68-75.
- Simmonds, S. (2017, September). Teachers as Curriculum Leaders: Towards Promoting Gender Equity as a Democratic Ideal. *Educational Research for Social Change*, 6(2), 16-28. Retrieved July 4, 2018, from <http://www.scielo.org.za/pdf/ersc/v6n2/03.pdf>
- Simovska, V. (2004). Students Participation: A Democratic Perspective. *Health Education Research*, 19(2), 198-207.
- Spillane, J. P., Gomez, L. M., & Mesler, L. (2009). Notes on Reframing the Role of organizations in Policy Implementation. In G. Sykes, B. Schneider, D. N. Plank, & T. G. Ford, *The Handbook of Educational* (pp. 409-425). New York: American Educational Research Association.
- St-Amand, J., Girard, S., Hiroux, M.-H., & Smith, J. (2017). Participation in Sports-Related Extracurricular Activities: A strategy that Enhances School Engagement. *McGill Journal of Education*, 52(1), 197-206.
- Sullivan, R. (2019, May 13). *Teaching Poster Design as Graphic Advocacy*. Retrieved from Digital Rhetoric Collaborative Website: <https://www.digitalrhetoriccollaborative.org/2019/05/13/teaching-poster-design-as-graphic-advocacy/>

- Swedish International Development Agency (SIDA). (2017). *A Brief on Gender Equality in the Education Sector*. Stockholm, Sweden: SIDA.
- Thompson, A. (2003). Caring in Context: Four Feminist Theories on Gender and Education. *Curriculum Inquiry*, 33(1), 9-65. Retrieved April 9, 2018, from <https://www.jstor.org/stable/pdf/3202137>
- UBOS. (2012, June). 2012 Statistical Abstract. Kampala, Uganda.
- UBOS. (2016, June). 2016 Statistical Abstract. Kampala, Uganda.
- Uganda Bureau of Statistics. (2008, June). UBOS 2008 Statistical Abstract. Kampala, Uganda.
- Uganda Women's Network, UWONET. (2018). *Abrigded Version of the Gender Assessment Report*. Kampala: UWONET.
- UNESCO. (2014). *Priority Gender Equality Action Plan (2014-2021)*. Paris: UNESCO.
- UNESCO. (2015). Education 2030: Incheon Declaration and Framework for Action for the Implementation of Sustainable Development Goal 4, Pub. L. No. ED-2016/WS/28.
- UNESCO. (2015). Regional Overview: Sub-Saharan Africa; Education for All Global Monitoring Report. Paris, France.
- UNESCO. (2016 b). *Teaching Policies and Learning Outcomes in Sub-Saharan Africa: Issues and Options*. Addis Ababa: UNESCO International Institute for Capacity Building in Africa (IICBA).
- UNESCO. (2016a). *Education for People and Planet: Creating Sustainable Futures for All*. Paris: UNESCO.
- UNESCO. (2016c). Strategy for Technical Vocational Education and Training (2016-2021). Paris, France: UNESCO.
- UNESCO. (2019). *UNESCO Strategy for Gender Equality in and through Education (2019-2025)*. Paris: UNESCO.

- UNESCO Institute of Statistics (UIS). (2010). *Global Educational Digest 2010: Comparing Educational Statistics Across the World*. Montreal, Canada: UIS.
- UNESCO-UNEVOC. (2012, May). *UNESCO-UNEVOC International Center for Technical Vocational Education and Training*.
- UNESCO-UNEVOC. (2013, June). World TVET Database Norway. Bonn, Germany.
- UNESCO-UNEVOC. (2013b, November). *UNESCO-UNEVOC International Centre for Technical Vocational Education & Training*.
- United Nations. (2015). Transforming our world: The 2030 Agenda for Sustainable Development P. L. No. A/RES/70/1.
- United Nations. (2016a). The Sustainable Goals Report 2016. Retrieved October 2017, from <https://unstats.un.org/sdgs/report/2016/The%20Sustainable%20Development%20Goals%20Report%202016.pdf>
- United Nations Girls' Education Initiative. (2012). *Gender Analysis in Education*. New York: UNGEI.
- Vidyakala, K., & Vaishnavi, P. M. (2017). Factors Influencing Student Absenteeism in Schools. *International Journal of Science and Research*, 6(6), 2762-2764.
- Webster, S. N., & Sausner, B. E. (2017). A focused Analysis of TVET: Unique Opportunities and Strategies for Investing in and Engaging Youth in Nicaraguan Society. *Journal of Vocational Education and Training*, 4(69), 451-472. DOI:10.1080/13636820.2017.1322128
- Wheelahan, L., & Moddie, G. (2016, November). Global Trends in TVET : A Framework for Social Justice. Brussels, Belgium. Retrieved May 23, 2018, from <http://download.ei-ie.org/Docs/WebDepot/GlobalTrendsInTVET.pdf>
- Willis, K., Daly, J., Kealy, M., Small, R., Koutroulis, G., Green, J., . . . Thomas, S. (2007). Role of Theory in Qualitative Public Health Research. *Australian and New Zealand Journal of Public Health*, 438-443. Retrieved April 15, 2018

- Winchester, H. P., & Browning, L. (2015, May 5). Gender Equality in Academia; a Critical Reflection. *Journal of Higher Education Policy and Management*, 269-281.
- World Economic Forum (WEF). (2019). *Global Gender Gap Report 2020*. Geneva: World Economic Forum.
- Zinnah, M. M., & Mulbah, J. S. (2020). Assessment of the Current Status of Technical and Higher Education Sector in Liberia. *African Journal of Rural Development*, 5(1), 167-189.

APPENDICES

RESEARCH INSTRUMENTS

Appendix A: Respondents' Informed Consent Form

This document outlines the research study and expectations for potential participants. It should be written in layman's terms and typed on MUST-REC letterhead. The wording should be directed to the potential participant NOT to REC. If a technical term must be used, define it the first time it is used. Also, any abbreviation should be spelt out the first time it is used.

NB: All the sections of this document must be completed without any editing or deletions

Study Title: *Contribution of Gender Policies in Vocational Education and Training to Promotion of Gender Equity of Students in Central Region, Uganda*

Principal Investigator(s): Aidah Trevelynn Nganda

INTRODUCTION

What you should know about this study:

- You are being asked to join a research study.
- This consent form explains the research study and your part in the study
- Please read it carefully and take as much time as you need
- You are a volunteer. You can choose not to take part and if you join, you may quit at any time. There will be no penalty if you decide to quit the study

Provide here a brief background to the study

Gender equity in Technical Vocational Education and Training (TVET) is paramount for global and national development. However, gender inequities in TVET pose challenges of unemployment, poverty and under-development. Whereas gender policies have been enacted, studies reveal persistent disparities and inequities in TVET. Several barriers still hinder policy dissemination and research in TVET including low policy and TVET advocacy, financial resources and un-conducive learning environments. Surprisingly, scanty research exists about how these attributes of gender policies contribute to equitable participation in TVET.

Purpose of the research project: *This study will investigate the contribution of gender policies in Vocational Education and Training to the promotion of gender equity of students in six TVET institutions of the central region, Uganda. About 250 Participants will participate in this study including; 165 students, 72*

instructors, 12 institutional leaders, 6 district leaders and 6 civil society gender advocates. The study involves research about the contribution of policy advocacy, financial resources and learning environment to gender equity of students, expected to take one year of subject's participation.

Why you are being asked to participate: *You have been selected to participate in this study because you bear desired characteristics and you are in an administrative and leadership position, hence able to provide the desired data for this study.*

Procedures: *This study will neither involve experimental nor clinical procedures. The study Participants will however provide information on questionnaires, observations on gender equity will be made and interviews with key Participants will be conducted on request. Similarly, documents of enrolment, participation and retention of students, and learning resources will be analysed.*

Risks/discomforts: *The interview sessions will involve audio recordings to support the researcher in transcribing and decoding the study findings. Some information about policy advocacy may cause uneasiness about the subject. However, the subject will be assured of anonymity, confidentiality and use of the information for study purposes only.*

Benefits: *Most benefits of this study are indirect. The participants will enrich their knowledge of gender policies and gender equity in TVET and how they can contribute to equitable participation in TVET.*

Incentives/rewards for participating: *There will be no costs to subjects enrolled in the research protocols. The students participating in the filling questionnaires will receive some pens and pencils while each participating institution will receive a wall clock in appreciation of their time. No direct payments will be made for participating in this study.*

Protecting data confidentiality: *A very high level of confidentiality will be maintained for any data collected in form of text, audio recordings and photographs. The information will be used for study purposes and will be kept for five years, which is in line with the data protection guidelines.*

Protecting subject privacy during data collection: *The principles of pseudonyms and anonymity will be used and no names will be used on the research protocols. However, telephone contacts of key Participants will be required to support peer debriefs and validation of study findings*

Right to refuse/withdraw: *Your participation in this study is voluntary. Refusal to participate or withdraw from the study will not involve any penalties.*

What happens if you leave the study? *Withdraw of participation in this study will not result in any penalty or withdrawal of any benefits.*

Who do I ask/call if I have questions or a problem? *Please address any questions or problems to the principal researcher on phone numbers: 0782974293/0703133455 or email address: aidalukoma2@yahoo.co.uk*

You may also contact the MUST-REC:
Dr Francis Bajunirwe

Chairman MUST-REC

P.O Box 1410

Mbarara

Tel: 0485433795

What does your signature (or thumbprint/mark) on this consent form mean?

Your signature on this form means

- You have been informed about this study’s purpose, procedures, possible benefits and risks
- You have been given the chance to ask questions before you sign
- You have voluntarily agreed to be in this study

Print name of adult participant
Date

Signature of adult participant/legal
Authorized representative

Print the name of the person obtaining
Consent

Signature
Date

Thumbprint/mark

signature of the witness

Appendix B: Document Analysis Guide

Institution's code.....

District.....

Setting:

Type of document	Status	Programs	Enrolment (Year 1)		Transition (Year 2)		Completion		Remarks
Cohort 1			2013-2014		2014-2015		2015		
Enrolment, Transition and completion record					F	M	F	M	
		BCP							
		AHS							
		Nursing							
		WWT							
		TGD							
		EI							
	Cohort 2								
Enrolment, Transition and completion record			Enrolment (Year 1)		Transition (Year 2)		Completion		Remarks
			2015-2016		2016-2017		2017		
			F	M	F	M	F	M	
		BCP							
		AHS							
		Nursing							
		WWT							
		TGD							
		EI							
Class registers		BCP							
		AHS							
		Nursing							
		WWT							
		TGD							
		EI							
Learning Resources: Textbooks, curricula, visual aids		BCP							
		AHS							
		Nursing							
		WWT							
		TGD							
		EI							

2.3 Indicate the extent to which these strategies are used to promote TVET in your institution and community.

Strategy	The scale of implementation (1-4)			
	Greatly used	Fairly used	scarcely	Never
Career Guidance				
Research and publication				
Public Lectures				
Fliers and magazines				
Social Media				
TVET and Gender Policies				

2.4 What motivates you to participate and complete training in TVET?

2.5 What challenges have affected your participation in TVET?

2.6 Please indicate the extent to which you agree with the contribution of TVET policies to gender equity in TVET.

Key: SA- Strongly Agree A-Agree U- Undecided D- Disagree SD- Strongly Disagree

Test Items	SA	A	U	D	SD
	5	4	3	2	1
Gender policies contribute to gender equity in TVET					
Girls have the same potential as boys to participate in TVET					
Institutions need to increase sensitization on TVET					
Community leaders need to promote TVET					
Parents' attitudes towards TVET promote gender equity					
Students' attitudes towards TVET promote gender equity					
Male instructors contribute to gender equity in TVET					

Section C: Contribution of Financial Resources to Gender Equity

3.1 Please indicate with a tick how your school dues are paid.

01) Free education 02) Government

03) Bursary/scholarship 04) Parents/guardians 05) Others

(Specify) -----

3.2 How do you meet the rest of your financial needs?

3.3 Please indicate the work done by your parents to earn a living

01) Professional employees 02) Civil-servants

03) Business owners 04) Others (Specify) -----

3.4 How does funding contribute to your enrolment and completion of school?

3.5 Please indicate the extent to which you agree with the contribution of financial resources to gender equity in TVET.

Key: SA- Strongly Agree A-Agree U- Undecided D- Disagree SD- Strongly Disagree

Test Items	SA	A	U	D	SD
	5	4	3	2	1
Private TVET schools increase TVET enrolment					
Increasing the TVET budget promotes gender equity in TVET					
Timely and good staff salaries promote gender equity					
Increasing school fees promotes gender equity					
Bursaries and scholarships in TVET promote gender equity					
Parents' income increases enrolment and completion in TVET					

Section D: Contribution of Physical and psycho-social learning environment

4.1 How does the school environment contribute to students' participation and completion of school?

4.2 What problems do you experience in your school environment that affect your stay in school?

4.3 a) Are girls in your school treated in the same way as boys? 01) Yes 02) No

b) How does the fair treatment of boys and girls encourage them to join and stay in school?

4.4 Please tick the methods of teaching usually used in your class.

01) Lecture method 02) Discussion 03) Project method

04) Others (Specify)

4.5 How have these teaching methods encouraged you to participate in TVET?

4.6 How do subject content and textbooks encourage you to participate in TVET?

4.7 Who is your role model in school or community?

4.8 How has he/she encouraged you to join and complete school?

4.9 a) Do you participate in co-curricular activities? 01) Yes 02) NO

b) If Yes, please specify which one (s)

c) How do co-curricular activities encourage students to participate and complete school?

4.10 Kindly tick the forms of school-related violence that exist in this institution.

01) Bullying 02) Verbal abuse 03) Sexual Abuse d) Others (Specify)

4.11 Please indicate the extent to which you agree with the contribution of the learning environment to gender equity in TVET.

Key: SA- Strongly Agree A-Agree U- Undecided D- Disagree SD- Strongly Disagree

Test Items	SA	A	U	D	SD
	5	4	3	2	1
Location of TVET school influences TVET participation					
Classroom, sanitation, medical and accommodation facilities promote equity					
Improving infrastructure facilities promotes gender equity					
Fair treatment of girls and boys promotes equity					
The provision of sanitary towels to girls promotes gender equity					
Learner-friendly approaches promote equitable learning					
The presence of female & male instructors enhances gender equity					
Equal distribution of instructor's time and energy promotes gender equity					
Teaching materials can promote gender equity					
Co-curricular activities enhance female student's life skills and participation in TVET					

Role models increase enrolment and completion of TVET					
High student numbers affect gender equity					
Well-organized and clean classes promote gender equity					
Guidance and counselling promote gender equity					
Proper language use promotes gender equity					
School-related violence affects gender equity					
Fair rewards for boys and girls promote gender equity					

Section E: Strategies to Improve TVET policies and Boost Access to and Participation in TVET

5.1 In your view, what strategies can be used to improve the enrolment and participation of students in TVET? (Suggest at least 3)

Thank you very much

2.4 To what extent do you use the following strategies to promote participation in TVET?

Strategy	The scale of implementation (1-4)			
	Greatly used	Fairly used	scarcely	Never
Career Guidance				
Research and publication				
Public Lectures				
Fliers and magazines				
Social Media				
TVET and Gender Policies				
Others_____				

2.5 Please indicate the extent to which you agree with the contribution of policy advocacy to gender equity in TVET.

Key: SA- Strongly Agree A-Agree U- Undecided D- Disagree SD- Strongly Disagree

Test Items	SA	A	U	D	SD
	5	4	3	2	1
Gender and TVET policies contribute to gender equity in TVET					
Institutions need to increase sensitization for gender equity					
Girls have the same potential as boys to participate in TVET					
Institutions need to increase sensitization for TVET					
Research in TVET contributes to gender equity					
Institutional and community leaders promote gender equity					
Implementation and evaluation of policies promote gender equity					
Parents' attitudes towards TVET promote gender equity					
Students' attitudes towards TVET promote gender equity					
Male instructors contribute to gender equity in TVET					

Section C: Contribution of Financial Resources to Gender Equity

3.1 What is your view about the current budget allocation for TVET?

3.2 How can appropriate staff salaries contribute to students' TVET access and participation?

3.3 How many of your students are funded with the following avenues?

Funding avenue	Number of students		
	Female	Male	Total
Government-sponsored			
Privately sponsored			
Studying on bursaries			
Other funding avenues			

3.4 a) Does this institution receive capitation grants from the government?

01) Yes

02) No

b) If YES, what is the average period in which the funds are dispatched?

01) One month 02) 2-4 months 03) 5-8 months 04)

Others.....

c) If NO, how do you meet the financial needs of the institution?

3.5 Please indicate the extent to which you agree with the contribution of financial resources to gender equity in TVET.

Key: SA- Strongly Agree A-Agree U- Undecided D- Disagree SD- Strongly Disagree

Test Items	SA	A	U	D	SD
	5	4	3	2	1
Privatization of TVET access increases participation in TVET					
Increasing TVET budget promotes participation in TVET					
TVET funding promotes what is taught and how it's taught					
Timely and appropriate staff remunerations promote gender equity					
Increasing school fees promotes gender equity					
Government and political-will promotes gender equity					
Affirmative strategies promote gender equity					
Parents' income increases enrolment & participation in TVET					

Section D: Contribution of Physical and Psycho-social Learning Environment to Gender Equity

4.1 In your view, how does the learning environment promote gender equity in TVET?

4.2 What is your current staff population?

01) Female _____

02) Male _____

4.3 How many of your staff carry out the following roles?

Roles	Female	Male	Total
Teaching technical subjects			
Teaching vocational subjects			
Heads of Department			
Laboratory Technicians			
Secretaries			
Counsellors			
Career Instructors			
Co-curricular Instructors			
Other roles (specify) _____			

4.4 a) Which of these forms of school-related violence exist in this institution?

01) Bullying 02) Verbal abuse 03) Sexual Abuse 04) None

05) Others (Specify) _____

b) How do you address the noted forms of violence?

4.5 Please indicate the extent to which you agree on the contribution of the learning environment to gender equity in TVET.

Key: SA- Strongly Agree A-Agree U- Undecided D- Disagree SD- Strongly Disagree

Test Items	SA	A	U	D	SD
	5	4	3	2	1
An Institution's location and facilities promote gender equity					
Classroom and accommodation facilities promote access to TVET					
Improving infrastructure facilities promotes gender equity					
Fair treatment of girls and boys promotes equity					
Sanitation and medical facilities promote gender equity					
The provision of sanitary towels to girls promotes gender equity					
Learner-friendly pedagogical approaches promote equitable learning					
The presence of female instructors enhances gender equity					
Fair distribution of instructor's time and energy promotes gender equity					
Engendered curricula and textbooks enhance gender equity					
Co-curricular activities enhance female student's life skills and participation in TVET					
Role models increase enrolment and participation in TVET					
High instructor-student ratios hamper gender equity					
Well-organized and tidy classrooms promote gender equity					

Teacher-centred approaches promote gender equity					
Guidance and counselling promote gender equity					
Proper language use and rewards promote gender equity					
School-related violence affects gender equity					

Section E: Strategies to Improve TVET policies and Boost Access to and Participation in TVET

5.1 In your view, what strategies can be used to improve the enrolment and participation of students in TVET?

Thank you very much

2.3 To what extent do you use the following strategies to promote TVET in this institute?

Strategy	The scale of implementation (1-4)			
	Greatly used-4	Fairly used-3	Scarcely-2	Never-1
Career Guidance				
Research and publication				
Public Lectures				
Fliers and magazines				
Social Media				
TVET and Gender Policies				
Others _____				

2.4 Please indicate the extent to which you agree on the contribution of policy advocacy to gender equity in TVET.

Key: SA- Strongly Agree A- Agree U- Undecided D- Disagree SD- Strongly Disagree

Test Items	SA	A	U	D	SD
	5	4	3	2	1
Gender and TVET policies contribute to gender equity in TVET					
Institutions need to increase sensitization for gender equity					
Girls have the same potential as boys to participate in TVET					
Institutions need to increase sensitization for TVET					
Research in TVET contributes to gender equity					
Institutional and community leaders promote gender equity					
Implementation and evaluation of policies promote gender equity					
Parents' attitudes towards TVET promote gender equity					
Students' attitudes towards TVET promote gender equity					
Male instructors contribute to gender equity in TVET					

Section C: Contribution of Financial Resources to Gender Equity

3.1 a) What is your view about salaries and rewards for TVET staff?

b) How do staff salaries and rewards contribute to equitable participation in TVET?

3.2 a) Are you often supplied with adequate teaching resources in time?

01) Yes 02) No

b) Do timely and adequate teaching-learning resources contribute to students' TVET access and participation?

01) Yes 02) No

c) If **YES**, how do timely and adequate teaching resources promote gender equity?

d) If **NO**, how do you acquire the required instructional materials for teaching and learning?

3.3 Please indicate the extent to which you agree with the contribution of financial resources to gender equity in TVET.

Key: SA- Strongly Agree A-Agree U- Undecided D- Disagree SD- Strongly Disagree

Test Items	SA	A	U	D	SD
	5	4	3	2	1
Privatization of TVET promotes gender equity					
Increasing the TVET budget promotes gender equity					
TVET funding determines what is taught and how it's taught					
Timely and good staff remunerations promote gender equity					
Increasing school fees promotes gender equity					
Government and political-will promotes gender equity					
Affirmative strategies promote gender equity					
A parent's income contributes to enrolment and participation in TVET					

Section D: Contribution of Physical and Psycho-social Learning Environments to Gender Equity

4.1 In your view, how does the learning environment promote TVET access and participation?

4.2 a) Do you participate in co-curricular activities? 01) Yes 02) NO

b) If Yes, please specify which one (s)

4.3 How do co-curricular activities contribute to students' access and participation in TVET?

4.4 a) which of these forms of school-related violence exist in this institution?

- 01) Bullying 02) Verbal abuse 03) Sexual Abuse
- 04) None
- 05) Others (Specify) _____

b) How do you address the noted forms of violence?

4.5 What strategies do you employ to promote gender equity in teaching and learning?
(Suggest at least 3)

4.6 Please indicate the extent to which you agree with the contribution of the learning environment to gender equity in TVET.

Key: SA- Strongly Agree A-Agree U- Undecided D- Disagree SD- Strongly Disagree

Test Items	SA	A	U	D	SD
	5	4	3	2	1
An Institution's location and facilities promote gender equity					
Classroom and accommodation facilities promote access to TVET					
Improving infrastructure facilities promotes gender equity					
Fair treatment of girls and boys promotes equity					
Sanitation and medical facilities promote gender equity					
The provision of sanitary towels to girls promotes gender equity					
Learner-friendly pedagogical approaches promote equitable learning					
The presence of female instructors enhances gender equity					
Fair distribution of instructor's time and energy promotes gender equity					
Engendered curricula and textbooks enhance gender equity					
Co-curricular activities enhance female students' life skills and participation in TVET					
Role models increase enrolment and participation in TVET					
High instructor-student ratios hamper gender equity					
Well-organized and tidy classrooms promote gender equity					
Teacher-centred approaches promote gender equity					
Guidance and counselling promote gender equity					
Proper language use and rewards promote gender equity					
School-related violence affects gender equity					

Section E: Strategies to Improve TVET policies and Boost Access to and Participation in TVET

5.1 In your view, what strategies can be used to improve enrolment and participation of students in TVET? (Suggest at least 3)

Thank you very much

Interview Guide for District Leaders

Gender..... District..... Years of Service.....

Section A: Students' Enrolment and participation in TVET

1.1 In your view, what strategies can be embraced to enhance enrolment, and retention of students in TVET (Suggest three)

Section B: Policy Advocacy and Gender Equity

2.1 In your view, what strategies are employed to ensure the proper implementation of TVET and gender policies?

2.2 How can government and political will enhance proper policy dissemination and implementation?

2.3 As a district leader, what strategies are you employing to promote TVET advocacy?

2.4 How have those strategies contributed to gender equity? What other strategies can be utilised?

Section C: Financial resources

3.1 What is your view on the TVET budget and its contribution to gender equity?

3.2 What funding strategies are VET institutes employing to promote gender equity in TVET?

3.3 What challenges still exist in financing TVET in Uganda? How can they be addressed?

Section D: Learning Environments

4.1 In your view, what strategies have been employed to improve the TVET learning environment?

4.2 What barriers exist in the learning environment that hampers gender equity?

4.3 How can trained and motivated human resources promote gender equity?

4.4 What teaching-learning approaches and resources can instructors use to promote gender equity?

4.5 How do sanitation and accommodation facilities contribute to gender equity in TVET?

4.6 How can co-curricular activities be utilized to promote gender equity in TVET?

Section E: Strategies to Improve TVET policies and Boost Access to and Participation in TVET

5.1 In your view, what strategies can be used to improve enrolment and participation of students in TVET?

Thank you very much

Interview Guide for Ministry Officials (MoES and MOGLSD)

Gender..... Years of service.....

Section A: Gender policies and students' enrolment and participation in TVET

1.1 In your view, what gender policies have been implemented in TVET?

1.2 How have those policies contributed to gender equity in TVET?

Achievements

1.3 What barriers still hinder equitable education access and participation in TVET?

1.4 How can those barriers be addressed?

Section B: Policy Advocacy and Gender Equity

2.1 In your view, what strategies are employed to ensure the proper implementation of TVET and gender policies?

2.2 How can government and political will enhance proper policy dissemination and implementation?

2.3 What strategies is the ministry employing to promote TVET advocacy?

2.4 How have those strategies contributed to gender equity?

Section C: Financial Resources and Gender Equity

- 3.1 In your view, is the TVET budget sufficient to promote gender equity?
- 3.2 What funding strategies are ministries and TVET institutions employing to promote gender equity?
- 3.3 How are those strategies contributing to gender equity in TVET? Suggest other strategies that could be used.

Section D: Learning Environments and Gender Equity

- 4.1 In your view, what strategies have been employed to improve the TVET learning environment?
- 4.2 What barriers still exist in the learning environments that hamper gender equity?
- 4.3 How can sufficient and motivated human resources promote gender equity?
- 4.4 What teaching-learning approaches can instructors use to promote gender equity?
- 4.5 How do sanitation and accommodation facilities contribute to gender equity in TVET?
- 4.6 How can co-curricular activities be utilized to promote gender equity in TVET?
- 4.7 In your view, what strategies can be used to improve the enrolment and retention of students in TVET?

Section E: Strategies to Improve TVET policies and Boost Access to and Participation in TVET

5.1 In your view, what strategies can be used to improve the enrolment and retention of students in TVET?

Thank you very much

Interview Guide for Civil Society Gender Advocates

Gender..... District..... Years of Service.....

Section A: Gender policies and students' enrolment and participation in TVET

1.1 In your view, what gender policies have been implemented in TVET?

1.2 How have those policies contributed to gender equity in TVET?

Achievements

1.3 What barriers still hinder equitable education access and participation in TVET?

1.4 How can those barriers be addressed?

Section B: Policy Advocacy and Gender Equity

2.1 In your view, what strategies are employed to ensure the proper implementation of TVET and gender policies?

2.2 How can government and political-will enhance proper policy dissemination and implementation?

2.3 What strategies is your organisation employing to promote TVET advocacy?

2.4 How have those strategies contributed to gender equity?

Section C: Financial Resources and Gender Equity

3.1 In your view, is the TVET budget sufficient to promote gender equity?

3.2 What funding strategies are the ministry and TVET institutions employing to promote gender equity in TVET?

3.3 How can the aforementioned strategies contribute to gender equity in TVET?

Section D: Learning Environments and Gender Equity

4.1 In your view, what strategies have been employed to improve the TVET learning environment?

4.2 What barriers still exist in the learning environments that hamper gender equity?

4.3 How can sufficient and motivated human resources promote gender equity?

4.4 What teaching-learning approaches can instructors use to promote gender equity?

4.5 How do sanitation and accommodation facilities contribute to gender equity in TVET?

4.6 How can co-curricular activities be utilized to promote gender equity in TVET?

Section E: Strategies to Improve TVET policies and Boost Access to and Participation in TVET

5.1 What strategies can be embraced to enhance enrolment, participation and retention of students in TVET?

Thank you very much

Interview Guide for Role-model Instructors

Institution's code..... District..... Trade.....

Section A: Gender policies and students' enrolment and participation in TVET

- 1.1 What gender policies do you know about?
- 1.2 How have these policies contributed to your participation in TVET?
- 1.3 In your view, how has your participation in TVET encouraged other students to participate in TVET?

Section B: Financial Resources and Gender Equity

- 2.1 How was your studying in TVET funded?
- 2.2 What was the contribution of that funding to your participation and retention in TVET?
- 2.3 What motivates you to participate in TVET?

Section C: Learning Environments and Gender Equity

- 3.1 In your view, how does the TVET learning environment contribute to students' participation and retention in TVET?
- 3.2 What barriers still exist in the learning environments that hamper gender equity?
- 3.3 What strategies are you employing to motivate students to stay enrolled in TVET?
- 3.4 Do you participate in any co-curricular activities? Which activity specifically?
- 3.5 In your view, how can co-curricular activities contribute to students' participation and retention in TVET?

Section D: Strategies to Improve TVET policies and Boost Access to and Participation in TVET

- 4.1 In your view, what strategies can be embraced to enhance enrolment, participation and retention of students in TVET (Suggest three)

Thank you very much

Interview Guide for Role-model Students

Institution's code..... District..... Gender.....
Trade.....

Section A: Gender policies and students' enrolment and participation in TVET

- 1.1 What gender policies do you know about? (Knowledge of TVET of policies)
- 1.2 How have these policies contributed to your participation in TVET? (Enrolment, retention)
- 1.3 In your view, how has your participation in TVET encouraged other students to participate in TVET? (are you a role model?)

Section B: Financial Resources and Gender Equity

- 2.1 Who is paying your school fees?
- 2.2 How do you meet the rest of your financial needs?
- 2.3 In your view, how does funding contribute to your participation and retention in TVET?
- 2.4 What motivates your participation and retention in TVET?

Section C: Learning Environments and Gender Equity

- 3.1 How does the TVET learning environment contribute to students' participation and retention in TVET?
- 3.2 What barriers exist in your learning environments that affect your participation and retention in TVET?
- 3.3 Are girls in your class treated in the same way as boys?

3.4 What teaching methods have encouraged your participation in TVET and why?

(Learner or teacher-centred)

3.5 How do the TVET curriculum and textbooks encourage you to participate well in TVET?

3.6 Who is your role model? How has she/he contributed to your participation and retention in TVET?

3.7 What co-curricular activities do you have in your institute? Which activities do girls engage in?

3.8 In your view, how have these co-curricular activities contributed to your participation and retention in TVET?

Section D: Strategies to Improve TVET policies and Boost Access to and Participation in TVET

4.1 In your view, what strategies can be embraced to enhance enrolment, participation and retention of students in TVET (Suggest three)

Thank you very much

Appendix D: Learning Environment Observation Checklist

Institution's code..... District.....

TVET trade..... Instructor's Gender..... Attendance: F ___ M ___

A Outside Class Learning Environment				
	Indicators	Available/taking place	Up-to-date & Functional	Remarks
1	Spacious/safe institution			
2	Physical location			
3	Adequate classroom/workshops			
4.	Gender advocacy messages			
5	Boys & Girls' toilets and bathrooms			
6	Medical facilities			
7	Fire extinguishers			
8	Teachers' toilets			
9	Dormitory/hostel facilities			
10	Kitchen and Dining hall			
11	Library/bookstore			
12	Flowing Water			
13	Instructors' housing			
14	Co-curricular facilities			
15	Gender unit/ department			
B Inside Classroom Learning Environment				
	Indicators	Available/Taking place	Up-to-Date & Functional	Remarks
1	Well-arranged Furniture and equipment			
2	Class rules displayed			
3	Teaching-learning resources			
4	Teacher-centred methods			
5	Learner-centred methods			
6	Appropriate Language use			
7	Students' participation in			

	lessons			
8	Teacher-student interactions			
9	Rewards/Motivation			
10	Students- Instructor Ratio			
11	Equal distribution of teacher's energy			
12	Guidance and counselling			
Co-curricular Activities Observation				
	Indicators	Activities	Available	Remarks
1	Activities that promote gender equity			
2	Male-oriented activities			
3	Female-oriented activities			
4	Club activities to promote gender equity			
5	No co-curricular activities for females			
6	No CCA for males			

Thank you very much

APPENDIX E: APPROVAL OF RESEARCH PROPOSAL

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke

Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 810901 Ext. 57530

Internal Memo

FROM: Dean, Graduate School

DATE: 11th April, 2019

TO: Ms. Nganda A. Trevelynn
C/o Educational Foundations Dept.
Kenyatta University

REF: E83EA/33903/15

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

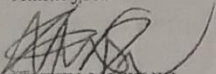
This is to inform you that Graduate School Board at its meeting of 27th March, 2019 approved your Research Proposal for the Ph.D. Degree, entitled "Contribution of Gender Policies in Vocational Education and Training to Gender Equity of Students in Central Region, Uganda".

You may now proceed with your Data collection, subject to clearance with the Executive Secretary, National Council of Science & Technology.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed supervision Tracking Forms per semester. The form has been developed to replace the progress Report Forms. The Supervision Tracking Forms are available at the University's Website under Graduate School webpage downloads.

By copy of this letter, the Registrar (Academic) is hereby requested to grant you substantive registration for your Ph.D. studies.

Thank you.


REUBEN MURIUKI
FOR: DEAN, GRADUATE SCHOOL

c.c. Registrar (Academic) Att. Ms. Lucy Njenga
Chairman, Department of Educational Foundations

Supervisors:

1. Dr. Francis Karimi
C/o Educational Foundations Dept.
KENYATTA UNIVERSITY
2. Dr. Salome Nyambura
C/o Educational Foundations Dept.
KENYATTA UNIVERSITY

RM/cao

APPENDIX F: RESEARCH AUTHORISATION LETTER

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke

Website: www.ku.ac.ke

OUR REF: E83EA/33903/15

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 57530

Date: 11th April, 2019

The Executive Secretary,
National Council of Science & Technology
P.O. Box 6284,
KAMPALA

Dear Sir/Madam,

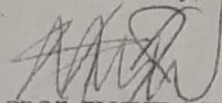
RE: RESEARCH AUTHORIZATION FOR MS. NGANDA T. AIDAH REG. NO. E83EA/33903/15

I write to introduce Ms. Aidah who is a Postgraduate Student of this University. She is registered for Ph.D. Degree programme in the Department of Educational Foundations in the School of Education.

Ms. Aidah intends to conduct research for a Ph.D. thesis entitled, "Contribution of Gender Policies in Vocational Education and Training to Gender Equity of Students in Central Region, Uganda".

Any assistance given will be highly appreciated.

Yours faithfully,


PROF. ELISHIBA KIMANI
DEAN, GRADUATE SCHOOL

rm/cao

ETHICAL APPROVAL


MBARARA UNIVERSITY OF SCIENCE AND TECHNOLOGY

P.O. Box 1410, Mbarara Uganda. Tel: +256 485433795; Fax: +256 4854 20782

RESEARCH ETHICS COMMITTEE

 E-mail: sec_rec@must.ac.ug

Our Ref: MUREC 1/7

Date: July 2, 2019

 Ms Nganda Aidah Trevelyn
 Principal Investigator

Re: "Contribution of gender policies in vocational education and training to gender equity of students in central Region, Uganda" 11/05-18

 Type: Initial Application
 Protocol Amendment
 Letter of Amendment (LOA)
 Continuing Review
 Material Transfer Agreement
 Other, specify: _____


Reference is made to the above protocol which was resubmitted to the Research Ethics Committee for reconsideration and approval under expedited review process.

 It is noted that you have addressed all the concerns earlier raised by the Committee. I am pleased to inform you that your study has been approved for a period of one year from **July 2, 2019 up to July 1, 2020**.

As Principal Investigators of the research, you are responsible for fulfilling the following requirements of approval:

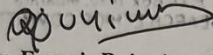
1. All co-investigators must be kept informed of the status of the research.
2. Changes, amendments, and addenda to the protocol or the consent form must be submitted to the REC for review and approval **prior** to the activation of the changes. The REC application number assigned to the research should be cited in any correspondence.
3. Reports of unanticipated problems involving risks to participants or other must be submitted to the REC. New information that becomes available which could change the risk: benefit ratio must be submitted promptly for REC review.
4. Only approved consent forms are used in enrolment of participants. All consent forms signed by subjects and/or witness should be retained on file. The REC may conduct audits of all study records, and consent documentation may be part of such audits.
5. Regulations require review of an approved study not less than once per 12-month period. **Therefore, a continuing review application must be submitted to REC eight weeks prior to the above expiration date of July 1, 2020 in order to continue the study beyond the approved period.** Failure to submit a continuing review application in timely fashion may result in suspension or termination of the study, at which point new participants may not be enrolled and currently enrolled participants must be taken off the study.

6. You are required to register the research protocol with the Uganda National Council for Science and Technology (UNCST) for final clearance to undertake the study in Uganda.

The following is the list of documents approved in the application:

Document	Language	Version
Proposal	English	Version 2
Data Collection tools	English	June 2019
Consent form	English	June 2019

I wish you all the best.


Dr. Francis Bajunirwe
CHAIR,
MUST RESEARCH ETHICS COMMITTEE



APPENDIX G: RESEARCH PERMITS

APPROVAL TO CONDUCT STUDY IN UGANDA



Uganda National Council for Science and Technology
(Established by Act of Parliament of the Republic of Uganda)

Our Ref: SS 5052

15th August 2019

Ms. Aidah Trevelynn Nganda
Kyambogo University
Kampala

Dear Ms. Nganda,

Re: Research Approval: Contribution of Gender Policies in VET to Promotion of Gender Equity of Students in Central Region, Uganda

I am pleased to inform you that on **23/07/2019**, the Uganda National Council for Science and Technology (UNCST) approved the above referenced research project. The Approval of the research project is for the period of **23/07/2019** to **23/07/2020**.

Your research registration number with the UNCST is **SS 5052**. Please, cite this number in all your future correspondences with UNCST in respect of the above research project.

As Principal Investigator of the research project, you are responsible for fulfilling the following requirements of approval:

1. All co-investigators must be kept informed of the status of the research.
2. Changes, amendments, and addenda to the research protocol or the consent form (where applicable) must be submitted to the designated Research Ethics Committee (REC) or Lead Agency for re-review and approval **prior** to the activation of the changes. UNCST must be notified of the approved changes within five working days.
3. For clinical trials, all serious adverse events must be reported promptly to the designated local IRC for review with copies to the National Drug Authority.
4. Unanticipated problems involving risks to research subjects/participants or other must be reported promptly to the UNCST. New information that becomes available which could change the risk/benefit ratio must be submitted promptly for UNCST notification after review by the REC.
5. Only approved study procedures are to be implemented. The UNCST may conduct impromptu audits of all study records.
6. An annual progress report and approval letter of continuation from the REC must be submitted electronically to UNCST. Failure to do so may result in termination of the research project.

LOCATION/CORRESPONDENCE

Plot 6 Kimera Road, Ntinda
P. O. Box 6884
KAMPALA, UGANDA

COMMUNICATION

TEL: (256) 414 705500
FAX: (256) 414-234579
EMAIL: info@uncst.go.ug
WEBSITE: <http://www.uncst.go.ug>



Uganda National Council for Science and Technology

(Established by Act of Parliament of the Republic of Uganda)

Below is a list of documents approved with this application:

	Document Title	Language	Version	Version Date
1.	Research proposal	English	N/A	February 2019
2.	Research instruments	English	N/A	February 2019
3.	Informed consent document	English	N/A	N/A

Yours sincerely,

Isaac Makuwa

For: Executive Secretary

UGANDA NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Copied to: Chair, Mbarara University of Science and Technology, Research Ethics Committee

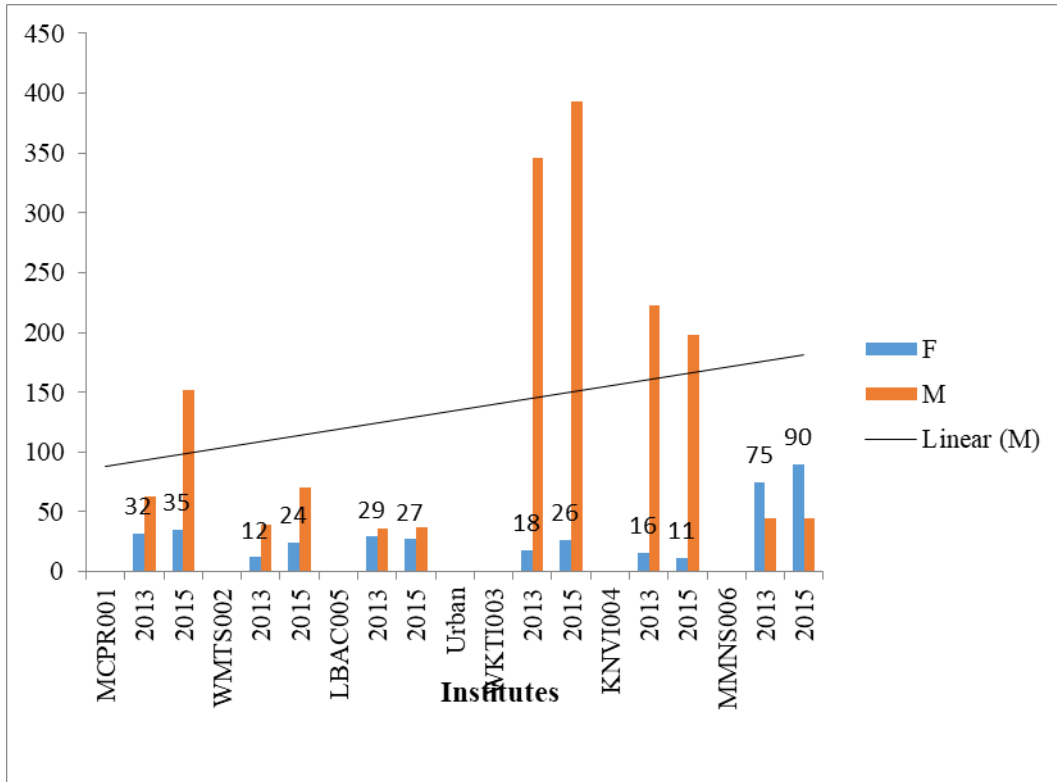
LOCATION/CORRESPONDENCE

Plot 6 Kimera Road, Ntinda
P. O. Box 6884
KAMPALA, UGANDA

COMMUNICATION

TEL: (256) 414 705500
FAX: (256) 414-234579
EMAIL: info@uncst.go.ug
WEBSITE: <http://www.uncst.go.ug>

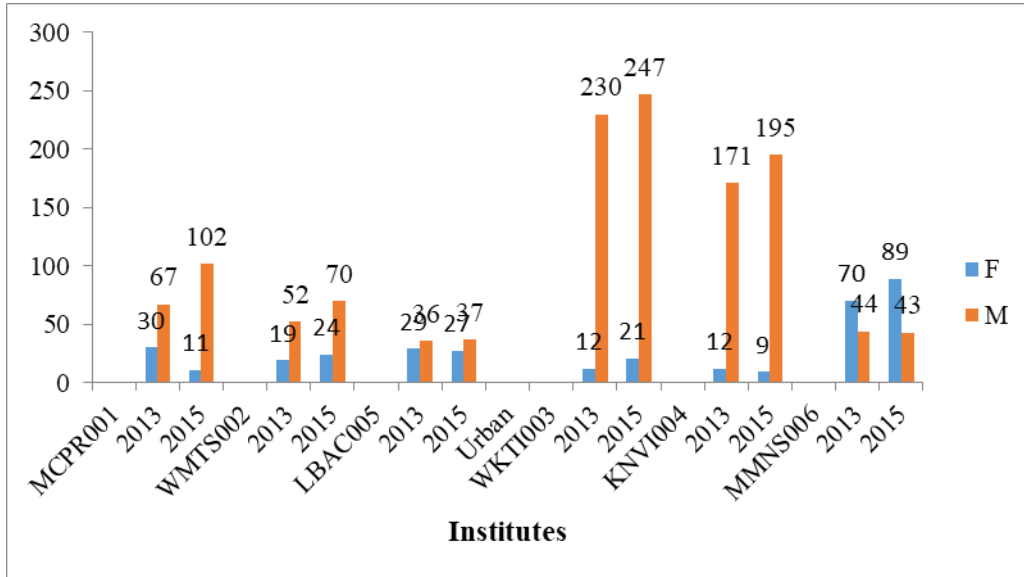
Appendix H: Gender-Based Enrolment Trends between 2013 And 2017



F -Females

M -Males

Appendix I: Summary Of Gender-Based Transition Between 2013 And 2017



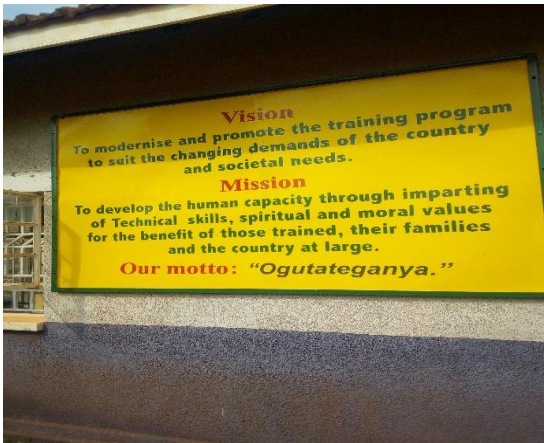
APPENDIX J: PICTURES SHOWING VARIOUS ATTRIBUTES OF THE LEARNING ENVIRONMENT



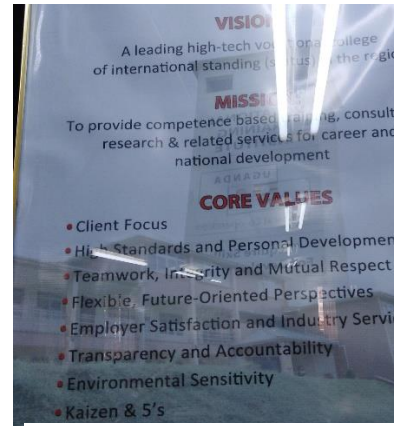
Picture 1: Photo taken at WKT1003 showing team-work and inequity in gender roles



Picture 3: Photo taken at WMTS002 showing some club activities



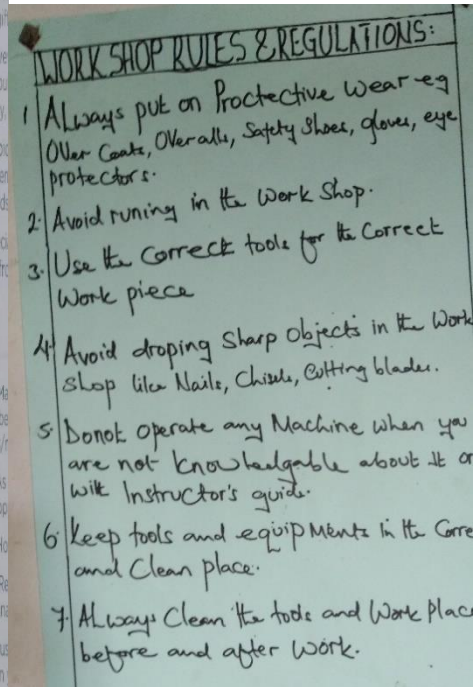
Picture 2: Photo taken at WKT1003 showing TVET advocacy messages through school mission and visions



Picture 4: Photo taken at KNVTI004 showing school mission and vision



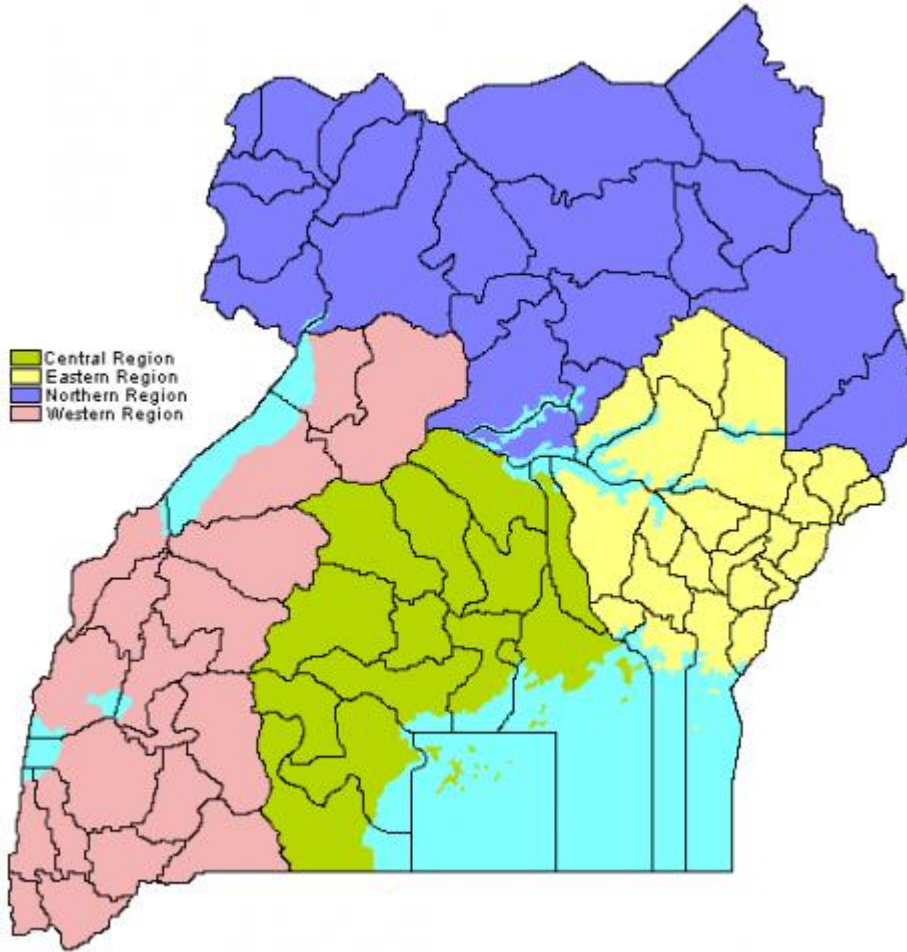
Picture 5: Photo taken at MCPR001 showing advocacy for HIV/AIDS



Picture 6: Photo taken at WMTS002 showing workshop rules

APPENDIX K: LIST OF PSEUDO NAMES AND CODES

Pseudo Name	Gender/TVET field	Venues	Date
Atiku	Male student, AHS	MCPR001, Mubende	August 2019
Moselo	Male student, AHS	WMTS002, Wakiso	August 2019
Ms Jadika	Female instructor, BCP	WMTS002, Wakiso	August 2019
Ms Harito	Female instructor, BCP	WKTII003, Wakiso	August 2019
Akol	Female student, EI	KNVI004, Kampala	August 2019
Luket	Male student, Nursing	MMNS006, Masaka	September 2019
Ms. Feni	Female official	MoGLSD, Kampala	September 2019
Ms Abinu	Lady district official	DL, Masaka	August 2019
Oumol	Male student, TGD	LBAC005, Gomba	September 2019
Ms Pesi	Female advocate	CSO, Mubende	August 2019
Mr Winok	Male IL	KNVI004, Kampala	August 2019
Mr Dekem	Male IL	MCPR001, Mubende	August 2019
Ms Taweno	Female advocate	CSO, Kampala	October 2019
Ms Yadak	Female advocate	CSO, Kampala	October 2019
Ogumu	Male student, Nursing	MMNS006, Masaka	September 2019
Atipo	Female student, EI	KNVI004, Kampala	August 2019
Agupo	Female student, AHS	MCPR001, Mubende	August 2019
Mr Okullom	Male IL	WMTS002, Wakiso	August 2019
Mr. Mumiso	Male DL	Masaka	August 2019
Mr. Lumok	Male instructor and HoD	WKTII003, Wakiso	August 2019
Mr. Bagom	Male advocate	CSO, Gomba	September 2019
Mr. Mpaso	Male official	MoES, Kampala	October 2019
Ms. Kasamu	Female advocate	CSO, Masaka	September 2019
Codes for Institutes		Location	
MCPR001		TVET institute, Mubende Uganda	
WMTS002		TVET institute, Wakiso Uganda	
WKTII003		TVET institute, Wakiso Uganda	
KNVI004		TVET institute, Kampala Uganda	
LBAC005		TVET institute, Gomba Uganda	
MMNS006		TVET institute, Masaka Uganda	

APPENDIX L: THE MAP SHOWING STUDY LOCALE IN UGANDA

Source: Uganda National Web Portal