RELATIONSHIP BETWEEN BUNGOMA COUNTY GOVERNMENT BURSARY FUND AND STUDENTS' ACCESS TO PUBLIC VOCATIONAL TRAINING CENTRES IN BUNGOMA COUNTY, KENYA

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A Thesis Submitted In Partial Fulfilment of the Requirements for the Award of the Degree of Master of Education in Economics of Education and Management of Masinde Muliro University of Science and Technology

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DECLARATION

This thesis is my original work prepared with no other than the indicated sources and support and has not been presented elsewhere for a degree or any other award.

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CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance of Masinde Muliro University of Science Technology a research thesis entitled "**Relationship between Bungoma County Government Bursary Fund and Students' Access to Public Vocational Training Centers in Bungoma County, Kenya**."

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DEDICATION

This thesis is dedicated to my family: my husband David and my daughter Agnes.

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ABSTRACT

The county governments have been spending a lot of money on public Vocational Training Centers trainees in the form of a bursary. It was on this basis that the purpose of the current study was to establish the relationship between the amount of the Bungoma County Government Bursary Fund and students' access to public Vocational Training Centers in Bungoma County. The study had three objectives.: to determine the trends of the amount of the Bungoma County Government Bursary Fund and access, to determine the relationship between the amount of the Bungoma County Government Bursary Fund and gross enrolment, and to determine the relationship between the amount of the Bungoma County Government Bursary Fund and completion rates in public Vocational Training Centres in Bungoma county between 2014 to 2019. In line with the purpose and objectives of the study, the correlational research design was adopted and it was guided by the socialist economics of education theory and the principle of demand and supply as the theoretical framework. Using the table for sample size determination by Krejcie and Morgan, the study selected 48 out of 54 Vocational Training Centers' managers (also called principal instructors) 4 of 4 Sub County Vocational Education and Training Officers, and 358 out of 3578 Vocational Training Centers' trainees. The study employed the use of a stratified proportionate random sampling technique. Data was then collected using questionnaires, interviews, and document analysis. The test-retest method was used whereby, a pilot study was conducted on one of the Vocational Training Centers that was not part of the study sample to ascertain that the research instruments were reliable (spearman rank order correlation r(0.75)). Construct and content validity were established to determine the validity of research instruments. The trends of the amount of the Bungoma County Government Bursary Fund and access (gross enrolment and completion rates) were found to have fluctuated in sampled Vocational Training Centers during the period under study. The strength of the correlation was established using Karl Pearson's product-moment correlation whereby, the study established that the amount of the Bungoma County Government Bursary Fund had a weak positive correlation with gross enrolment and a very weak positive correlation with completion rates. Using the R^2 obtained from the model, it was also established that the amount of the Bungoma County Government Bursary Fund explains 2.7% of the variation in gross enrolment and 5.1% of completion rates. The null hypotheses were rejected by the study and the following recommendations were made by the study: one, that the system of allocation of the Bungoma County Government Bursary Fund be changed to appreciate the needs of trainees, two, that the amount of the Bungoma County Government Bursary allocated per trainee be increased to cover the full cost of the course and three, that the fund be expanded to cater for examination fees.

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LIST OF ABBREVIATIONS AND ACRONYMNS

Agri-B: Agri-Business

Arch.: Welding Architectural Welding

Ave.: Average

BBS: Bangladesh Bureau of Statistics

BCGBF: Bungoma County Government County Bursary Fund

Carpentry and J.: Carpentry and Joinery

CDF: Constituency Development Fund

CGBF: County Government Bursary Fund

CR.: Rate Completion Rate

E. Wiring: Electrical Wiring

F. Tech.: Food Technology

G. making: Garment making

GOK: Government of Kenya

H. Dressing: Hair Dressing

ICT: Information Communication Technology

KCSE: Kenya Certificate of Secondary Education

KNEC: Kenya National Examination Council

MCA.: Member of County Assembly

MOEST: Ministry of Education, Science and Technology

Motor V. Mech: Motor Vehicle Mechanics

NCCK: National Council of Churches of Kenya

NCVER: National Centre for Vocational Education Research

N.D.: No date

NGBF: National Government Bursary Fund

NITA: National Industrial Training Agency

NVTI: National Vocational Training Institute

Plumbing & P.F.: Plumbing and Pipe Fitting

REB: Research and Evaluation Branch

RoK: Republic of Kenya

SCVETOs: Sub County Vocational Educational Training Officers.

SPSS: Statistical package for social studies

TVET: Technical and Vocational Education and Training

U.L. Data.: Un Labelled Data

UNDP: United Nations Development Program

UNESCO: United Nations Educational, Scientific and Cultural Organization

UNEVOC: Unesco and vocational education

VET: Vocational Education and Training

VPs: Village Polytechnics

VTCs.: Vocational Training Centers

YPs: Youth Polytechnics

OPERATIONAL DEFINITION OF TERMS

The following is a brief description of how certain terms will be used in the current study.

Access: to enroll or complete a course in vocational training centers (VTCs) without being barred. Completion rates will be measured using a formula that was borrowed from Sauro and Lewis (2016).

Bungoma County Government Bursary Fund (BCGBF): money awarded as payment of tuition to trainees of VTCs in Bungoma County.

Completion: number of those who sat the national exam (National Industrial Training Agency exam or the Kenya National Examination Council exam) at the end of a given course in a given grade.

Completion rate: number of cohorts who completed the national exam (National Industrial Training Agency exam or the Kenya National Examination Council exam) in a course enrolled divided by the total number of cohort enrolment.

Enrolment: number of trainees registered in a VTC in a given year.

Gross enrolment: total number of trainees who enrolled, in total disregard of their ages.

Public Vocational Training Centers (VTCs): government-sponsored institutions that were formerly referred to as, youth polytechnics or village polytechnics and are now referred to as Vocational Training Centres/Vocational Training Colleges.

Relationship: association between the independent variable and dependent variable.

Trends: consistent increase or decrease in the amount of Bungoma County Government Bursary Fund, enrolment, and completion rates.

CHAPTER ONE

INTRODUCTION

1.1. Overview of chapter one.

This chapter of the study discusses the background to the study, statement of the problem, purpose of the study, objectives of the study, research question, research hypotheses, justification of the study, significance of the study, scope of the study, limitations of the study, assumptions of the study, theoretical framework and the conceptual framework.

1.2. Background to the study

United Nations Educational, Scientific and Cultural Organization (UNESCO, 2012) envisioned that enrolment rates in tertiary institutions would be more than double between 2000 to 2020 in Africa. In line with these, the government of Kenya had envisioned enrolling many youths (20%) in TVET by 2030 (Maina, 2019). However, enrolment into Technical and Vocational Education and Training (TVET) institutions was still low (0.5% in 2019) (Mbuva, 2019). For this reason, many initiatives have since been put in place to address this challenge key among them being government financial support to the TVET sector.

It is important to note that, government investment in TVET has had both success and failure stories for instance, in Bangladesh there was a reduction in the unemployment rate (4.5%) (Haolader, 2015), while, a study by Agrawal (2013), found that the economic failure rate of those who joined TVET was high. The Technical and Vocational Education and Training (TVET) institutions in Kenya are basically, institutions that offer technical courses and they include technical training

colleges, national polytechnics, technical and vocational colleges (formerly known as technical training colleges), and vocational training colleges/centers (formerly known as youth polytechnics) (RoK, 2023). The focus of the current study was specifically on VTCs (formerly known as youth polytechnics). These were devolved to the county government and have since been receiving financial support from this level of government. The principle of demand and supply states that, when all things are constant, an increase in commodity prices, should reduce the quantity demanded of that commodity and vice versa (Mankiw, 2007). In the school scenario, this theory implies when all things are constant, an increase in tuition fees would lead to a reduction in the number of those who are willing and able to enroll in education institutions and when the tuition fees are lowered, the number of those who are willing and able to enroll into the institutions increases.

Bursary is one way through which the government creates demand in the Technical and Vocational Education and Training (TVET) sector and to a large extent on VTCs. Bursary, unlike other forms of funding, is given to someone to reduce the amount of tuition that they have to pay (Hornby, 2015). For this reason, how bursaries are issued varies. In England, higher education students from needy economic backgrounds receive up to 300 pounds (Callender, 2010). The Chinese government pays tuition for all vocational school students (Kuczera and Field, 2010). The case was different in Kiribati which uses intake quotas (Majumdar and Teaero, 2014). While the Ghanaian government used a skills development fund (Republic of Ghana, 2021).

Thus, the issuance of bursaries varied from one country to the other, based on the purpose for which they were created and the target groups that they were

intended for. In Kenya for instance, there were various forms of bursaries, the two notable ones were: the Constituency Development Fund (CDF) which was an initiative of the national government, and the County Government Bursary (CGB), which was an initiative of county governments. The focus of the current study was on the Bungoma County Government Bursary Fund (BCGBF).

Bursaries have in some cases faced challenges. For instance, a study by Baikuntha (2020) found that in Nepal, the amount that was allocated by the government to the TVET sector was too low to enhance sustainable development. The same was the case in Palestine (Jweiles, 2017) and in the West African region (Osidipe, 2017). This was also the case in Kenya, as was evident in the Economic Survey report data which showed a fluctuation in the county government expenditure on education between the 2014/2015 to 2018/2019 financial years as follows: (19,952.39), (21,685.06), (24,609.43), (23,754.34) and (36,745.37) million shillings respectively (RoK, 2023). The fluctuation raised a great concern for the current study. despite these challenges, bursaries have been influential in the creation of access to many educational institutions for instance, a study by Maina (2019), established that an increased amount of bursary on TVET institutions in the form of bursary contributed to increased performance by 0.318.

Indeed, there has been increased demand for TVET education in Kenya as was witnessed in 2020 among the 2019 Kenya Certificate of Secondary Education (KCSE) graduates (200,000 candidates) who opted to join TVET institutions despite having qualified to join university (Tanui, 2020). This prompted the current study to be undertaken to determine the relationship between the amount of Bungoma County Government Bursary Fund (BCGBF) and student access to public

Vocational Training Centers (VTCs) in Bungoma County. Moreover, the county government of Bungoma has been giving financial aid to public VTC trainees in the form of bursaries since the year 2014 to increase access to these institutions of learning. However, a study by Wasike et al. (2020a) established that trainees of VTCs in Bungoma County may have been getting more funding from the Constituency Development Fund (CDF) (74.5%) than from the Bungoma County Government Bursary Fund (BCGBF) (21.8%). This raised a concern for the current study because VTCs were devolved and made a mandate of the county governments by the constitution of Kenya (RoK, 2010).

The main purpose why bursaries are issued is to enable learners from poor backgrounds to access education or to enable them to enroll in education institutions (Chiu and Chen, 2023). However, at inception, the allocations of the amount of Bungoma County Government bursary per VTC applicant were done at the ward level through the office of the area Member of County Assembly (MCA). This gave rise to disparities in the amount of bursary that was received per applicant, whereby, in some instances, trainees who were enrolled in the same VTC, for the same course in the same year, received varied amounts of bursary depending on several factors, key among them was whether the trainee was a resident of the awarding ward. For this reason, there might have been some deserving applicants who may have been left out during the process of allocation.

Enrolment into Vocational Training Centres (VTCs) was still wanting. The calculated amounts of the provisional national statistics on enrolment and the number of public VTC institutions in Kenya as per the Economic Survey 2023 shows that on average, each public VTC had an enrollment of 116 trainees in (2018),

117 trainees in (2019), 129 trainees in (2020), 158 trainees in (2021), 154 trainees in (2022) (RoK, 2023). This number was generally low and not economically sustainable.

Various studies have been conducted to establish the relationship between bursaries and access to various institutions of learning, some of which were reviewed in the current study. For instance, in Taiwan, a study by Chiu and Chen (2023), showed that bursaries had a positive impact. However, the dropout rates were still high (37%) in the United States of America (USA) (Dynarski, 2007) and (10.7%-22%) in China (Yi et al., 2015). Besides, Somaggio (2021), estimated that 71% of those who dropped out from one course, enrolled into another in the TVET institutions.

In Kenya, studies that have been conducted to determine the relationship between bursary and enrolment arrived at contradicting findings, some of which were as follows: Ngugi and Muthima (2017), established that there was a steady increase in enrolment in TVCs while, Wanjala and Ali (2017) and Tanui (2016), established that enrolment rates had remained low. Away from these three studies, a study by Kitui (2015), established that enrolment was below the capacity of enrolment (16% to 20 %) and that it fluctuated. Ngugi and Muthima (2017), unlike the other four studies, established that there is gender disparity in enrolment.

On completion, studies that were reviewed under the current study included: Kiplagat et al. (2016), and Akinyi et al. (2021), whose studies established that the completion rates in VTCs were low. Unlike these studies, a study by Obwari (2013), found that bursaries increased graduation rates while, a study by Dzuya (2020), established that the bursaries were inadequate. These studies differed from that of

Rukwaro et al. (2017), which established that there was a negative relationship between government initiatives and access.

The findings from the studies that were reviewed under the current study were contradictory. While some showed a positive relationship between bursaries and access, others showed gender disparity and fluctuations in the amount of bursaries awarded. The reviewed studies were similar to the current study in the sense that they were conducted to investigate the relationship between bursary and access. However, they were different from the current study in terms of locale, methodology, and purpose for which they were conducted. The studies by Wasike et al. (2020a), and Kitui (2015), were conducted in Bungoma County. However, while the study by Wasike et al. (2020a), was centered around TVET in general and not specifically on VTCs, the study by Kitui (2015), was focused on one sub-county out of the nine sub-counties, unlike the current study whose focus was on all the nine sub-counties and specifically on VTCs. This raised the need for the current study to be conducted to establish the relationship between the amount of BCGBF and student access to vocational training centers in Bungoma County.

1.3. Statement of the problem

TVET institutions are more expensive to set up and manage because of their practical nature, the UNESCO Vocational Education (UNEVOC-UNESCO, 2017). Therefore, it would naturally be expected that the government would invest relatively, more money in VTCs than in mainstream education. However, a report by the Economic survey showed that, TVET expenditure was expected to decrease by 1.6% and that there was fluctuation in the county government expenditure on education between the 2014/2015 to 2018/2019 financial years (RoK, 2023). A

study by Wasike et al. (2020a), also found that VTC institutions in Bungoma County were only receiving 21.8% from the BCGBF in terms of bursary.

This percentage amount was low as it would not be enough to cater for both tuition and exams for the VTC trainees. Moreover, the fluctuation in the county government expenditure raised a great concern for the current study, based on the fact that VTCs were a mandate of the county government (RoK, 2010). As such, they were to be given priority when it came to county government expenditure on education.

The county government of Bungoma has been giving bursaries to VTC trainees since 2014, to increase access to these institutions of learning. The Economic Survey report showed that County government expenditure on education between the 2014/2015 to 2018/2019 financial years was between 19,952.39 million shillings and 36,745.37 million shillings (RoK, 2023). However, enrolment in Bungoma County VTCs was (16%-20%) of their actual capacity (Kitui, 2015). This raised a great concern and the need to establish the relationship between the amount of BCGBF and students' access to VTCs.

Moreover, at inception, the allocation of the amount of BCGBF per applicant was done at ward level thus raising issues of disparity in the amount that was received by the beneficiaries in one given VTC institution. There was thus, a need to establish how the variation in the amount of bursary allocated to trainees related to enrolment and completion rates in public VTCs in Bungoma County.

Furthermore, studies that were reviewed under the current study yielded contradictory findings on the relationship between bursary and access, and from the

review, the current study had yet to come across a study that sought to establish the relationship between the amount of a given county government bursary and students access to public VTCs. Thus, this created the need to conduct the current study.

1.4. Purpose of the study

The purpose of the study was to establish the relationship between the amount of the Bungoma County Government Bursary Fund (BCGBF) and students' access to public vocational training centers in Bungoma County, Kenya.

1.5. Objectives of the study.

i. To establish the trends of the amount of Bungoma County Government Bursary Fund (BCGBF) and students' access to public VTCs in Bungoma County between 2014 to 2019.

ii. To determine the relationship between the amount of BCGBF and gross enrolment in public VTCs between 2014 to 2019.

iii. To determine the relationship between the amount of BCGBF and completion rates in public VTCs between 2015 to 2019.

1.6. Research question

i. What were the trends in the amount of the Bungoma County Government Bursary Fund (BCGBF) and students' access to public VTCs in Bungoma County between 2014 to 2019?

1.7. Research hypotheses

The study was guided by the following hypotheses:

*H*o1 There is no statistically significant relationship between the amounts of BCGBF and gross enrolment in public VTCs between 2014 to 2019.

*H*o2 There is no statistically significant relationship between the amounts of BCGBF and completion rates in public VTCs between 2015 to 2019.

1.8. Justification of the study

Village polytechnics/Youth polytechnics –now called Vocational Training Centers (VTCs)- were conceptualized to reduce youth unemployment (Bwisa, 2014). The VTCs were thus, identified as key drivers of Vision 2030 (Muriithi, 2013). For this purpose, the government came up with policies that would increase their access. Such policies included: the introduction of bursaries, for instance, the Bungoma County Government Bursary Fund (BCGBF) for the Vocational Training Centers (VTCs). The county government expenditure on education between the 2014/2015 to 2018/2019 financial years was as follows: (19,952.39), (21,685.06), (24,609.43), (23,754.34) and (36,745.37) million shillings respectively (RoK, 2023). Thus, there was a need to establish the extent of the relationship between the money invested in vocational training centers (VTCs) and access to provide feedback to the government policymakers and the taxpayers about the money invested in the VTCs in the form of a bursary.

Even though these institutions were widely distributed in the entire country, Bungoma County was selected because a study by Mumiukha et al. (2015), had

established that the net enrolment rate in Bungoma County was below the national average percentage for the year 2009 in both primary (national, 92.9% while Bungoma, 84.5%) and secondary schools sector (national, 35.8% while Bungoma, 17.7%). Enrolment in the other counties was as follows: Murang'a county (93.4%) for primary and (39.0%) for secondary level, Vihiga county (87.5%) for primary and (25.5%) for secondary level, Kakamega county (82.5%) for primary and (19.3%) for secondary level and Trans Nzoia county, (83.1%) for primary and (20.3%) for secondary level. This means that, unlike other counties, more youths may have been unable to access the mainstream education in Bungoma County and many more who may have accessed it may have dropped out as was established by the study by Orwasa (2010) which found that the dropped rate was between (11.3%-21.2%). Therefore, by establishing enrolment trends in VTCs and completion rates in Bungoma County, the education planner was informed about the status of those students who dropped out of mainstream education in Bungoma County.

Besides, at inception, the BCGBF was being disbursed at the ward level in Bungoma County thus, the amount received per VTC applicant per year, varied depending on several factors which may have included: the order of priority of projects in a given ward, the number of applicants, the available amount of money and knowledge about the existence of the bursary by the potential trainees. This raised the need to establish the trend of the amount of BCGBF and by extension, the relationship between the amount of BCGBF and students' access to help the policymakers implement efficient programs.

Some studies showed that completion rates in VTCs were low (Kiplagat et al., 2016) and (Akinyi et al., 2021), while others showed a negative relationship

between government initiatives and access (Rukwaro et al., 2017). Thus, there was a need to establish the relationship between the amount of BCGBF and completion rates of students from VTCs to provide feedback to the stakeholders and education planners about the wastage rate.

1.9. Significance of the study

The research was significant because the findings from this study will help to contribute to the existing knowledge by providing feedback to government policymakers about trends in enrolment and completion rates. This will inform their decisions on policy formulation and budgeting for the VTCs. The study will also inform the taxpayers about the money invested in the VTCs in the form of a bursary to help inform them about the value of their money that has already been invested into VTCs inform of bursary.

The information on trends of enrollment and completion rates, will help the educational planner be informed about the status of those students who dropped out of mainstream education in Bungoma County and as such, formulate suitable incentives and put in place mitigation measures that could curb challenges related to these.

The information about the relationship between the amount of BCGBF and student access to VTCs will help policymakers implement efficient programs. The knowledge about low completion rates will provide feedback to the stakeholders and education planners about the wastage rate.

1.10. Scope of the study

The study was based on Bungoma County public VTC trainees enrolled in the VTCs between 2014 to 2019, principal instructors (also called managers) of the VTCs, and the sub-county vocational education and training officers (SCVETOs). Public VTCs were chosen for inclusion in the study because these types of institutions are guided by the same policies, were widely distributed across the county, and were consistent in the provision of training. The year 2014 to 2019 was picked to acquire the most current data and to enable the study to draw trends for the BCGBF and trends of access (enrolment and completion).

1.11. Limitations of the study

The following were the limitations of the current study: the study was conducted only on public VTCs in Bungoma County and as such, the findings may not be generalizable to private VTCs. Besides, the study only considered VTCs that were in existence by the year 2013, and as such, newly set up VTCs were not considered for inclusion in the study. Besides, some VTCs' records had incomplete data, in that they provided partial information about those enrolled, leaving out some of the data that was sought by the researcher for instance nature/name of the course that the trainees had enrolled in, this meant that the study was unable to categorize some VTC trainees under specific categories like course being undertaken.

1.12. Assumptions of the study

This study was based on the assumptions that the respondents had adequate knowledge of the subject to give adequate responses relevant to the study, that trainees, managers, and SCVETOs would be willing to take part in the study, and

that the public VTCs had the records on finances, enrolment, and completion of students between 2014 to 2019.

1.13. Theoretical framework

The current study was guided by the socialist economics of education theory and the principle of demand and supply. The socialist economics of education theory was advanced by Louis Blanc. The theory stresses the need for equality in society through the redistribution of income from the rich to the poor (Colander, 1994). Lerner (1938), proposed that consumers be charged a price that was proportional to their marginal social cost of production. The literal translation is that the government should tax the rich more than it does the poor and then use the extra money to pay for tuition fees for the poor. In this case, through the Bungoma County Government Bursary Fund, which was used to reduce the fees charged to VTC trainees. The bursary is awarded to the trainees with the hope that it would remove the disparity that existed between the youth from poor economic backgrounds and rich economic backgrounds in terms of access (Chiu and Chen, 2023), by meeting part of the tuition fees for the trainees of the VTCs.

This theory was applied to the current study in the sense that, when the poor are enabled to enroll in VTCs, the initial number of these enrolled would increase. However, this may not always be the case since the theory was coined around the assumption of the principle of demand and supply which states that, when all things are constant, an increase in commodity prices, would lower the quantity demanded of that commodity and vice versa (Mankiw, 2007). Alfred Marshal is one of the known proponents of this principle of demand. Marshal introduced the demand and supply curve and the concept of price elasticity of demand (Marshal, 1890). In the

school scenario, this principle implies that in the absence of any other external interference, an increase in the amount of money required of a potential trainee to pay in terms of tuition fees in VTCs would lead to a decrease in the number of those who are willing and able to enroll into the institutions and when the amount of tuition fees required of a potential trainee to pay is lowered, the number of those who are willing and able to enroll into the institutions increases. Therefore, when a bursary reduces the amount of tuition fees that VTC trainees have to pay in the form of tuition, it would be expected that more youths would be able to enroll in the VTCs and even complete the courses they enroll in.

However, Gillen (2012), noted that the principle is not always so straightforward since, the type of market (thus: elastic, inelastic, or normal supply market) may affect its behavior. Meaning that an increase in the price of some goods may not affect their demand (Marshal, 1890). In the scenario of an education institution, the level of education becomes the market, and thus, whereas an increase in the amount of bursary may cause enrolment in a given institution to increase while tuition remains unchanged, in others, an increase in the amount of bursary may cause both tuition and enrolment to increase. A good illustration of inelastic demand was illustrated in the study by Heller (2013), which affirmed that colleges, as a level of education, may not always necessarily subscribe to this principle (demand and supply) as they create their demand. Implying that, even without government financial initiatives, some colleges will tend to attract enrolment. Just like there are different types of markets, there are different types of bursary and the amount awarded per trainee may vary from one institution to the next and from one region to the next. Warren (2012), for instance, noted that bursaries differ in how they react in each environment depending on several factors some of which include:

the country's stage of economic development, its history, and the type of management system that is employed.

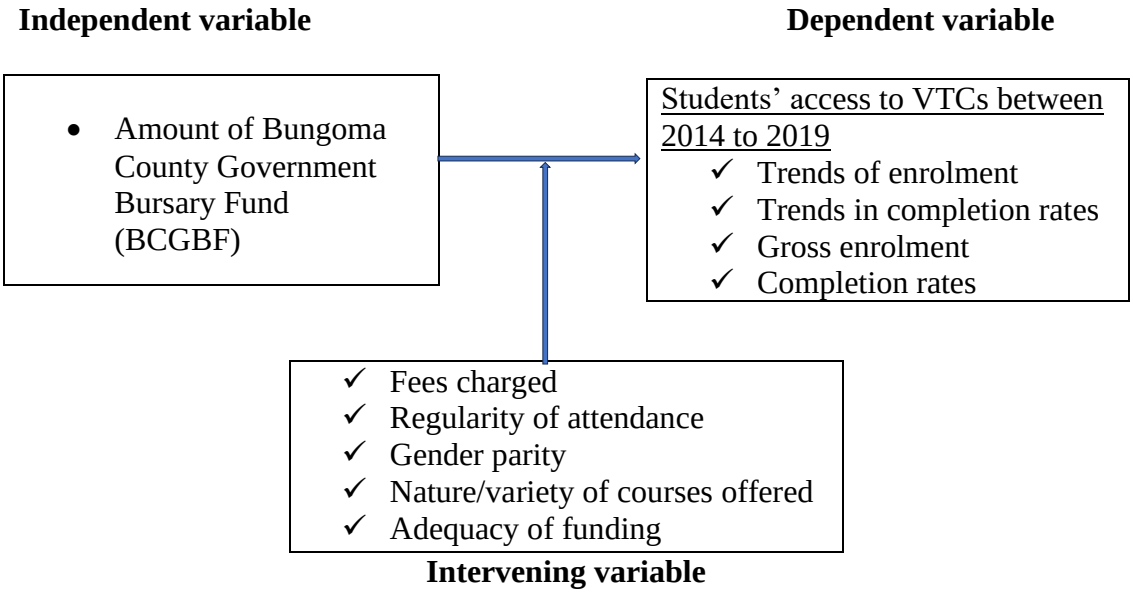
Formal schooling in Kenya was introduced with the coming of missionaries and was later reinforced by the colonial administration when they implemented technical education for Africans (RoK, 1908) and (RoK, 1911). This made technical education to be shunned by many Africans as it was seen as a means through which oppression was being administered (Eshiwani, 1993). That is why it was abolished and, in its place, academic education was introduced (RoK, 1964). For this reason, the problem of negative attitudes towards this level of education has persisted for some time. Therefore, even though there has been extensive research that has been conducted to investigate the relationship between government initiatives and the indicators of access like enrolment and completion to other levels of education like primary school and secondary school, it was still necessary to establish the state of affairs concerning VTCs. That was why the researcher had to conduct the current study on VTCs.

1.14. Conceptual framework

The conceptual framework showed how the amount of BCGBF influenced access. The amount of BCGBF was the independent variable while access to VTCs was the dependent variable. This relationship is illustrated in Figure 1.

Figure 1

Conceptual Framework.



Source: Current study.

The conceptual framework that was depicted in Figure 1, assumed that there was a relationship between the amount of Bungoma County Government Bursary Fund (BCGBF) and students' access (enrolment and completion rates) to vocational training centers between 2014 and 2019. However, this relationship may have been influenced by the fees charged per trainee per year by the VTCs, regularity of attendance of the VTCs trainees, gender parity, nature and variety of courses offered by the VTCs, and adequacy of funding.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

This chapter presented literature that was reviewed with a specific focus on the objectives of the study: trends of government bursary, trends of students' access (enrolment and completion) to Vocational Training Centres (VTCs), government bursary and enrolment, government bursary and completion rates and the knowledge gap for the reviewed literature and how the current study filled the gaps.

2.2. Trends of Government Bursary

A government bursary is issued to students from poor backgrounds to enable them to access educational institutions (Chiu and Chen, 2023). It works by reducing the amount of tuition fees that a given student has to pay. However, modalities of issuing the bursary differ from one country to the other and from one region/level of education to another, depending on the purpose for which the bursary is intended and the target population of the bursary. A very good example is that of England where parliament enacted a law that stipulated that students from economically needy backgrounds who were enrolled in higher education were to receive a bursary of up to 300 pounds (Callender, 2010). While this may have been the case in England, it might not necessarily have been the case in other parts of the world. In Nepal for instance, a study by Baikuntha (2020), established that the amount of money that was allocated to TVET institutions by the government could not achieve the sustainable development goal.

Bursaries are awarded to specific individuals to enable them to study or access an educational institution (Hornby, 2015). To this end, many countries have their systems by which they allocate bursaries to their applicants/citizens. In China, the government pays tuition for all students enrolled in vocational education (Kuczera and Field, 2010). While in Fiji, the target population for the bursary was the poor (Maglen et al., 2014). In some countries, an equal number of beneficiaries per region received bursary, as was the case in Kiribati (Majumdar and Teaero, 2014), while in others, all those enrolled receive bursary without having to apply for it, as was the case in the Solomon Islands (Bateman et al., 2014). This was an illustration that many types of bursaries were being employed by governments worldwide and that the bursaries could be classified based on the intended target population (rich, poor, or all) and the purpose of the bursary scheme (creation of equality or equity). The situation was not different in Africa because financing of TVET institutions was equally done by the governments. For instance, in Ghana, trainees of vocational education were awarded bursaries through the Ghana Skills Development Fund (Republic of Ghana, 2021).

On the trends of the bursary, a study by Memba and Feng (2016), "Significance of trends on enrolment, budget and actual expenditure in the examination of higher education and financing in Tanzania," established that there was an upward trend in financing of the education sector from 2005 to 2015, by the government. The purpose of the study by Memba and Feng was to examine the significance of the trends of enrolment to sustainable human capital investment and the objectives of their study were: to examine the trend of enrolment in higher education, to examine the trend of budget fluctuation and to examine actual education expenditure as a proportion of the gross domestic product in Tanzania.

Their study collected data using only one instrument of data collection (document analysis) unlike the current study which used three methods of data collection thus, document analysis, interviews, and questionnaires. In addition to government funding, the study by Memba and Feng was also interested in budget, which fell outside the scope of the current study.

Just like was the case in Tanzania, in Kenya, there was an expected increase of 7.1% in government expenditure on education and a decrease of 1.6% in government recurrent expenditure on the TVET sector during the 2021/2022 financial year and fluctuation in county government expenditure on education between 2018/19 to 2022/23 financial years (RoK, 2023). Recurrent expenditure was of interest to the current study because this was the financial account from which bursaries, among other expenditures like salaries, are drawn. As such, a decrease in the percentage amount of recurrent expenditure would translate to budget cuts and bursaries would be among the likely targets (Jweiles, 2017). Information in the TVET sector was equally important for the current study because VTCs (which are the target for the current study), fall under the TVET institutions. The information on county expenditure on education was also important to the current study because VTCs were devolved to the county government and as such, they were a mandate of the county government (RoK, 2010). With this in mind, the current study was conducted on a county (Bungoma County), to establish the relationship between the amount of BCGBF and students' access to vocational training centers.

The data from the Economic Survey report of 2023 differed from the current study in that, it was carried out on a large scale at all levels of government and as

such, provided information about the total expenditure of county government on education in all the 47 counties and not specifically on Bungoma county.

Since vocational training and early childhood are the two institutions that were devolved to the county by the constitution (RoK, 2010), there was great expectation on how the county governments would fund these levels of education. However, a study by Wasike et al. (2020a), "The relationship between budget adequacy and student enrolment in TVET institutions in Bungoma County," established that the trainees of VTCs may have been receiving more funding from the Constituency Development Fund (CDF) (74.5%) than from the Bungoma County Government Bursary Fund (BCGBF) (21.8%). There was thus, a need to establish the trend of the amount of Bungoma County Government Bursary (BCGBF) to establish its persistence in either increase or decrease. Unlike the current study, the study by Wasike et al. was focused on TVET in general and not specifically on VTCs, and on government initiatives in general and not specifically on BCGBF. This was the gap that was filled under the current study by narrowing the focus to VTCs, specifically.

2.3. Trends of Access to Vocational Training Centres.

There was a renewed interest in the TVET sector by many governments as these institutions of learning were considered to be vital in economic development (Osidipe, 2017), as they reduced the rate of unemployment (Haolader, 2015; Powell and McGrath, 2013). Each government thus sought to increase their level of access (enrolment and completion) by the enactment of deliberate plans like awarding of bursaries to needy students (for the VTCs the County Government Bursary was introduced). However, unemployment remained a challenge in Kenya, especially

among the youth (Jayaram and Sinaceur, 2016). In most cases, this was attributed to the lack of skills and the lack of opportunities. For the current study, two indicators of access (enrolment and completion) were focused.

TVET in full stands for Technical and Vocational Education and Training. This name may vary from one country to the next depending on several factors and as such, some countries refer to them as Vocational Education and Training (VET) institutions, and Vocational Training Institute. In Kenya, these are institutions that offer technical courses. They include technical training colleges, national polytechnics, technical and vocational colleges (formerly known as technical training colleges and vocational training colleges/centers (formerly known as youth polytechnics) (RoK, 2023). The focus of the current study was on vocational training centers/colleges (formerly known as youth polytechnics). The Vocational Training Centres (VTCs) offer a variety of certificate courses like tailoring and garment making, motor vehicle mechanics, architectural welding, masonry, plumbing and pipe fitting, carpentry and joinery, electrical wiring, hairdressing, food technology, and agribusiness. Background information for the current study was important due to the need for clarification and the need to paint an actual picture of the area of study.

2.3.1. Trends of Completion of Courses in the Vocational Training Centres.

Many studies have been conducted on completion rates from various institutions of learning including TVET and VTCs some of which were reviewed in the current study. A study by Dynarski (2007), “The Economics of Student Aid,” noted that 37% of college entrants who had received grant aid in the United States of America (U.S.A), dropped out. The study by Dynarski (2007), was a summary of all previous studies by the same author. This study was conducted on colleges, in the USA, to investigate the grant aid program, using the difference in difference estimation method. This was unlike the current study that was conducted in Bungoma County, using the correlation research design, to determine the relationship between the amount of BCGBF and students' access to Vocational Training Centers (VTC).

Unlike the study by Dynarski, a study by Yi et al. (2015) estimated that the dropout rate in China was between (10.7%-22%). A study by Somaggio (2021), attributed non-completion of trainees (71%) to be because they often changed courses before completion. These studies illustrated a worrying trend in access to the TVET sector. The high dropout rates suggested some underlying causes that were contributing to the dropout rate and a likely error in the computations of the enrolment especially in instances where a trainee dropped out of one course only to enroll into another course. However, these studies were different from the current study as they were conducted outside the African continent and on different forms of bursary, unlike the current study that was conducted in Africa, Kenya, and more specifically in Bungoma County.

Just like in other parts of the world, the dropout rate in Ghana National Vocational Training Institute (NVTI) institutions was high mainly among the poor

(Republic of Ghana, 2021). The high dropout rates presented a worrying trend whereby students walk right in and out of institutions of learning, notwithstanding the amount of money that may be wasted and which may never be recovered (McInnis et al., 2000). The trend was no different in Kenya, as was evident in the reviewed literature.

A study by Kiplagat et al. (2016), "Factors Influencing Trainees' Completion Rate in Public Vocational Training Centers in Kenya: focus on National Vocational Certificate of Education and Training," and a study by Akinyi et al. (2021), "Internal efficiency of public vocational training centers in Kenya," and the study by Baituti (2014), "factors influencing students' acquisition of vocational skills in vocational training centers in Igembe and Tigania districts of Meru county," established that the completion rates in VTCs were low. The objectives of the study by Kiplagat et al. were: to determine the influence of trainee-based factors on trainees' completion rate in VTCs, to explore the influence of family-based factors on trainees' completion rate in Vocational Training Centres, to examine the influence of institution-based factors on trainees' completion rate in Vocational Training Centres, and to establish community-based factors that influenced trainees' completion rate in Vocational Training Centres. The study used the explanatory sequence methods design and collected data using questionnaires, interviews, document analysis, and observation. Unlike the current study which was conducted in Bungoma County using three methods of data collection and the correlation research design. Equally, unlike the current study that was conducted in Bungoma County, the studies by Kiplagat et al., Akinyi et al., and Baituti were conducted outside Bungoma County.

The purposes for their studies and objectives differed from that of Okwemba (2014), “equity in access to YPs by graduates of primary and secondary schools in Kakamega County,” which established there were high dropout rates among females. The purpose of the study by Okwemba was to investigate factors that determine equity and access of youth to YPs and the objectives of the study were: to establish trends in access to YPs in Kakamega County from 2009 – 2013 by students’ characteristics, to determine the relationship between students’ socio-economic characteristics and access to YPs in Kakamega County in Kenya, to determine equity levels in access to YPs in Kakamega County by student characteristics and to establish challenges facing youth in accessing YPs in Kakamega County. The study collected data using questionnaires, interview schedules, and document analysis by use of checklists. Unlike the current study that was conducted in Bungoma County and whose purpose and objectives were different from those of the study by Okwemba.

2.3.2. Enrolment into Vocational Training Centres’ courses.

To enroll in a VTC course one must be registered into the course. Information on enrolment into VTCs was available in the admission registers also called the admission book. The Economic Survey report showed that enrolment in the VTCs was low and that the number of public VTCs in Kenya decreased from 1,156 in 2020 to 1,031 in 2021 (RoK, 2023). The closure of the VTCs impacts negatively on access as it may increase the distance that trainees have to travel daily to access education (Okwemba, 2014).

The findings of the sampled studies on enrolment were as follows: a study by Ngugi and Muthima (2017), “Female participation in TVET subsector: the Kenya

experience," showed a positive trend in enrolment and gender disparity in enrolment. The purpose and objectives, research design, and methods of data collection were not indicated in the online document. The study by Ngugi and Muthima was different from the current study since its main focus was on female participation, unlike the current study whose focus was on both genders. Moreover, the main focus of the study by Ngugi and Muthima was on TVET in general and not specifically on vocational training centers (VTCs).

Unlike the study by Ngugi and Muthima, a study by Kitui (2015), "factors influencing access to technical and vocational education and training in Bungoma East sub-county, Kenya" established that there was fluctuation in enrolment in VTCs between 2011 to 2013. The study also established that enrolment in VTCs in the sub-county remained a big challenge. The purpose of Kitui's study was to establish the factors that influenced access to the five registered TVET institutions in the Bungoma East sub-county. The study employed the use of descriptive survey research design and collected data using questionnaires. However, unlike the current study, a study by Kitui was conducted on one sub-county among the nine sub-counties and employed the use of descriptive survey research design, unlike the current study that employed the use of correlation research design. This was the gap that was filled by the current study by conducting the research in all nine sub-counties of Bungoma County.

Therefore, even though many studies have been conducted to investigate the trends of access, they presented a worrying trend in terms of enrolment and completion. Besides, most of these studies were conducted outside the county, outside the country, and in Africa. Furthermore, no consensus was established by the

studies concerning the trend of either enrollment or completion. That said, the research had yet to come across a study that investigated the trends of access in Bungoma County. This was the gap that was filled by the study.

2.4. Government Bursary Fund and Enrolment.

To increase enrollment into VTCs, the county government of Bungoma introduced the BCGBF in 2014. This money was paid to the VTCs on behalf of the enrolled trainees, to cater for tuition. The allocation of the amount was conducted at the ward level through the office of the area Member of the County Assembly. To this effect, a lot of government funds have been invested in the VTCs in terms of bursary since the 2013/2014 financial year and it was for this reason that the current study endeavored to establish the relationship between the amount of Bungoma County Government Bursary Fund (BCGBF) and gross enrolment in public VTCs.

The support of the government to VTC trainees came in various forms, for instance, the issuance of bursaries to the trainees. This was because most of the public education institutions may not be able to sustain themselves in the absence of government funding (OECD, 2017). Government bursaries therefore serve to reduce the cost of tuition by either shouldering part of the school fees or waiving it altogether to encourage increased enrollment levels. Bursaries equally have many functions for which they are formulated but for the current study, the research solely focused on amounts of bursaries.

Many studies have been conducted to establish the relationship between government financial initiatives like bursaries and enrolment, some of which were reviewed in the current study. A study by Nielsen et al. (2008), “Estimating the

effect of student aid on college enrolment: evidence from a government grant policy reform", established that the enrolment to colleges as a result of the grant policy reform was less responsive. The purpose of the study by Nielsen et al. was to establish the responsiveness of the demand for college to changes in student aid arising from a Danish reform and the objectives of their study were: to separately identify the effect of aid from that of other observed and unobserved variables for instance parental income, to exploit the combination of a kinked aid scheme and a reform of student aid to identify the effect of direct costs on college enrolment. Their study used the regression kink design and was conducted in Denmark, unlike the current study which had a different purpose and objective and was conducted in Kenya, using the correlation research design.

Unlike the study by Nielsen et al., a study by Chiu and Chen (2023), "the analysis of bursary satisfaction and learning performance for disadvantaged students: a case study from Taiwan," showed a positive relationship between bursary and participation. The findings of the study by Chiu and Chen were in tandem with those of Nielsen et al. since, both the studies established that there was a positive relationship between government financial initiatives and enrolment. The study by Nielsen et al. also found that bursary was less responsive. This meant that there were always other factors other than the cost of tuition that influenced enrolment into college (Heller, 2013). This means that apart from funding, many other intervening variables needed to be at play for there to be an increase in enrolment of a given institution. This argument was borne from the idea that bursaries differ in how they react in each environment depending on several factors (Warren, 2012). As such, there was a need for more research to be conducted to establish the state of affairs about other parts of the world and other levels of education like VTCs.

Several studies have been conducted to establish the relationship between bursary and enrolment some of which include: studies by Ng'alu and Bomett (2014), "The Role of Constitutional Development Fund (CDF) in Provision of Secondary Education in Kenya," Oyoo et al. (2020), "influence of national government constituency development fund support on student enrolment in Muhoroni constituency in Kisumu County Kenya," and Wasike et al. (2020b), "utility of government initiatives in technical, vocational training institutions on student enrolment in Bungoma County, Kenya," which established that there a positive significant relationship between bursaries and enrolment of students in secondary schools. The purpose of the study by Ng'alu and Bomett was to investigate the role of the CDF in the provision of secondary school education in the Kilome constituency and the objectives of the study were: to assess the challenges encountered by secondary schools in achieving CDF funds in Kilome constituency, to investigate the role of CDF on provision of facilities in secondary schools and to establish the role of CDF in improving enrolment in secondary schools.

The purpose of the study by Oyoo et al. was to investigate the influence of NCDF support on student enrolment in the Muhoroni constituency. The purpose of the study by Wasike et al. was to investigate the contribution of government initiatives in TVET on enrolment in Bungoma County Kenya. The three studies by, Ng'alu and Bomett, Oyoo et al., and Wasike et al., unlike the current study, used the descriptive survey research design and collected data using two instruments. This was unlike the current study which had a different purpose, different objectives, and used a correlation research design using three methods of data collection. Furthermore, even though the study by Wasike et al. (2020b), was conducted in Bungoma County, its focus was on TVET in general and not specifically on VTCs

and on government financial initiatives in general and not specifically on BCGBF specifically.

However, unlike the studies of Ng'alu and Bomett, Oyoo et al., and Wasike et al, studies by Wanjala and Ali (2017), "the impact of subsidized fees program on students' access to quality education in public secondary schools in Wajir County, Kenya" and Tanui (2016), "effect of government financial interventions on education indices of the vulnerable secondary school students in Nandi North sub-county, Nandi County, Kenya," established that enrolment rates had remained low after the introduction of the subsidized fee program, The purpose of the study by Wanjala and Ali was to establish the relationship between subsidized fees program and students access to quality education in public secondary schools in Wajir County, Kenya. The objectives of the study by Wanjala and Ali were: to establish the effect of subsidized fees on enrolment rates in public secondary schools, to determine the influence of subsidized fees on students' academic performance, to examine how schools adhere to subsidized fees utilization of financial resources on student access to quality education and to examine the impact of subsidized fees program on procurement of instructional materials for effective quality secondary education in Wajir County. The study by Wanjala and Ali collected data using questionnaires, and document analysis by use of checklists, interview schedules, and observation schedules. The purpose of the study by Tanui was to investigate the effect of government financial interventions on vulnerable secondary school students in the Nandi North sub-county. This study used the survey research design and collected data using questionnaires and interviews, unlike the current study which had a different purpose and objectives.

Therefore, the studies by Wanjala and Ali and Tanui had different purposes and objectives and while the by Wanjala and Ali collected data using four instruments of data collection, the study by Tanui collected data using two instruments of data collection. This was unlike the current study which used three instruments of data collection and whose purpose and objectives were different from those of the studies by Wanjala Ali and Tanui.

The reviewed studies had similarities and differences with each other as well as with the current study thus creating gaps as follows: Nielsen et al., Oyoo et al., Ng'alu and Bomett, and Wasike et al., arrived at the same conclusion that bursary had increased enrolment. However, these findings were contrary to those of the studies by Wanjala and, Tanui, which established that enrolment remained low even after the introduction of the subsidized fee program. These studies were different from the current study in that their methods of data collection differed from the current study. For instance: studies by Ng'alu and Bomett and Oyoo et al. collected data using two methods, questionnaires and interview schedules while the study by Wasike et al. used questionnaires to collect data. The study by Wanjala and Ali collected data using questionnaires, document analysis by use of checklists, interview schedules, and, observation schedules, and the study by Tanui collected data using questionnaires and interviews. This was unlike the current study which used three methods of data collection. moreover, even though the study by Wasike et al. was conducted in Bungoma County, its focus was on TVET in general, unlike the current study which focused specifically on VTCs. Thus, need for the current study.

2.5. County Government Bursary Fund and Completion Rates.

The government has been spending money in the form of a bursary on VTC trainees in Bungoma since 2014 therefore, it was important to obtain feedback on this expenditure in terms of completion rates. Delayed completion of VTC courses increases the cost of training as more money would be spent on each additional year that the trainee would be in the VTC. That is why it was important for the current study to establish the completion rates of the trainees from the VTC programs. Besides, the availability of feedback may enable the government to reward more, well-performing institutions in terms of access (Palmer, 2015) and this may in the long run act as a good incentive to the poor-performing ones. Inadequate feedback on the government money that has been invested for instance, as a bursary, into educational institutions may deter efficiency thus leading to wastage. Kenya is a country of limited economic resources and as such, every penny spent on its behalf, by those in authority must be accounted for. Therefore, this was the gap that was filled in the current study.

Non-completion of courses has been a problem that has been ailing many levels of education. A study by Dynarski (2007), quoted the 2000 Census in the USA where noncompletion of courses was a serious challenge even though the government was paying tuition for the trainees. A study by Rukwaro et al. (2017), found that the relationship between the government financial interventions and completion rates was negative. This was unlike the studies by Nzuki (2017) and Obwari (2013), which established that the relationship between bursary and completion was positive. The study by Dzuya (2020), found that the bursaries were inadequate to pay fees charged by the school.

The reviewed studies yielded contradictory findings whereby, whereas, studies by Dynarski, Tanui, and Rukwaro et al., established that bursary had a negative relationship with completion rates, studies by Nzuki and Obwari established that there was a positive relationship between bursary and completion, while Dzuya found inadequacy of bursary. Moreover, all these studies were conducted on colleges and secondary schools in the United States of America, Nandi North sub-county, Githunguri sub-county, Machakos county, Likuyani constituency, Kilome constituency, and Kwale county, unlike the current study that was conducted in Bungoma county on VTCs.

Furthermore, the purpose of the reviewed studies was different from the purpose of the current study. For instance: the study by Dynarski was a summary of all previous studies by the same author, the purpose of the study by Tanui was to investigate the effect of government financial interventions on education indices of the vulnerable secondary school students in Nandi North sub-county, Nandi County, the purpose of the study by Rukwaro et al. was to investigate the influence of CDF on access to secondary schools in Githunguri sub-county, the purpose of the study by Nzuki was to understand the effects of the two policies on both enrolment and dropout rates among secondary school age children, the purpose of the study by Obwari was to determine the influence of CDF on secondary school education development in Likuyani constituency and the purpose of the study by Dzuya was to determine the effect of county bursary on completion rates of university students in Kwale county. This was unlike the current study whose purpose was to establish the relationship between the amount of Bungoma County Government Bursary Fund (BCGBF) and students' access to public vocational training centers, in Bungoma County, Kenya. Therefore, this was the gap that the study filled.

Similarly the current study, the study by Tanui used the survey research design and collected data using questionnaires and interviews. The study by Rukwaro et al. used the descriptive research design and collected data using questionnaires and interview schedules. The study by Nzuki used the descriptive survey research design and collected data using interview schedules. Objectives of the study by Obwari were: to determine the extent to which CDF has been equitably distributed, its role in the provision of physical facilities, and to establish its effect on enrolment and learners' academic performance in public secondary schools in the Likuyani constituency. The study used the descriptive survey research design and collected data using questionnaires and interview schedules. The study by Dzuya used the descriptive survey research design and collected data using questionnaires, document analysis, and interview schedules. These were the gaps that were filled by the current study which had a different purpose, and objectives and used different research design (correlation research design) and instruments of data collection.

It was important to point out that completion rates may not carry the same interpretation for the TVET sector as they do for mainstream education. This argument was based on the idea that the skills learned by the trainees of the TVET institutions may be put to use to earn a living by the trainees even in the absence of proof of certification. Fieger (2015), noted that this meant that noncompletion of a TVET course may not be interpreted as lack of skills. While the argument bore a lot of weight, there was still a need for the current study to establish the trends of the completion rates of VTCs for accountability.

2.6. Knowledge Gap in Reviewed Literature

Many studies have been conducted to establish the trends of government bursary and students' access and the relationship between government bursary and students' access (enrolment and completion) to education institutions, some of which were reviewed under the current study and the following gaps were identified: on the trend of bursary, the study found that in addition to government funding, the study by Memba and Feng (2016), was also focused on budget, which fell outside the scope of the current study. Similarly, the report by the Economic Survey report differed from the current study in that, it was carried out on a large scale at all levels of government and as such, provided information about the total expenditure of county government on education in all 47 counties and not specifically on Bungoma county. The study by Wasike et al. (2020a), was different from the current study in that, its focus was on TVET in general and not specifically on VTCs, and on government initiatives in general and not specifically on BCGBF. This was the gap that was filled in the current study.

On trends of access, the study by Dynarski (2007), was a summary of all previous studies by the same author. This study was conducted on colleges, in the USA, to investigate the grant aid program, using the difference in difference estimation method, unlike the current study. The study by Okwemba (2014), was conducted in Kakamega County, and the county government bursary fell out of the scope of the study even though the study by Kitui (2015), was conducted in Bungoma County, its focus was on one sub-county among the nine sub-counties and it employed the use of descriptive survey research design, unlike the current study. The study by Ngugi and Muthima (2017), was different from the current study since

its main focus was on female participation. Moreover, the main focus of the study by Ngugi and Muthima (2017), was on TVET in general and not specifically on Vocational Training Centres (VTCs). Therefore, studies that were reviewed under the current study presented a worrying trend in terms of enrollment and completion. Besides, most of these studies were conducted outside the county, outside the country, and in Africa. Furthermore, no consensus was established by the studies concerning the trend of either enrollment or completion. That said, the research had yet to come across a study that investigated the trends of access in Bungoma County. This was the gap that was filled by the study.

The study by Nielsen et al. (2008), used the regression kink design and was conducted in Denmark, while the studies by Ng'alu and Bomett (2014), Oyoo et al. (2020), and Wasike et al. (2020b), unlike the current study, used different research design (the descriptive survey research design) and differed with the current study on instruments of data collection. Moreover, even though the study by Wasike et al. (2020b), was conducted in Bungoma County, its main focus was on TVET in general and not specifically on VTCs and on government financial initiatives in general and not specifically on BCGBF specifically. Equally, the studies by Wanjala and Ali (2017), and Tanui (2016), had different purposes, objectives, and the number of instruments of data collection. Thus, the reviewed studies had similarities and differences with each other as well as with the current study thus creating gaps that were filled by the current study. Furthermore, Heller (2013), affirmed that; there were always factors other than the cost of tuition that influenced enrolment into college. Thus, leaving a gap for the VTCs that was filled by the current study.

On the relationship between government bursary and enrollment, the reviewed studies were different from those of the current study in terms of design, purpose, instruments used, and objectives. The purpose of the study by Tanui (2016), was to investigate the effect of government financial interventions on education indices of the vulnerable secondary school students in Nandi North sub-county, Nandi County. The purpose of the study by Rukwaro et al. (2017), was to investigate the influence of CDF on access to secondary schools in the Githunguri sub-county. The study by Rukwaro et al. (2017), used the descriptive research design and collected data using questionnaires and interview schedules. This was unlike the current study which had a different purpose, design, and instruments of data collection.

On the relationship between bursary and completion, the reviewed studies yielded contradictory findings whereby, whereas, studies by Dynarski (2007), Tanui (2016), and Rukwaro et al. (2017), established that bursary had a negative relationship with completion rates, studies by Nzuki (2017) and Obwari (2013), established that there was a positive relationship between bursary and completion, while Dzuya (2020), found inadequacy of bursary. Moreover, all these studies were conducted on colleges and secondary schools in the United States of America, Nandi North sub-county, Githunguri sub-county, Likuyani constituency, Kilome constituency, and Kwale county, unlike the current study that was conducted in Bungoma County on VTCs. Furthermore, the purpose of the reviewed studies was different from the purpose of the current study. For instance: the study by Dynarski (2007), was a summary of all previous studies by the same author, and the purpose of the study by Tanui (2016), was to investigate the effect of government financial interventions on education indices of the vulnerable secondary school students in

Nandi North sub-county, Nandi County. The purpose of the study by Rukwaro et al. (2017), was to investigate the influence of CDF on access to secondary schools in the Githunguri sub-county, the purpose of the study by Nzuki (2017), was to understand the effects of the two policies on both enrolment and dropout rates among secondary school age children, the purpose of the study by Obwari (2013), was to determine the influence of CDF on secondary school education development in Likuyani constituency and the purpose of the study by Dzuya (2020), was to determine the effect of county bursary on completion rates of university students in Kwale county. This was unlike the current study whose purpose was to establish the relationship between Bungoma County Government Bursary Fund (BCGBF) and students' access to public vocational training centers, in Bungoma County, Kenya. Therefore, this was the gap that the study filled.

Furthermore, unlike the current study, the study by Tanui (2016), used the survey research design and collected data using questionnaires and interviews. The study by Rukwaro et al. (2017), used the descriptive research design and collected data using questionnaires and interview schedules. The study by Nzuki (2017), used the descriptive survey research design and collected data using interview schedules. Objectives of the study by Obwari (2013), were: to determine the extent to which CDF has been equitably distributed, its role in the provision of physical facilities, to establish its effect on enrolment and learners' academic performance in public secondary schools in the Likuyani constituency. The study used the descriptive survey research design and collected data using questionnaires and interview schedules. The study by Dzuya (2020), used the descriptive survey research design and collected data using questionnaires, document analysis, and interview schedules. These were the gaps that were filled by the current study which had a different

purpose, and objectives and used different research design (correlation research design) and instruments of data collection.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Introduction

This chapter discussed the research methodology that was used to conduct the research. The chapter constituted the research design, study area, target population, sample size, sampling procedure, instruments of data collection, the validity and reliability of the research instruments, data collection procedure, data presentation and analysis techniques, and ethical considerations.

3.2. Research design

The correlation research design was employed in the current study. Correlation research design studies show the extent of the link between two variables (Ary et al., 1972). Using this design, the study was able to establish the link between the amount of the Bungoma County Government Bursary Fund (independent variable) and students' access to public VTCs (dependent variable). This research design was deemed suitable for the current study because of its high rate of external validity (Bhandari, 2021).

3.3. The Study Area

The current study was conducted in Bungoma County because the number of VTCs in Bungoma County almost doubled in less than five years from 54 in 2013 to 88 in 2019. This was unlike the national statistics as was evident in the Economic Survey report of 2023 which showed that the number of public VTCs countrywide had decreased from 1,156 in 2020 to 1,031 in 2021 (RoK, 2023).

Moreover, primary school and secondary school dropouts are the main catchment area for VTCs. However, Mumiukha et al. (2015), in their study, established that the net enrolment rate in Bungoma County was below the national average percentage for the year 2009 in both primary (national, 92.9% while Bungoma, 84.5%) and secondary schools sector (national, 35.8% while Bungoma, 17.7%). Enrolment in the other counties was as follows: Murang'a county (93.4%) for primary and (39.0%) for secondary level, Vihiga county (87.5%) for primary and (25.5%) for secondary level, Kakamega county (82.5%) for primary and (19.3%) for secondary level and Trans Nzoia county, (83.1%) for primary and (20.3%) for secondary level. This means that, unlike other counties, more youths in Bungoma County may have been unable to access mainstream education in Bungoma county. Besides, at inception, the BCGBF was being disbursed at the ward level thus, the amount received per trainee per year, varied depending on several factors.

It was against this background that public VTCs were selected to establish whether the increase in the number of public VTCs in Bungoma County was marched by an increase in enrolment and completion rates and because there was a high possibility that more students in Bungoma County may have missed out on enrolment to secondary school or dropped out from the mainstream education system than in other counties.

3.4. Target Population

The target population was 3,636 respondents thus, 3,578 VTC trainees, 54 principal instructors (also known as managers) of the VTCs, and 4 sub-county vocational education training officers (SCVETOs). VTC trainees were part of the

study population because they were the immediate beneficiaries of the bursary (BCGBF) and as such they were well-suited to describe the state of affairs as it was. Principal instructors (also called managers) were the administrators of the bursary and tuition fees in general and as such had adequate knowledge of the extent of the adequacy of the bursary and trends of the enrolment and completion. SCVETOs were also part of the population because they provided a general overview of the relationship between the bursary and access at the county level.

3.5. Sample size and sampling procedure

3.5.1. Sample size

To determine the sample, the study used the Table for sample size determination by Krejcie and Morgan (1970), (available as Appendix J). Using this table, 48 out of 54 VTC managers (principal instructors), 358 out of 3578, and 4 out of 4 SCVETOs were selected for inclusion in the current study. The category of respondents, population, and sample size is as illustrated in Table 1. Table 1. illustrates the distribution of the sample size in the nine sub-counties in Bungoma County.

Table 1

Distribution of the sample size of VTC managers and trainees in the 9 sub-counties

Sub-county	Public VTCs (2013)	Sample size of managers	The population of trainees in 2018	A sample size of trainees
1. Tongaren	5	5	232	23
2. Webuye West	4	4	295	30
3. Bumula	12	10	635	64
4. Mt. Elgon	2	2	234	23
5. Webuye East	2	2	137	14
6. Kimilili	7	6	423	42
7. Sirisia	5	5	402	40
8. Kabuchai	8	7	480	48
9. Kanduyi	9	7	740	74
Total 9	**54**	**48**	**3578**	

Source: Field data, 2019.

Table 1 shows that public Vocational Training Centres (VTCs) in Bungoma County were unequally distributed in the nine sub-counties of Bungoma County. The table also shows that enrolment in the respective VTCs was unequally distributed across the nine sub-counties. Table 2 illustrates the summary of the categories of the respondents.

Table 2

Category of respondents, sample size, and sampling techniques

Category of respondents	Target Population	Sample size
VTCs	54	48
VTC trainees	3578	358
VTC managers	54	48
SCVETOs	4	4
TOTAL		**3636**

Source: Field data, 2019.

Table 2 is a summary of information that was illustrated in Table 1. The Table shows that the. the total sample was 3,636 respondents. The table also shows that in addition to the 48 managers who were sampled to be interviewed, 48 VTCs were also sampled. The document analysis checklists were administered.

3.5.2. Sampling procedure

Mugenda and Mugenda (2003), noted that generalization of research findings to the target population largely depends on the degree to which the sample and target population are similar on salient characteristics. The study employed the use of a random sampling procedure by lottery, to acquire the desired sample for the VTC trainees and VTC managers. Stratified random sampling was used to select VTC managers according to their geographic region and stratified proportionate sampling techniques were used to select VTC trainees according to their courses. Stratified random sampling and stratified proportionate sampling techniques were used to give every VTC trainee and VTC manager an equal chance to participate in the study.

3.6. Instruments of data collection

Data collection was done by use of three instruments namely: document analysis, questionnaires, and interviews. Owano (1988), noted that accuracy and consistency are the most important aspects of a good instrument of data collection.

3.6.1. Document analysis

To use document analysis, the researcher constructed three checklists (available as appendix J, E, and F) which were used on every VTC to capture data on the amount of the Bungoma county government bursary allocated per trainee per year, enrolment per course per gender and completion per course per gender between the years 2014 to 2019 in Bungoma county VTCs. This method was the most suitable because of its reliability in collecting secondary data (Kothari, 2004).

3.6.2. Interview schedules

The interview schedules were administered to principal instructors (managers) of the sampled VTCs and Sub County Vocational Education Training Officers (SCVETOs). The interview schedules (available as Appendix B and C) were used to collect data on the perception of the adequacy of the bursary, reasons for the perception, the relationship between the BCGBF and access, and awareness of the existence of the bursary by trainees. Interview schedules were used because of their ability to adapt to the educational level of the interviewee (Kothari, 2004). This aspect was particularly important for the current study because the interviewees had varied academic abilities. To that effect, the study administered structured interviews.

3.6.3. Questionnaires for the public vocational training centers' trainees

The research also constructed one questionnaire that was administered to trainees in the sampled VTCs (available as Appendix A). Questionnaires that were administered to VTC trainees collected data on their gender, the course being undertaken, and access to the bursary. The study adopted the use of closed-ended structured questionnaires that contained both open-ended and closed-ended questions making them easy to answer.

3.7. Pilot Study

The study pre-tested the research instruments before field research. A pilot study was conducted in a public VTC which was not part of the study sample. This was done to ascertain the reliability and validity of the research instruments.

3.8. Validity of research instruments

Construct and content validity were measured. Nganyi (2014), singled out the use of professionals or experts in the field under study as the usual procedure of measuring content validity. To this effect, independent experts in the education planning and management department were requested to assess the concepts that the study instruments were trying to measure, with the help of the two supervisors who checked the questionnaires, interview schedules, and checklists to determine whether they accurately represented the items under study.

3.9. Reliability of research instruments

Ngumbao (2012), listed many factors that affect the reliability of research instruments and which may negatively affect the outcome of research if not

addressed. This concern was addressed by a pilot study in one of the public VTCs that was not included in the actual study. The questionnaires were pre-tested on one of the VTCs in Bungoma County that was not part of the sample, twice under identical conditions at an interval of two weeks, to establish that the question items could be correctly interpreted by the trainees and where necessary, adjustments were made. The Spearman rank order coefficient of the correlation formula was used to compute the correlation coefficient to establish the extent of consistency of the responses from the questionnaires. The questionnaires yielded a correlation of r (0.75). This showed a high consistency level meaning that the questionnaires were reliable.

3.10. Ethical considerations

The researcher obtained an introduction letter from the directorate of postgraduate studies (available as appendix G) of Masinde Muliro University of Science and Technology, a research permit (available as appendix H) from the National Commission for Science, Technology and Innovation (NACOSTI), a written permission from Director vocational education and training's office (reference letter in appendix I).

Respondents were informed that the information they would give would be purely for research purposes (introduction letter available as part A of appendix A). They were also not required to reveal any information that could have led to their identification for instance name, identity card number, or passport number. Respondents were also informed that they were free to participate in the study or not. Besides, no illegal or immoral tactics were used to collect any data and as such; the researcher respected the respondents' legal rights and human dignity.

3.11. Data collection procedure.

The researcher obtained an introduction letter from the Masinde Muliro University of Science and Technology School of Graduate Studies and a research permit to carry out the research was obtained from the National Commission for Science, Technology and Innovation (NACOSTI) and written permission from the Director Vocational Education and Training's office before conducting the research. The researcher visited the Sub County Vocational Education Training Officers (SCVETOs) and interviewed them after which, the researcher obtained contact details for various VTC managers (also called principal instructors) from the offices of the SCVETOs and spoke with the principal instructors over the telephone, to determine the appropriate time for the visit to the VTCs and the availability of the principal instructors for the interview. The researcher then visited the 48 sampled VTCs to collect data. Before administering the questionnaires and the interview schedules, the respondents were given instructions and assured of confidentiality after which, they were given adequate time to fill the questionnaires/respond to the questions asked. The questionnaires were later collected by the researcher. After this, the researcher used the document analysis checklists to collect data from the documents that were available in the VTCs. The researcher thus collected data using three methods namely: document analysis, interviews, and questionnaires.

3.12. Data analysis

Data was analyzed using frequency counts and percentages, then computed using the statistical package for social sciences (SPSS) and shown in different graphs, tables, and figures. The researcher checked the completed questionnaires to ascertain that all sections had been completed. Data was then, analyzed by first categorizing them. The first objective was on the trends of the amount of BCGBF

and students' access. The study calculated trends using Thakur's (n.d.), trend analysis formula. A trend is defined by Mitchell (2021), as a general direction taken by the market during a specific period. The formula for the percentage change was as follows:

$$\textbf{Percentage change} = \frac{\text{current year amount} - \text{base year amount}}{\text{Base year amount}}$$

Thakur (n.d)

Where:

The current year = the reference year

Base year = the previous year

The study also determined the total enrollment per course per gender per year from the documents that were available in the sample VTCs. This was done to illustrate gender parity in enrollment per course, per year and to establish the consistency of enrolment per course between 2014 to 2019. Completion rates were also determined using Sauro and Lewis (2016), formula. The formula was as illustrated:

$$\textbf{Completion rate} = \frac{\text{Number in cohort who successfully completed}}{\text{Total number of cohort enrolment}} \times 100$$

Sauro and Lewis (2016)

The second objective and third objectives were on the relationship between the amount of BCGBF and enrolment and the relationship between the amount of BCGBF and completion rates. The study used Karl Pearson's product-moment correlation coefficient formula to establish the correlation between the independent variable (amount of BCGBF) and the dependent variable (enrolment and completion

rates) (the working outs were computed on Microsoft Excel). Where, r = (0) indicated no association, r = (+) 1 indicated a perfect positive correlation and r = (-) 1 indicated a perfect negative correlation between the amount of BCGBF and dependent variables (students' access) (Kothari, 2004).

Regression models were used to show or predict the relationship between the amount of BCGBF and students' access (enrolment and completion rates). This was worked out on Microsoft Excel using the data analysis function. Using this model, the study established the t-statistics, the *p-value*, R^2 and adjusted R^2, and standard error. The t-statistics and *p-value* were used to determine the similarities in the means of the independent and dependent variables, the adjusted R^2 was used to determine the significance level, while the coefficient of determination was used to assess the amount of variation of students' access (enrolment and completion rates) that could be explained by the amount of BCGBF. The hypotheses *H*o1:b=0, and *H*o2:b=0 were thus tested using the findings on the simple regression model and the findings of Karl Pearson's product-moment correlation coefficient. Table 3 illustrates the methods of data analysis. The regression model was of the form: $Y = a + bX, €$ (Kothari, 2004)

Where:

Y = was the dependent variable (trend, enrolment, or completion rate)

X = was the independent variable (amount of Bungoma County Government Bursary Fund)

a= intercept

b= the slope

€= the residual

Table 3

Methods of Data Analysis for data between 2014 – 2019

Research Objectives	Independent Variable	Intervening Variable	Dependent Variable	Tool	Formula
Trends in the amount of BCGBF and access to public VTC	Amount of BCGBF	Gender parity, adequacy of bursary	Trend, access	Frequency counts Percentages	Trend analysis, completion rates
Relationship between amount of BCGBF and gross enrolment in public VTCs	Amount of BCGBF	Fees charged, adequacy of the bursary, nature/variety of courses offered	Enrolment	Frequency counts	Karl Pearson's formula
Relationship between the amount of BCGBF and completion rates	Amount of BCGBF	Fees charged, adequacy of bursary	Completion rates.	Frequency counts, percentages,	Karl Pearson's formula

Source: Current Study, 2019.

Table 3 illustrates methods of data analysis per objective for the data that was obtained from the sampled Vocational Training Centres (VTCs) from 2014 to 2019. That table also shows the independent variable, the dependent variables, and the corresponding intervening variables per objective.

CHAPTER FOUR

PRESENTATION, INTERPRETATION AND DISCUSSION OF FINDINGS.

4.1. Introduction

The findings were presented according to objectives which were as follows: to determine trends of the amount of Bungoma County Government Bursary Fund (BCGBF) and students' access to public Vocational Training Centers (VTCs) in Bungoma County between 2014 to 2019, to determine the relationship between the amount of BCGBF and gross enrolment in public VTCs between 2014 to 2019 and to determine the relationship between the amount of BCGBF and completion rates in public VTCs between 2015 to 2019.

The chapter is divided into six sections: background information about sample trainees of the VTCs, trends of BCGBF, trends of enrolment, trends of completion, the relationship between the amount of BCGBF and gross enrolment in VTCs, and the relationship between the amount of BCGBF and completion rates in VTCs. The instruments of data collection were document analysis by use of checklists, interviews, and questionnaires.

4.2. Background information about sampled Trainees of the VTCs

Out of the 358 questionnaires that were issued, 338 (94.41%) were returned, out of which, 304 (84.92%) were filled. This translated into a return rate of (84.92%) as shown in Table 4. This response rate was good enough, Mugenda and Gitau, (2008, as cited in Lijodi 2018). The Table also shows that more males (87.71%) than females (82.12%) filled and returned the questionnaires.

Table 4

Distribution of the respondents of questionnaires by gender.

Gender	Sample	Percentage(%)	Return	Percentage (%)
Male	176	50	157	87.71
Female	175	50	147	82.12
Total	358	100	304	84.92

Source: Field data, 2019.

The questionnaires that were administered to the VTC trainees showed that majority of the respondents 69 (22.7%), were undertaking garment making, 43 (14.14%) were taking Motor Vehicle Mechanics, 38 (12.5%) were taking Masonry, 36 (11.84%) were taking Hairdressing, 30 (9.87%) were taking Plumbing and Pipe Fitting, 25 (8.22%) were taking Food Technology, 16 (5.26%) were taking Carpentry and Joinery, 15 (4.93%) were taking Agri-business, 14 (4.61%) were taking ICT, 10 (3.29%) were taking Architectural Welding and, minority of the respondents 8 (2.63%) were taking electrical wiring. Table 5 illustrates the BCGBF applicants and beneficiaries of the returned questionnaires.

Table 5

BCGBF applicants and beneficiaries of returned questionnaires.

Gender	Return	Applicants	%	Beneficiaries	%	Nonbeneficiaries	%
Male	157	132	84.1	127	96.2	5	3.8
Female	147	79	53.7	73	92.4	6	7.6
Total	304	211	69.4	200	94.8	11	5.3

Source: Field data, 2019.

The questionnaires that were administered to the VTC trainees showed that the majority of the respondents 211 (69.4%) applied for the BCGBF, as illustrated in Table 5 The table also shows that more males (96.2%) than females (92.4%) applicants benefitted from the bursary. This meant that the majority of the respondents of the questionnaires applied for the BCGBF benefitted. It also meant that not all trainees applied for the bursary and that not all those who applied for the bursary were beneficiaries.

4.3. Trends of the Bungoma County Government Bursary and Access

The first objective of the current study was to determine the trend of the amount of Bungoma County Government Bursary Fund (BCGBF) and students' access to public VTCs in Bungoma County between the years 2014 to 2019. The purpose of this objective was to determine persistence in an increase or decrease in the amount of the BCGBF and students' access in terms of enrolment and completion rates.

4.3.1. Trends of the Bungoma County Government Bursary.

At inception, the Bungoma County Government Bursary Fund (BCGBF) was issued at the ward level through the Member of County Assembly's (MCA's) office. In the interviews that were administered to the principal instructors (also called managers) and SCVETOs, the majority of the respondents (48 (100%) for VTC managers) and (4 (100%) for the SCVETOs) believed that enough publicity had been done by the county governments about the existence of the bursary through public gatherings. This meant that VTC trainees knew about the existence of the BCGBF.

The allocation of the BCGBF to the applicants was being done at the ward level. In the follow-ups that were done on the interviews that were administered to the VTC managers, the respondents gave the following as the factors that were taken into consideration when awarding the bursary: 40 (83.3%) of the respondents said the residence of the applicant in the ward, 5 (10.4%) said availability of funds and 3 (6.3%) said the name of VTC. Thus, students received varied amounts of bursary on some occasions depending on some of the reasons stated by the respondents. The summation of the average amounts of the BCGBF per trainee per sampled VTC per year is illustrated in (appendix L). Table 6 illustrates the trends and percentage change of the BCGBF in the sampled VTCs.

Table 6

Trend of the BCGBF in sampled VTCs in Bungoma County

Year	Amount BCGBF	Percentage change of the amount of BCGBF
2014	188180	N/A
2015	168029	-10.71
2016	213861	27.28
2017	305594	42.89
2018	375711.7	22.94
2019	480000	27.76

Source: Field data, 2019.

The Table shows a fluctuation in the trend of the amounts of BCGBF that was awarded to the trainees of the sampled VTCs between 2014 to 2019. This means that the amount that was given to the trainees was not gradually increased as time passed. In the interviews that were administered to the principal instructors, the

respondents were asked to give the challenges that they were facing concerning the BCGBF and the respondents gave the following challenges, which are listed in their order of popularity:

i. Inadequacy of the amount.
ii. Delayed disbursement of the BCGBF.
iii. Political interference.
iv. The amount of the BCGBF not being constant.
v. Inadequate financial support from parents.
vi. The fact that the BCGBF passed through many hands.
vii. Lack of experience by managers in accounting.

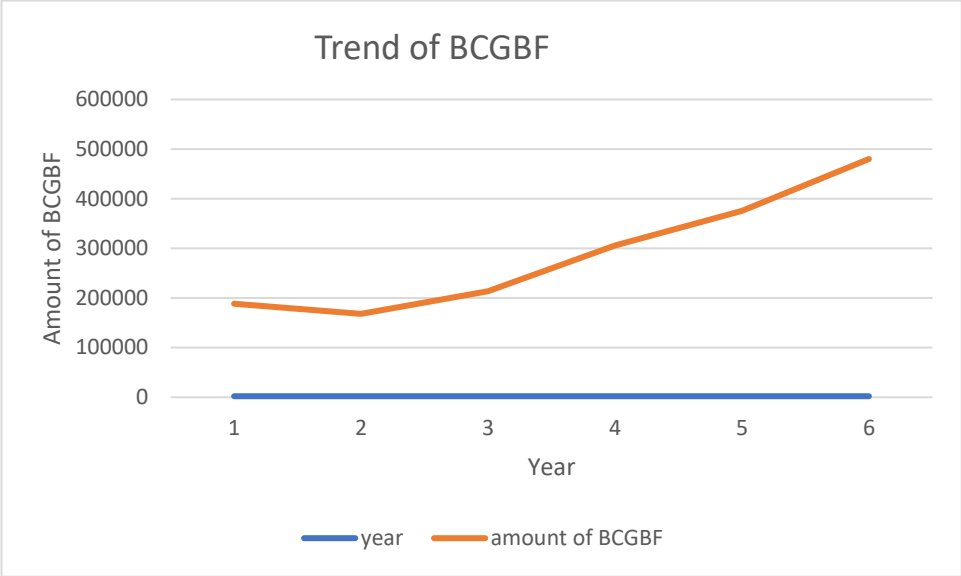
The follow-up that was made on the interviews administered to the managers established that the mount was inadequate because almost all courses were practical in nature meaning that the institutions had to spend most of the money to buy instructional materials which tended to be expensive and at times, inadequate. The respondents also said that the government would delay releasing the money on some occasions and since the money was being issued by the office of the ward representative, it was politicized in the sense that some VTCs were being used as conduits to youths who wanted to undertake driving as a course, in private institutions. The follow-ups also found that the amount was not constant because at times the trainees received less money than the amount of money received in the preceding year. Besides, some parents would take advantage of the existence of the bursary to abdicate their role of paying tuition fees since the politicians would often announce in public gatherings that the Bungoma county government had already paid for the tuition fees of the trainees. The existence of a red tape that the managers

had to follow to receive the money allocated to their trainees and the lack of experience of managers in accounting were also highlighted as challenges. This, as follow-ups ups found, was attributed to inadequate servicing of the managers (also called principal instructors) on financial management

The respondents thus suggested the following recommendations which were stated in the order of their popularity: timely disbursement of the BCGBF to enable VTC to budget appropriately, to increase the amount of BCGBF, centralization of the bursary to a common pool, VTCs not to be used as conduits for trainees who wish to undertake driving as a course in private institutions and that the bursary to be wired directly on VTC accounts to avoid misappropriation by top government officials. The SCVETOs confirmed that the county government of Bungoma had centralized the awarding of bursaries to the office of the director of TVET in Bungoma County. The trend of the bursary is further illustrated in Figure 2.

Figure 2

Illustration of the trends of the amount of BCGBF



Source: Field data, 2019.

Figure 2 shows that the percentage amount of bursary fluctuated. The interviews that were administered to principal instructors found that the majority of the respondents 24 (50.0%), believed that the amount of the BCGBF was inadequate, 17 (35.4%) of the respondents said that it was adequate and a minority 7 (14.6%) of the respondents believed that it was adequate and inadequate to a certain extent. Meaning that the amount should be increased to effectively perform the role for which the bursary was intended. The responses from the interviews that were administered on the SCVETOs yielded different responses from these principal instructors (managers) in that, the majority of the respondents 3 (75%) said that the amount of the BCGBF was neither adequate nor inadequate while the minority 1 (25%) of the respondents said that it was inadequate. The reasons they gave were listed in order of their priority as follows: inflation, the money was used to buy instructional materials that tended to be expensive, inconsistency of the amount of

BCGBF, inadequate support from parents, the amount of the BCGBF being disbursed in piecemeal and delayed disbursement. The main concern of the SCVETOs -as was established in the follow-ups- was that since the BCGBF was awarded per trainee, the amount when disbursed tended to benefit more, those VTCs that were densely enrolled more than those that were sparsely enrolled.

These findings confirmed those of the study by Baikuntha (2020), which established fluctuation in TVET budgetary allocation in Nepal, and the report by the Economic Survey 2023 which showed a fluctuation in the recurrent expenditure in the vocational and technical training department and in the county government expenditure on education between the 2018/19 to 2022/23 financial years (RoK, 2023), (because bursary is one of the examples of recurrent expenditure). However, these studies were different from the current study as they were carried out in Kenya in general and in Nepal and on TVET institutions in general and not specifically in Bungoma County and on VTCs.

4.3.2. Trends of Enrolment

The first objective of the current study also sought to determine the trends of students' access to public VTCs in Bungoma County between 2014 to 2019. Enrolment is one of the indicators of access. The purpose of this objective was to determine the persistence of an increase or decrease in enrolment. Table 7 illustrates the VTC enrolment in the sampled VTCs, per course, gender, and year.

In the table, the letter 'M' was used to denote males while, the letter 'F' was used to denote females, and the letter 'T' was used to denote Total. The data illustrated in Table 7 was acquired from the records that were available in the

sampled VTCs. The study collected the data, per VTC, per year and then categorized the data based on courses enrolled in by the VTC trainees. However, several VTCs did not specify the specific courses in which the trainees were enrolled but provided other information about the trainee like name and gender. Such information was illustrated as unlabeled data in the current study.

Table 7

VTC Enrolment per course, per gender, per year

	2014			**2015**			**2016**			**2017**			**2018**			**2019**		
	M	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**
Garment Making	51	901	**952**	66	908	**974**	64	812	**876**	57	738	**795**	52	1100	**1152**	42	1173	**1215**
Motor V. Mech.	542	24	**566**	736	29	**765**	588	28	**616**	517	18	**535**	713	72	**785**	1022	34	**1056**
Masonry	477	20	**497**	475	25	**500**	528	17	**545**	449	5	**454**	815	26	**841**	901	20	**921**
Electrical Wiring	167	21	**188**	301	22	**323**	236	50	**286**	223	16	**239**	419	89	**508**	673	36	**709**
Hair Dressing	6	128	**134**	12	185	**197**	5	224	**229**	16	145	**161**	28	339	**367**	26	432	**458**
Carpentry and J.	204	3	**207**	193	12	**205**	180	0	**180**	144	0	**144**	241	21	**262**	227	15	**242**
ICT	45	56	**101**	39	67	**106**	30	47	**77**	18	31	**49**	99	100	**199**	126	131	**257**
Plumbing	40	4	**44**	46	4	**50**	84	10	**94**	96	5	**101**	187	40	**227**	203	47	**250**
Arc. Welding	65	0	**65**	89	3	**92**	85	1	**86**	63	1	**64**	189	8	**197**	226	6	**232**
Driving	155	8	**163**	110	7	**117**	97	1	**98**	110	8	**118**	45	6	**51**	33	2	**35**
Food technology	6	48	**54**	6	38	**44**	15	13	**28**	5	26	**31**	35	110	**145**	24	126	**150**
Un labelled data	52	25	**77**	34	15	**49**	58	24	**82**	39	61	**100**	0	0	**0**	0	0	**0**
Agri-Business	0	2	**2**	0	0	**0**	0	1	1	0	1	**1**	75	64	**139**	65	55	**120**
Total enrolment	**1810**	**1240**	**3050**	**2107**	**1315**	**3422**	**1970**	**1228**	**3198**	**1737**	**1055**	**2792**	**2898**	**1975**	**4873**	**3568**	**2077**	**5645**

Source: Field data, 2019.

The Table shows that courses like Garment Making and Hair Dressing, Carpentry and Joinery, and Architectural Welding attracted enrolment from both genders and that the highest overall enrolment among both genders was recorded in the year 2019 (3568 males and 2077 females). Most of these courses were traditionally gender stereotyped as either male-oriented or female-oriented. Even in the Bible, in the King James Bible (2017, Gen. 3:16-17), the man was cursed to labor to provide for the family while the woman was cursed to experience child labor after having fallen from God's glory. So this has been the ideology that has directed many societies and has greatly contributed to gender stereotyping of roles based on gender. But this seemed not to be the case anymore as the study found that all courses attracted enrolment from both genders as was shown in Table 7. The trends of the enrolment are illustrated in Table 8.

Table 8

Trends of Gross Enrolment per gender in sampled VTCs

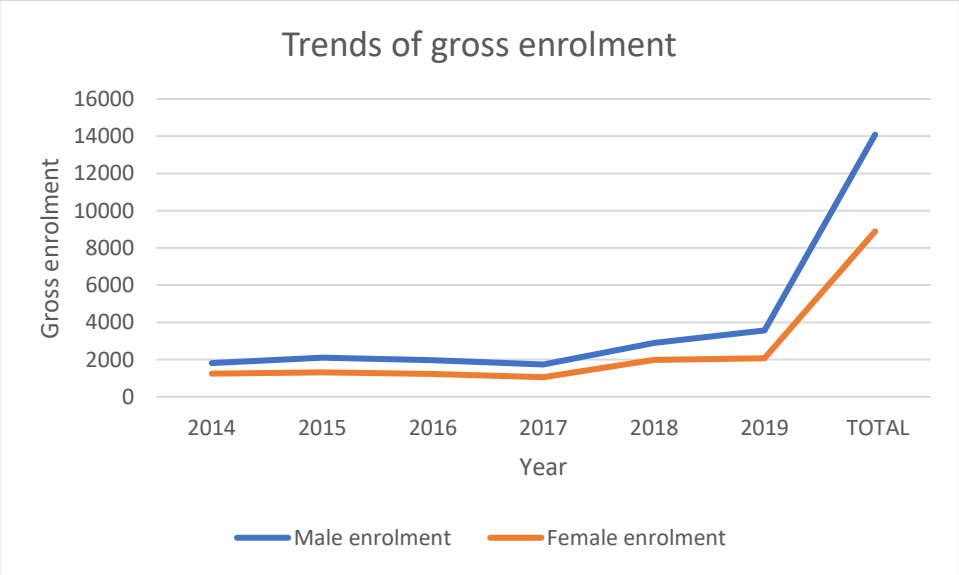
Year	**Male enrolment**	**% change in male enrolment**	**Female enrolment**	**% change in female enrolment**
2014	1810	N/A	1240	N/A
2015	2107	16.4	1315	6
2016	1970	-6.5	1228	-6.6
2017	1737	-11.8	1055	-14.1
2018	2898	66.8	1975	87.2
2019	3568	23.1	2077	5.2
TOTAL	**14090**		**8890**	

Source: Field data, 2019.

Table 8 shows a fluctuation in the trend of enrolment per gender. The table also showed a higher percentage change in enrolment among females (87.2%) than males (66.8%) in 2018. The figures on enrolment in Table 8 also show that the total enrolment was higher for males (14090) than females (8890) between 2014 and 2019 in the sampled VTCs. Meaning that there was gender disparity in enrolment and that female enrolment was increasing at a higher rate in comparison with enrolment of males. Figure 3 further illustrates the trend of enrolment per gender, in the sampled VTCs in Bungoma County between 2014 to 2019.

Figure 3

Illustration of the trends of enrolment per gender



Source: Field data, 2019.

Figure 3 shows that enrolment in the sampled VTCs fluctuated between 2014 to 2019. The findings in Figure 3 confirmed the findings by Oketch et al. (2019), who found that enrolment had increased by 31.8%, and the study by Ngugi and Muthima (2017), which established that there were gender disparities in enrolments in TVET subsector, in favor of the men. However, the studies of Oketch et al. and Ngugi and

Muthima were different from the current study in that, they were conducted on TVET in general and not particularly on VTCs, and Bungoma county was outside the scope of their studies. This therefore ascertained that gender parity as an intervening variable may have influenced enrolment into the VTCs.

4.3.3. Trend of Completion Rates

Completion is also an indicator of access and was discussed here as part of the first objective. There are three distinct grades in VTCs, the beginner grade is grade three III, followed by grade II and the topmost grade is grade one I. Transiting from the beginner to the topmost grade is determined by performance in national examinations (in a lower grade). These examinations are administered by national examination bodies like the Kenya National Examination Council (KNEC) and the National Industrial Training Agency (NITA). The fact that each course is expected to last a maximum of two years may create two extremes based on learners' cognitive abilities that is, first learners may complete the course in a short amount of time then slow learners who may take longer in the system. To establish the completion rates, the study used the formula borrowed from the work of, Sauro and Lewis (2016), which was discussed in chapter 3 under data analysis. The trend per course per gender per year is illustrated in Table 9. A more detailed report of completion rates per VTC is illustrated in (appendix M and N).

Table 9

Completion Rates per course in sampled VTCs

	2015		2016			2017	2018		2019	
	Male %	Fem. %	Male%	Fem. %	Male %	Fem. %	Male%	Female%	Male%	Female%
G. Making	9.7	37.7	13.7	10.9	9.1	8.8	1.6	16.7	10.5	16.3
Motor V. Mech.	28.8	42.9	15.5	12.5	9.8	10.3	16.5	3.6	18.8	16.7
Masonry	36.5	25	17.2	20	22.9	0	24.2	0	33.9	40
E.Wiring	46.5	400	23.9	52.4	14.6	36.4	40.7	10	37.7	6.3
H. Dressing	0	95.8	0	33.6	0	16.8	0	19.2	25	42.1
Carpentry and J	25.9	0	9.3	0	11.4	0	16.7	0	11.1	0
ICT	0	5.9	0	1.8	20.5	7.5	3.3	4.3	0	9.7
Plumbing & P. F	128.6	0	27.5	75	34.8	75	86.9	70	65.6	80
Arc.Welding	54.6	0	16.9	0	11.2	0	55.3	0	42.9	0
Driving	0	0	0	0	0	0	0	0	0	0
F. Tech.	0	31.3	50	16.7	16.7	10.5	6.7	46.2	0	73.1
U.L. data	51.9	58.6	61.5	68	226.5	206.7	0	0	0	0
Agri-B.	0	0	0	0	0	0	0	1000	0	900
	35.6	42.6	15.9	15.2	17.3	12.6	25.1	17.1	26.4	21.0

Source: Field data, 2019.

Table 9 shows that the male and female cohort of 2013-2015 had relatively the highest completion rates per course while the 2014-2016 male cohort and 2015-

2017 female cohort had relatively the lowest completion rates. Data on enrolment in 2013 was used to provide an analysis for a longer period term (five years). The calculations were made on the assumption that those who graduated in a given year were those who had enrolled in the preceding two years because it may be impractical to wait for all trainees to complete their courses before establishing their completion rates as noted in The National Centre for Vocational Education Research (NCVER, 2016).

This is because the concept of completion rates in Vocational Training Centres (VTCs) is far more complex than in mainstream education since program lengths of courses in VTCs vary based on the fact that their trainees are drawn from varied academic backgrounds and enrolment is continuous throughout the year. Therefore, it may naturally take longer for some trainees to complete their courses than others. The trends of the completion rates are illustrated in Table 10.

Table 10

The trend *of the Completion Rates*

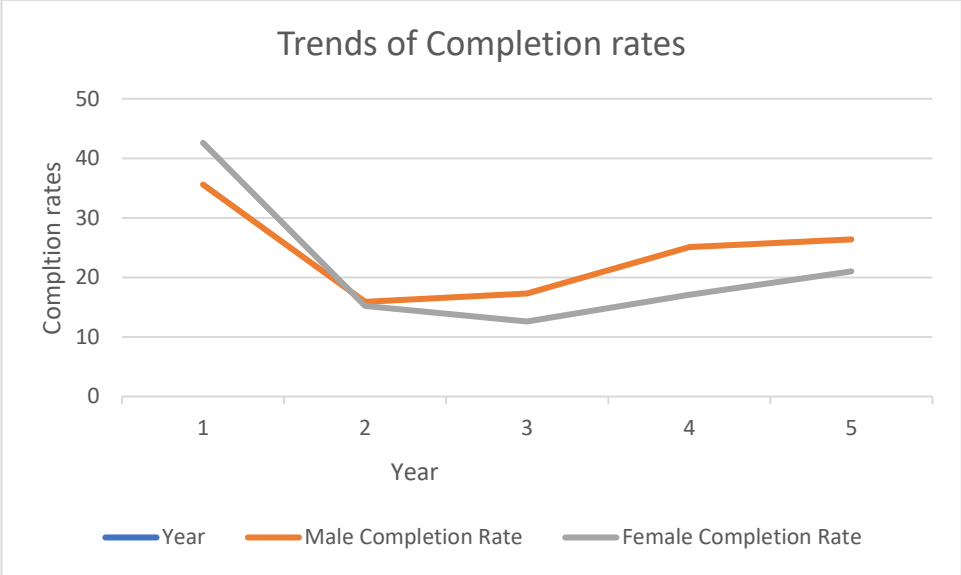
Year	Male completion rate	% change in male completion rates	Female completion rate	% change in female completion rates
2015	**35.6**	N/A	**42.6**	N/A
2016	15.9	-55.34	15.2	-64.32
2017	17.3	8.81	12.6	-0.17
2018	25.1	45.09	17.1	35.71
2019	26.4	5.18	21	22.81

Source: Field data, 2019.

Table 10 shows a fluctuation in the trend of the completion rates in the sampled VTCs in Bungoma County between 2015 to 2019. The trends were

calculated using the Thakur trend analysis formula (Thakur, n.d) that was discussed in chapter three under the analysis of data. The information in Table 10 is further illustrated in Figure 4.

Figure 4
Illustration of the trends of the completion rates.



Source: Field data, 2019.

The Figure shows that the completion rates per course fluctuated between 2015 and 2019 in the sampled VTCs. Thus, the completion rates for either gender did not assume a definite trend. Absenteeism and inadequate instruction materials are among the reasons that may contribute to the non-completion of courses in the VTCs because these may delay a trainee to master a given crucial concept on time, or lack the confidence to register for the national examination due to inadequate practical experiences. In the interviews that were administered to the VTC managers, the respondents were asked to give reasons for non-completion of courses in the VTCs, and the responses they gave are listed in order of popularity as follows:

unappealing state of infrastructure, inadequate publicity of achievements of the VTC trainees and misappropriation of funds by the VTC managers.

The follow-ups made on the interviews pertain to the stated reasons found that some VTCs lacked proper functioning workshops and were using outdated instruments which was a major discouragement for some of the trainees. The follow-ups also found that inadequate publicity of the achievements of the VTC trainees was a major demotivator among some of the trainees and also misappropriation of funds by the VTC managers. Misappropriation of funds was a challenge because the lack of funds left the VTCs in a state where they were unable to purchase the basic instruction materials that they needed to carry out teaching and learning. In the absence of these materials, students would be left idling and some would opt for part-time jobs and never return to complete their courses.

The findings of the current study were in tandem with those of the studies by Baituti (2014), and Oketch et al (2019), which established that the dropout rates were high. However, unlike the current study, the study by Oketch et al (2019) was conducted on secondary schools in Siaya County. Moreover, access as a dependent variable fell outside the scope of the study by Oketch et al (2019) as their study sought to establish the extent of equitable distribution of bursaries.

Fluctuation in the trend of bursary and access should be a matter of concern, especially for the educational planner because unless the existing vagueness is addressed access with precision, the implementation of effective and efficient decisions may become a challenge. what remains vague here is the fact that there was fluctuation in the allocation of bursary per trainee per year and that enrolment and completion rates in the VTCs in Bungoma County fluctuated between 2014 to

2019. Therefore, the question: What is the trend of the amount of BCGBF and students' access (gross enrolment and completion rates) from VTCs in Bungoma County between 2014 to 2019? Was answered that the amount of BCGBF fluctuated, the gross enrolment fluctuated and completion rates fluctuated.

4.5.1. The Relationship between the BCGBF and Gross Enrolment in VTCs

The second objective of the study was to determine the relationship between the amount of BCGBF and gross enrolment in VTCs between 2014 to 2019. A study by Palmer (2015), had expressed concerns about the inadequacy of feedback on investment of government funds into education institutions. Therefore, the purpose of this objective was to establish the link between the amount of the BCGBF and enrolment per VTC. To achieve this, the study analyzed the admission registers and the accounts records that were available in the sampled VTCs. Interviews were also administered with the VTCs managers (principal instructors) and the Sub County Vocational Education Training Officers (SCVETOs) to establish the link between the amount of the BCGBF and enrolment. Table 11 illustrates a summary of the total amount of BCGBF per trainee per VTC and gross enrolment in the sampled VTCs in Bungoma County between 2014 and 2019. The comprehensive list per sampled VTC is in Appendix O.

Table 11

BCGBF and Gross Enrolment in the sampled VTCs in Bungoma County.

Year	Total average of BCGBF	Male enrolment	Female enrolment	Total enrolment
2014	188180	1810	1240	3050
2015	168029	2107	1315	3422
2016	213861	1970	1228	3198
2017	305594	1737	1055	2792
2018	375711.7	2898	1975	4873
2019	480000	3568	2077	5645

Source: field data, 2019.

The Table shows a fluctuation in the amount of the Bungoma County Government Bursary Fund (BCGBF) and a fluctuation in the total enrolment in the sampled VTCs. In the interviews that were administered by the principal instructors (managers) and the SCVETOs, the respondents were asked to give their opinion on the relationship between the amount of the BCGBF and enrolment, and the majority of the principal instructors 38 (79.2%), just like the majority of SCVETOs 3 (75%) said that the relationship was positive. The responses are illustrated in Table 12.

Table 12

Responses by the principal instructors to the question 'In your opinion, what was the relationship between the amount of BCGBF and enrollment into VTCs?

Category of response	Relationship of BCGBF and enrolment	Frequency	%
3	Positive	38	79.2
2	positive and negative	3	6.3
1	No relationship	7	14.6
X^2 =	6.57		

Source: Field data, 2019.

The Table shows that the majority of the respondents 38 (79.2%) believed that the relationship between the BCGBF and enrolment was positive. The reasons they gave for the response are listed in their order of popularity: the majority of the trainees came from poor backgrounds and the money enabled VTCs to purchase some instructional materials. The follow-ups were made and the respondents explained that since most trainees of VTCs hailed from poor backgrounds, the BCGBF was the only way through which such trainees could afford to access the VTCs. They also said that the money received from the Bungoma County Government in the form of a bursary enabled many VTCs to purchase the much-needed instructional materials and as such, maintain the trainees in the VTCs while keeping them engaged. A minority of the respondents 7 (14.6%) who believed that the amounts of VTCs had no relationship with the enrolment into VTCs gave the reason that the institutions were marred with negative attitudes from both the community and as such people were not attracted to enroll into them.

The respondents 3 (6.3%) who believed that the amount of BCGBF had both a positive and negative relationship with enrollment attributed their opinion to political interference. From the follow-ups that were made on the interviews, the study found that while politicizing the funding (BCGBF) of the VTCs created awareness about the existence of the bursary, in some cases, it may make trainees shun them depending on how the publicity is conducted. One example that was given was that some politicians announced in public gatherings that, 'all those who failed exams should join VTCs because the Bungoma County Government Bursary Fund would carter for their tuition.' This statement was seen by some respondents as a deal breaker. The other response they gave was that the VTCs were being used as conduits for trainees who wanted to undertake driving courses in private institutions because even most trainees were unable to pay the subsistence amount that was required by the VTCs.

Using the chi-square test, the study established that the calculated value was $X^2_{(2)} = (2.75)$ Using the table for the critical value of X^2 (in Appendix K), with 2 degrees of freedom and at a significance level of 5%, the study established the critical value in the table as 5.991. The *P* value was ($p<.013$). Thus, ($2.75, p<.013$). This meant that the relationship between the amount of BCGBF and enrolment was positive. The same question was put to the SCVETOs during the interviews that were administered to them under the current study and the responses they gave are illustrated in Table 13.

Table 13

Responses by the SCVETOs to the question 'In your opinion, what was the relationship between the amount of BCGBF and enrolment into VTCs?

Category of response	Relationship of BCGBF and enrolment	Frequency	%
3	Positive	3	75
2	Positive and negative	0	0
1	No relationship	1	25
$X^2 = 1.66$			

Source: Field data, 2019.

Table 13 shows that the majority of the respondents believed that the amount of the BCGBF had a positive relationship with enrolment in the sampled VTCs in Bungoma County between 2014 to 2019 depending on the location of the VTCs. A follow-up on the interview found that when the VTC was located in the rural area, the amount would be manageable because some of the instructional materials like wood for the carpenters, could be locally sourced at a cheaper price. The respondents who said that the bursary had no relationship with enrolment said that there were often delays in the disbursement which made some youths not enroll in the VTCs due to lack of finances, as the delay could take up to more than six months in some cases.

Using the chi-square test, the study established that the calculated value was $X^2_{(2)} = (1.66)$. Using the table for the critical value of X^2 (in Appendix K), with 2 degrees of freedom and at a significance level of 5%, the study established the critical value in the table as 5.991. The *P* value was ($p<.013$). Thus, (1.66,$p<.013$).

This meant that the relationship between the amount of BCGBF and enrolment was positive.

4.5.2. Pearson's Coefficient of Correlation Analysis for BCGBF and Gross Enrolment in the VTCs

To measure the strength and direction between the independent variable (amount of BCGBF) and dependent variable (gross enrolment). The study used Karl Pearson's product-moment correlation coefficient formula. The varied average amount per VTC of the BCGBF was correlated with the total enrolment per VTC (varied amounts of BCGBF and 48 sampled VTCs). The study established that there was a statistically significant positive relationship between the BCGBF and trainees' enrolment in the sampled public VTCs (r= .335) between 2014 to 2019. This meant that the strength of the positive relationship between the independent variable (amount of BCGBF) and the dependent variable (gross enrollment) was weak (r= .335) (Kothari, 2004).

4.5.3. Regression Model on the Relationship between BCGBF and Gross Enrolment

To test the null hypothesis *H*o1: b=0, the study used a simple linear regression model. In linear regression models the, dependent variable is the factor being predicted and the factor that is being used to predict is the independent variable (Wasike et al., 2020a). The working out was done on Microsoft Excel using the data analysis function and the summary report is illustrated in Table 14 while the residual plot is illustrated in Figure 5. The model was in the form: $Y = a + bX$, (Kothari, 2004)

Table 14

Summary output of the regression statistics on the Relationship between the amount of BCGBF and Gross Enrolment in sampled VTCs

Model	R2	Adjusted R2	Standard error	t Statistics	*P*-value	Observations	Coefficients
1.	0.027	0.023	43.61685			Intercept	59.466
				2.498	.013	BCGB	0.0025

Source: Field data, 2019.

The hypothesis for the current objective was that there is no statistically significant relationship between the amount of BCGBF and gross enrolment in public VTCs between 2014 to 2019. Using the findings in Table 14, the study deduced that the slope was 59.466 and the intercept was 0.002 (using the coefficients), and thus the regression model was substituted as follows: $Y = 59.466 + 0.002x$

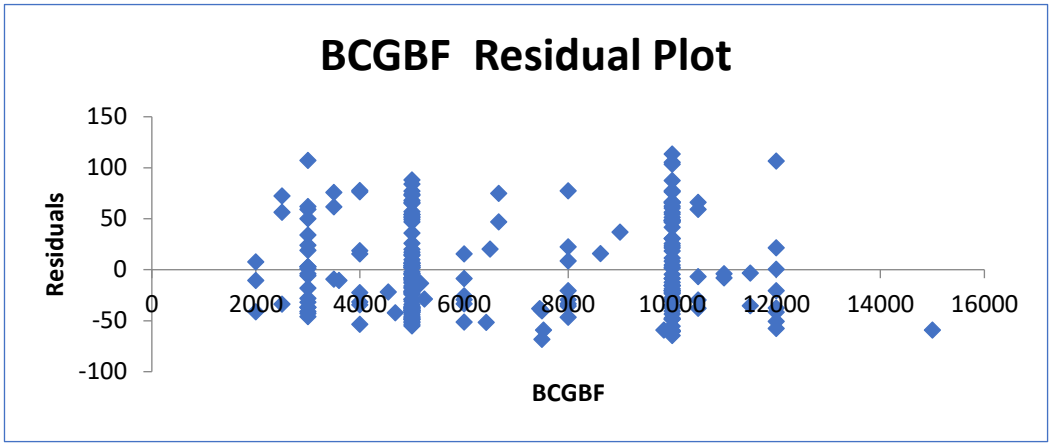
Table 14 also shows that the standard deviation of error was 43.61685 and that the *p*-value was (*p*=.013). *P* values range from 0 -1. Tanha et Al. (2017), recommend that, when the *p-value* is small, the study should reject the null hypothesis. To test the null hypothesis against the alternate hypothesis, the current study conducted various other tests, more so, to establish the nature of the relationship between the amounts of BCGBF (independent variable) and gross enrolment (dependent variable). Key among these tests was the coefficient of determination. This was used to assess the amount of variation in gross enrolment that could be explained by the amounts of BCGBF (Sincich, 2011).

4.5.4. Coefficient of Determination

Sincich (2011), suggested that the study should establish the square root of R^2 whereby a correlation that is greater than 0 leads to rejection of the null hypothesis. Using R^2 in Table 14, ($\sqrt{0.0275}$), the study arrived at a solution (0<.16), which was greater than 0 (Sincich, 2011). This was an indication that BCGBF explained 2.7% of the variation in the gross enrolment and as such, 97.3% of the variation in gross enrolment could be attributed to causes other than the BCBGF like fees charged, regularity of attendance, gender parity, adequacy of funding and nature and variety of courses offered in the VTCs.

The BCGBF is given to the VTC trainees to ease their burden of paying tuition fees (Chiu and Chen, 2023), however, it is often difficult to establish with certainty, exactly how much money would be required to enable the trainees to enroll in their courses of preference. The answer to such a question may vary from person to person as the types and levels of needs differ from one individual to another. And that is why, even though there was a relationship between the amount of BCGBF and gross enrolment, there were other factors that were at play as was evident from the findings of the coefficient of determination (2.7%). The relationship between the amounts of the BCGBF and gross enrolment was further illustrated in the residual plot in Figure 5.

Figure 5
The residual plot for the relationship between BCGBF and gross enrolment in sampled VTCs



Source: Field data, 2019).

The residual plot in Figure 5 shows that the independent variable (amount of BCGBF) was positively related to the dependent variable (gross enrolment) in the sampled VTCs between 2014 and 2019. The values were however widely distributed away from the best-fitt line thus, suggesting a weak relationship between the amount of the BCGBF and gross enrolment. This made the study test the hypothesis that there is no statistically significant relationship between the amount of BCGBF and gross enrolment in the sampled VTCs between 2014 to 2019. The chichi-squarest on the findings from the interviews that were administered on the principal instructor (managers) ($X^2(_2)$ = (6.57, P<0.013) and SCVETOs ($X^2(_2)$ = (1.66, P<0.013) showed that X^2 was larger than the calculated data and critical data (5.991), the Karl Pearson's product-moment correlation coefficient showed a positive relationship between the independent variable (amount of BCGBF) and the dependent variable (gross enrolment) in the sampled VTCs (r=.335) (Kothari, 2004), the residual plot showed a positive relationship and the coefficient of determination established that amount of the BCGBF could explain (2.7%) of the variation in enrolment (Sincich, 2011). The adjusted R^2 was (2.3%). This led the current study to reject the null

hypothesis that there was no statistically significance relationship between the amount of BCGBF and gross enrolment in public VTCs between 2014 to 2019.

The interpretation was that the increase in the amount of BCGBF in the sampled VTCs between 2014 to 2019 had a positive relationship with enrolment. This was supported by the findings from the interviews that were administered to VTC managers and the SCVETOs. This information is crucial for the policymakers as it provides statistics that can be referenced when formulating new policies concerning the amounts of BCGBF and enrolment. The statistics are also timely as they can also be used by taxpayers who may require feedback on the performance of the BCGBF.

The findings of the current study were supported by the argument of the socialist economics of education theory in that, bursaries create an environment where there is equality in enrolment as the youth from poor backgrounds are enabled to access education at a cheaper cost like their rich counterparts. In other words, the initial barrier to accessing education (tuition fees) is removed. The findings are equally supported by the principle of demand and supply because a reduction in tuition prices makes the institutions attractive to many people who may have initially been disadvantaged due to the lack of school fees. Especially those from economically needy backgrounds.

Besides, the findings were in tandem with studies by Okwemba (2014), Oketch et al. (2019), Wasike et al. (2020b), and Nzuki (2017), which established that government financial initiatives, positively affected enrolment. However, unlike the current study that was conducted on VTCs in Bungoma County, the said studies were conducted on VTCs in Kakamega County, on secondary education in Siaya

County, on TVET institutions in Bungoma County (not specifically VTCs) and on secondary schools in Yatta sub-county respectively. Besides, financial initiatives in the studies by Oketch et al. (2019), Wasike et al. (2020b), and Nzuki (2017) included both bursaries in terms of CDF and free day secondary school education while, in the study by Okwemba (2014), financial initiatives was not among the key variables, unlike the current study whose main focus was on the BCGBF.

4.6.1. The Relationship between the amount of the BCGBF and Completion Rates in VTCs.

The third objective was to determine the relationship between the amount of BCGBF and completion rates in public VTCs between 2015 to 2019. The purpose of this objective was to establish the extent of the link between the amount of BCGBF and completion rates. To achieve this, the study analyzed the registers on completion and the accounts records that were available in the sampled VTCs. Interviews were also administered with the VTC managers (principal instructors) and the Sub County Vocational Education Training Officers (SCVETOs) to get their opinion about how the amount of BCGBF was related to completion rates. Table 15 illustrates the amount of BCGBF and the completion rates in the sampled VTCs in Bungoma County. A comprehensive table that illustrates the actual figures per VTC per year is in Appendix P.

Table 15

*Summation of **the** average amount of BCGBF per trainee per VTC and the Completion Rates*

Year	Total average of BCGBF	Male completion rate	Female completion rate
2015	188180	35.6	42.6
2016	168029	15.9	15.2
2017	213861	17.3	12.6
2018	305594	25.1	17.1
2019	375711.7	26.4	21
	480000		

Source: Field data, 2019.

The total average amount of the BCGBF fund illustrated in Table 15 was arrived at by summation of the average amount of BCGBF awarded per VTC per trainee, per year. The Table shows that the total average amount of BCGBF fluctuated and that completion rates for both males and females fluctuated between 2015 to 2019. The findings were supported by the interviews that were administered to VTC principal instructors (managers), in which, the majority of the respondents 31 (64.6%) said that the amount of BCGBF was positively related to completion. The follow-ups ups that were made on the interviews found that the BCGBF had increased retention rates and eased the burden of paying fees and as such, many trainees were able to meet the cost of the examination. While, the minority of the respondents 17 (35.4%), said that the amount of BCGBF had no relationship with completion rates. The reasons they gave were that the examination fees were very expensive and that most of the trainees did not return to complete their courses when they went for industrial attachment.

The study conducted follow-ups on these interviews and established that since the bursary was partial payment of the tuition fees, it was not sufficient to cater for the examination fees that were to be paid by the trainees as part of the registration and that is why the respondents believed that it did not affect completion rates. The follow-ups also established that most of the trainees were paid money as casual laborers when they went for industrial attachment and as such, some may have opted to continue earning a living and gaining experience on the job rather than going back to complete their courses.

The interviews that were administered on the SCVETOs established that the majority of the respondents 3 (75%) believed that the amount of BCGBF had no relationship with completion rates. The reasons they gave were that it did not cater for examination fees, and the minority of the respondents 1 (25%) believed that the amount of BCGBF positively related to completion rates. The reasons they gave were that increased number of those who were able to complete courses after its introduction. The findings of the interviews administered on SCVETOs were contrary to those of the interviews administered to the managers. The study thus conducted a correlation between the amount of BCGBF and completion rates using Karl Pearson's product-moment correlation coefficient formula.

4.6.2. Pearson's Coefficient of Correlation Analysis for the amount of BCGBF and Completion Rates

To measure the strength and direction between the independent variable (amount of BCGBF) and the dependent variable (completion rates). The study used Karl Pearson's product-moment correlation coefficient formula. The average amount per trainee per VTC of the BCGBF was correlated with the completion rates (varied

amounts of BCGBF and completion rates in 48 sampled VTCs). The study established that there was a statistically significant positive relationship between the amount of BCGBF and completion rates in the sampled public VTCs (r= .087) between 2015 to 2019. This meant that the strength of the positive relationship between the independent variable (amount of BCGBF) and the dependent variable (completion rates) was very weak (r=.087) (Kothari, 2004).

4.6.3. Regression Model on the Relationship between BCGBF and Completion Rates

To test the null hypothesis *H*o2: b=0, the study used a simple regression model. The working out was done on Microsoft Excel using the data analysis function and the summary report is illustrated in Table 16 while the residual plot is illustrated in Figure 6.

Table 16

Summary output of the Regression Statistics on the Relationship between the amount of BCGBF and Completion Rates in sampled VTCs

Model	**R2**	**Adjusted R2**	**Standard error**	**t Statistics**	***P*-value**	**Observations**	**Coefficients**
1.	0.051	0.044	22.11909	-2.840	.005	Intercept	40.502
						BCGB	-0.001

Source: Field data, 2019.

The hypothesis for the current objective was that there is no statistically significant relationship between the amount of BCGBF and completion rates in public VTCs between 2015 to 2019. Using the findings in Table 16, the study deduced that the slope was 40.502 and the intercept was -0.001 and thus the regression model was substituted as follows: $\mathrm{Y} = 40.502 - 0.001x$

The Table also shows that the standard deviation of error was 22.119 and that the *p*-value was (*p*=.005). The *p*-value was small and as such, there was a need to reject the null hypothesis (Tanha et Al., 2017). To test the null hypothesis against the alternate hypothesis, the current study conducted various other tests, like the coefficient of determination. This was used to assess the amount of variation in gross enrolment that could be explained by the amounts of BCGBF (Sincich, 2011).

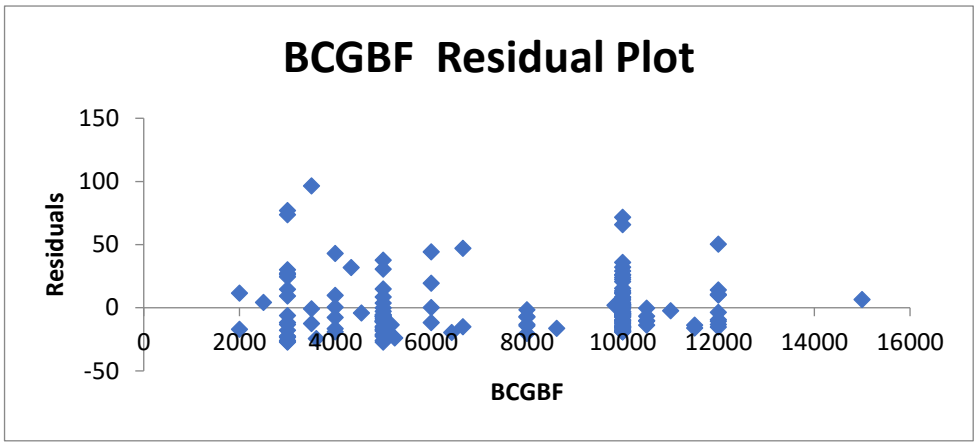
4.6.4. Coefficient of Determination

Sincich (2011), suggested that the study establishes the square root of R^2 and noted that, if a correlation was greater than 0, the null hypothesis was to be rejected. From Table 4.13, (R^2 = 0.051) the working out was as follows: ($\sqrt{0.051}$), the study arrived at a solution (0<.22), this was greater than 0. This was an indication that BCGBF explained 5.1%% of the variation in the completion rate and as such, 94.9% of the variation in completion rates could be attributed to causes other than the BCBGF for instance, fees charged, regularity of attendance, gender parity, adequacy of funding and nature and variety of courses offered in the VTCs.

Examinations in the VTCs are administered by national examination bodies like the Kenya National Examinations Council (KNEC) and the VTC trainees are required to register for the examination by paying a fee. Those who fail to register for the examination by paying the examination fee are not allowed to sit the examination. The interviews that were administered to the VTC managers and SCVETOs pointed to the challenge of delayed disbursement of the BCGBF and its inadequacy. The findings that were illustrated in Table 15 equally showed gender disparity in the trends of the completion rates between males and females. The study

also employed the use of the residual plot that was used to illustrate the relationship between the amount of BCGBF and completion rates, as illustrated in figure

Figure 6
*Illustration of the relationship between BCGBF and completion rates***.**



Source: Field data, 2019.

The residual plot in Figure 6 shows that the independent variable (amount of BCGBF) was positively related to the dependent variable (completion rates) in the sampled VTCs between 2014 and 2019. The values were, however, widely centered around the axis and away from the best-fit line thus, suggesting a very weak relationship between the amount of the BCGBF and completion rates. This made the study test the hypothesis that there is no statistically significant relationship between the amount of BCGBF and completion rates in the sampled VTCs between 2015 to 2019. The Karl Pearson's product-moment correlation coefficient test showed a positive relationship between the independent variable (amount of BCGBF) and the dependent variable (completion rates) in the sampled VTCs (r=.087) (Kothari, 2004), the residual plot showed a positive relationship between the amount of BCGBF and completion rates and the coefficient of determination established that amount of the BCGBF could explain (5.1%) of the variation in completion rates and the Adjusted

R^2 squared was 4.4%. This led the current study to reject the null hypothesis that there was no statistically significant relationship between the amount of BCGBF and completion rates in public VTCs between the years 2015 to 2019.

The interpretation was that the increase in the amount of BCGBF in the sampled VTCs between 2015 to 2019 had a positive impact on completion rates that is to say, as more money was given to trainees in the form of bursary, more of them were able to complete their courses and sit exams. These findings were supported by the findings from the majority of the respondents among the VTC managers 31 (64.6%) who said that there was a positive relationship between the amount of BCGBF and completion rates but were different from the findings from the majority of the respondents among SCVETOs 3 (75%)who said that the amount of BCGBF had no relationship with completion rates. This information is crucial for the education planner as it provides statistics that the planner can rely on when making decisions about the wastage rate in public Vocational Training Centres (VTCs).

The findings of the current study were supported by the argument of the socialist economics of education theory in the sense that, trainees from poor backgrounds would be able to complete their courses just like those from rich backgrounds. This would in turn enable the trainees from poor backgrounds to gain adequate skills that would make them employable and earn a living. The courses offered in VTCs enabled the trainees to acquire skills that were required in the labor market, for instance, the locally available industries like building and construction. This would help in removing inequality between the rich and the poor in terms of access to education and access to basic needs. The findings were equally supported by the principle of demand and supply because, both the statistics and the interviews

administered by the principal instructors established that, there was a positive relationship between BCGBF and completion rates. Meaning that, as the bursary catered for part of the tuition fees in the VTCs, the amount of fees required to be paid by the potential trainees was reduced and as such, many trainees (from economically needy backgrounds/those who were initially unable to afford the full cost of tuition) were economically relieved and as such, were able to meet the cost of examination.

The findings of the current study were in tandem with the findings of the study by Nzuki (2017), which established that bursary positively affected completion, and the findings of the study by Obwari (2013), which established that the Constituency Development Fund (CDF) increased graduation rates. These studies were different from the current study because they were conducted in counties other than Bungoma County.

CHAPTER FIVE

5.0. SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

This chapter presents a summary of findings, conclusions, and recommendations that help to better the Bungoma County Government Bursary Fund (BCGBF) and subsequently enhance access in public VTCs and suggestions for further research. The conclusions were based on the research findings.

5.2.1.1 Summary of the Findings.

The findings were summarized according to objectives: to establish the trends of the amount of Bungoma County Government Bursary Fund (BCGBF) and students' access to public VTCs in Bungoma County between 2014 to 2019, to determine the relationship between the amount of BCGBF and gross enrolment in public VTCs between 2014 to 2019, to determine the relationship between the amount of BCGBF and completion rates in public VTCs between 2015 to 2019.

5.2.1.2. Trends of the Bungoma County Government Bursary

The study established that there was fluctuation in the trend of the amounts of BCGBF that was awarded to the trainees of the sampled VTCs between 2014 to 2019. From the interviews that were administered: the majority of the principal instructors 24 (50.0%), said that the amount of the BCGBF was inadequate, 17 (35.4%) said that it was adequate and inadequate and a minority 7 (14.6%) believed that it was adequate and inadequate to a certain extent. The interviews that were administered on SCVETOs found that the majority of the respondents 3 (75%) said

that the amount of the BCGBF was neither adequate nor inadequate while the minority 1 (25%) said that it was inadequate.

5.2.1.3. Trends of Enrolment

The findings of the study showed that there was a higher trend in enrolment among females (87.2%) than males (66.8%) in 2018. The study also found that the general enrolment was higher for males (14090) than females (8890) between 2014 and 2019 in the sampled VTCs. The study also established that enrolment in the sampled VTCs fluctuated between 2014 to 2019.

5.2.1.4. Trend of Completion Rates

The study established that the male and female cohorts of 2013-2015 had relatively the highest completion rates per course while the 2014-2016 male cohort and 2015-2017 female cohort had relatively the lowest completion rates and that there was a fluctuation in the trend of the completion rates in the sampled VTCs in Bungoma County between 2014 to 2019.

5.2.2. The Relationship between the amount of BCGBF and Gross Enrolment in VTCs

The chi-square test on the responses from the interviews that were administered to principal instructors and the SCVETOs on the relationship between the amount of BCGBF and enrollment found that $X^2_{(2)} = (6.57, p<.013)$ (principal instructors) and $X^2_{(2)} = (1.66, p<.013)$ (SCVETOs). The strength and direction between the amount of BCGBF and gross enrolment was (r= .335), Karl Pearson's coefficient of correlation. The *p*-value was (p=.013). R^2 (= 0.0275) and the residual plot showed that the values were widely distributed away from the best-fit line.

The null hypothesis that there is no statistically significant relationship between the amounts of BCGBF and gross enrolment in public VTCs between 2014 to 2019 was rejected based on the following findings: chi-square calculated values $X^2_{(2)}$ = (6.57, *P*<0.013) and $X^2_{(2)}$ = (1.66, *P*<0.013), Karl Pearson's product-moment correlation coefficient r (=.335), positive relationship between the independent variable and the dependent variable shown in the residual plot, findings of the coefficient of determination (2.7%) and the Adjusted R^2 squared 2.3%.

5.2.3. The Relationship between the amount of the BCGBF and Completion Rates in VTCs.

The study established that the majority of VTC principal instructors 31 (64.6%) said that the amount of BCGBF was positively related to completion rates while a minority 17 (35.4%) said that the amount of BCGBF had no relationship with completion rates. Similarly, the majority of the SCVETOs 3 (75%) said that the amount of BCGBF had no relationship with completion rates while minority 1 (25%) said that the BCGBF was positively related to completion rates. The strength and direction between the amount of BCGBF and completion rates was (r= .087), Karl Pearson's coefficient of correlation. The *p*-value was (*p*=.005). R^2 (= 0.051) and the residual plot showed that the values were widely centered around the horizontal axis and away from the best-fit line.

The null hypothesis that there is no statistically significant relationship between the amounts of BCGBF and completion rates in public VTCs between 2015 to 2019 was rejected based on the following findings: Karl Pearson's product-moment correlation coefficient (r=.087), positive relationship between the

independent variable and the dependent variable shown in the residual plot, coefficient of determination (5.1%) and the Adjusted R^2 squared 4.4%.

5.3. Conclusion.

On the trends of the amount of BCGBF and access, the study established that there was a fluctuation in the amount of BCGBF, fluctuation in enrolment, and fluctuation in completion rates. This meant that there was no steady increase in the amount of BCGBF, enrolment, or completion rates between 2014 to 2019.

On the relationship between the amount of BCGBF and gross enrolment, the study found a positive relationship between the amount of BCGBF and gross enrolment. As such, the null hypothesis that there is no statistically significant relationship between the amounts of BCGBF and gross enrolment in public VTCs between 2014 to 2019, was rejected on the following basis: findings of chi-square, Karl Pearson's product-moment correlation coefficient, indicators on the residual plot, findings of the coefficient of determination and the Adjusted R^2 squared.

On the relationship between the amount of BCGBF and completion rates, study found a positive relationship between the amount of BCGBF and completion rates. Therefore, the null hypothesis that there is no statistically significant relationship between the amounts of BCGBF and completion rates in public VTCs between 2015 to 2019, was rejected on the following basis: Karl Pearson's product-moment correlation coefficient, indicators on the residual plot, findings of the coefficient of determination and the Adjusted R^2 squared.

5.4. Recommendations

i. On the trend of the amount of BCGBF and students' access to public VTCs, the study recommends changing the system of allocation of BCGBF to appreciate the needs of trainees.
ii. On the relationship between the amount of BCGBF and gross enrolment, the study recommends that the amount allocated per trainee should be increased to cover the full cost of the course.
iii. On the relationship between the amount of BCGBF and completion rates, the study recommends the expansion of the fund to cater for examination fees.

5.5. Suggestion for Further Research

The researcher recommends further studies concerning:

i. A study of the other factors that influence access to vocational training centers in Bungoma County and other counties country-wide.
ii. A study on the relationship between other government financial initiatives and access to VTCs.

Reference

Akinyi, R.A., Nyerere, J.K.A. & Kariuki, S.I., (2021). Internal efficiency of public vocational training centers in Kenya. *African Educational Research Journal*, *9*(2), 375-384. https://doi.org/10.30918/AERJ.92.21.057

Ary, D., Jacobs, L.C. & A. Razavieh. (1972). *Introduction to research in education*. New York: Holt, Rinehart and Winston Inc.

Baikuntha, P.A. (2020). Financing of technical and vocational education and training in Nepal. *Journal of Education and Research*, *10*(1), 58-80. https://doi.org/10-3126/jer.v10i/31898

Baituti, I.M., (2014). Factors influencing students' acquisition of vocational skills in vocational training centers in igembe and Tigania districts of Meru county, Kenya. https://www.voced.edu.au

Bateman, A., Cassity, E. and Fangalasuu, J. (2014). Research report into the financing of technical and vocational education training (tvet) in the pacific*:* Solomon Islands: Country report. *Australian Council for educational research (acer*). ISBN (978-1-74286-274-3) https://www.acer.edu.au

Bhandari, P. (2021, July 7). *Correlation research/when and how to use.* Scribbr. https://www.scribbr.com/*correlationresearch-when-and-ho-to-use*

Bwisa, H.M. (2014, February 5). *Challenges of managing youth polytechnics*. The Star. http://www.the-star.co.ke/news/article-153816/challengesmanaging-youth-polytechnics

Callender, C. (2010). Bursaries and institutional aid in higher education in England: do they safeguard and promote fair access? *Oxford review of education, 36*(1), 45-62. http//www.jstor.org/stable/27784609

Chiu, K.C. and Chen, R.C. (2023). The analysis of bursary satisfaction and learning performance for disadvantaged students: A case study from Taiwan. *Education sciences journal, 13*(5), 513. https//doi.org/10.3390/educsci13050513

Colander, D. (1994). *History of economic thought*. Third edition. M.A: Houghton Miffin.

Dynarski S.M. (2007). The economics of student aid. *National bureau of economic research reporter*. Research Summary. https://www.econstor.ed

Dzuya, G.K.J. (2020). Effects of county bursary on completion rates among university students in Kwale county, Kenya between the years *2014/15 to 2017/18*. https://ir-library.ku.ac.ke

Eshiwani, G.S. (1993). *Education in kenya since independence*. Nairobi: East African Publishers Limited.

Fieger, P. (2015). Determinants of course completion in tvet: Evidence from Australia. *Empirical Research in Vocational Education and Training*, (14). https://doi.org/10.1186/s40461-015- 0025-5

Gillen, A. (2012). Introducing Bennett hypothesis 2.0. Centre for college affordability and productivity. https://files.eric.ed.gov/fulltext/ED536151.pdf.

Haolader, F.A. (2015). Entrepreneurship education in tvet and small and medium enterprise development: A case study in Bangladesh. *Bangladesh Education Journal*, *14*(2), ISSN 1811-0762.

Heller, D.E. (2013). *Does federal financial aid drive up college prices?* American Council on Education.

Hornby, A.S., (2015). *Oxford advanced learner's dictionary* (New 9th ed.). London: Oxford University Press.

Jayaram, K. and Sinaceur, M. (2016, December 13). *Vocational education key to solving joblessness and growing economy*. Capital FM. https://www.capitalfm.co.ke

Jweiles, Z. (2017). *Enhancing institutionalized partnerships between tvet institutions and the world of work in palestine*. UNESCO. https://en.unesco.org/

King James Bible (2017, Gen. 3:16-17). King James Bible Online. https://www.kingjamesbibleonline.org/ (original work published 1769)

Kiplagat, H., Ferej A. and Kafu P. (2016). Factors influencing trainees completion rates in public vocational training centers in Kenya: Focus of national vocational certificate of education and training college. https://erepository.uoeld.ac.ke

Kitui, B.M. (2015). Factors influencing access to technical and vocational education and training in bungoma east sub county, kenya. https://ir-library.ku.ac.ke

Kothari, C.K. (2004). *Research in education: A conceptual introduction* (2nd Rev. ed.). New Delhi: New Age International (P) Limited, Publishers.

Kothari, C.K. and Garg, G. (2004). *Research methodology: Methods and techniques* (4th multi colour ed.). New Delhi: New Age International (P) Limited, Publishers.

Krejcie, R. and Morgan, D.W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 1970, 30, 607-610.

Kuczera, M. and Field, S. (2010). Learning for jobs. *Oecd reviews of vocational education and training. Options for China.* OECD. https://doi.org/10.1787/9789264113749-EN

Lerner, A.P. (1938). Theory and practice in socialist economics. *The review of economic studies*, Vo. 6, No. 1 (Oct.,1938), pp 71-75. London: Oxford University Press. https://doi.org/10.2307/2967541

Lijodi, G.D. (2018). Influence of principals' competence in management of financial resources on student's academic achievement in public day secondary schools in kakamega east sub county. https://erepository.uonbi.ac.ke

Maglen, L., Wall, M. W. and Rokovunisei, M. (2014). Research report into the financing of technical and vocational education training (tvet) in the pacific*:* Fiji: Country report. *Australian Council for educational research (acer*). ISBN (1978-1-74286-280-4) https://www.acer.edu.au

Maina, G.R. (2019). Influence of financing and performance on tvet programmes in Kenya: A case study of Nairobi county. http://erepository.uonbi.ac.ke/handle/11295/108595

Majumdar, P. and Teaero, T. (2014). Research report into the financing of technical and vocational education training (TVET) in the pacific*:* Kiribati: Country report. *Australian Council for educational research (acer)*. ISBN (978-1-74286-268-2) https://www.acer.edu.au

Mankiw, N.G. (2007). *Principles of macroeconomics* (4th ed.). Thomson south-western.

Marshall, A. (1890). *Principles of economics* (8th ed.). Macmillan and Co. http://oll.libertyfund.org/title/1676

Mbuva, A. (2019, March 18.). *Poor tvet enrolment bad for big four agenda-ps*. The Star.

https://www.the-star.co.ke/counties/eastern/2019-03-18-poor-tvet-enrolment-bad-for-big-four-ps/

McInnis, C., Hartley, R., Polesel J. and Teese, R. (2000, May). Non-completion in vocational education and training and higher education. *Research and evaluation branch,* 4/00. The University of Melbourne

Memba, A. Z. and Feng, Z.J. (2016). Significance of trends of enrolment, budget and actual expenditure in the examination of higher education financing in Tanzania, *International Institute for Science, Technology and Education Journal*, *7*(15), ISSN 2222-288x. https://iiste.org.

Mitchell, C. (2021). *Trend*. Retrieved on 21st October 2021 from https://www.investopedia.com/terms/t/trend.asp

Mugenda, O. and Mugenda, G. (2003). *Research methods*. Nairobi: African Centre for Technology Studies.

Mumiukha, C.K., Ngugi, M.N., Ndiga, B.A. and Fedha, F. (2015). Transitional enrolment trends within the different education levels in kenya: An analysis of promoting facets. *International Institute for Science, Technology and Education Journal*, *6*(33), ISSN 2222-288x. https://www.iiste.org

National Centre for Educational Research. (2016). Why trainees drop out of vocational training centres in kenya: Focus on community-based factors. https://www.ncver.edu.au

Ng'alu, M.M. and Bomet, J.E. (2014, August). The role of CDF in provision of secondary education in Kenya. *International Journal of Scientific and Technology*, *3*(6), ISSN 2277-8616. www.ijstr.org

Nganyi, J.E. (2014). Trends and selected determinants of students' access to public technical training institutions in kenya.

Ngumbao, J. K. (2012). Factors influencing youth enrolment levels in public youth polytechnics in Mombasa county, Kenya. https://erepository.uonbi.ac.ke

Ngugi, M. and Muthima, P. (2017). Female participation in technical vocational education and training institutions (TVET) subsector: The kenya experience. *Public Policy and Administration Research*, *7*(4), ISSN 2225-0972.

Nielsen, H. S., Sorensen T. and Taber, C.R. (2008). Estimating the effect of student aid on college enrolment: Evidence from a government grant policy reform. National Bureau of Economic Research, working paper No. 14535. https://ideas.repec.org

Nzuki, C.K. (2017). Kenya's CDF, free secondary education policy and access to secondary education. https://scholarworks.waldenv.edu/dissertations

Obwari, H.N. (2013). Influence of CDF on education development in the counties: A study of public secondary schools in Likuyani constituency, Kakamega county, Kenya. https://erepository.uonbi.ac.ke.

OECD (2017). *The funding of school education: connecting resources and learning*, OECD publishers. http://dx.doi.org/10.1787/9789264276147-en

Oketch, D., Sika, J.O., and Gogo, J.O. (2019). County education bursary fund influence on access to secondary education in Siaya county, Kenya. *Advances in Social Science Research Journal of Social Sciences and Entrepreneurship*, *6*(3), https://journals.scholarpublishing.org.

Okwemba, V. O. (2014). Equity in access to youth polytechnics by graduates of primary and secondary schools in Kakamega county. https://www.ijern.com

Orwasa, B. (2010). An assessment of the factors contributing to educational wastage in secondary schools in Kericho county. https://ir-library.ku.ac.ke

Osidipe, A. (2017). TVET and nurturing skills for sustainable regional development: Perspective from west Africa. *Journal of Education and Practice, 8*(30), ISSN 2222-288x. https://iiste.org

Owano, A. (1988). Education for employment: The contribution of the youth polytechnic programme to youth employment in kenya.

Oyoo, P.A., Achieng, L. and Asena, J. (2020). Influence of NGCDF support on student enrolment in Muhoroni constituency in Kisumu constituency, Kenya. *Journal of Popular Education in Africa*, *4*(9), 71-83. https://cedred.org

Palmer, R. (2015). Financing TVET in the East Asia and pacific: Current status, challenges and opportunities. *Summary Report*. Korea world Bank partnership facility. https://dokumen.pub

Powell, L. and Mcgrath, S. (2013). Why students enroll in TVET-the voices of south africa FET college students. *Journal of Vocational Education and Training Conference*.

Republic of Ghana. (2021). *Ghana tvet report (2021)*. German office for international cooperation in vocational education and training. https://ctvet.gov.gh

Republic of Kenya. (1908). *The fraser commission report*. Government Printer.

Republic of Kenya. (1911). *The phelp-stokes commission report*. Government Printer.

Republic of Kenya. (1964). *Kenya education commission report*. Government Printer.

Republic of Kenya. (2010). *The constitution of kenya*. Government Printer.

Republic of Kenya. (2023). *Economic survey*. Government Printer.

Rukwaro, M., Olembo, J. and Ogeta N. (2017). Ways CDF promotes students access to secondary school education in githunguri sub county, kenya. *African Journal of Education and Practice*, *2*(2), 35-45. ISSN 2519-0296. https://iprjb.org,

Sauro, J. and Lewis, J.R. (2016). *Quantifying the user experience* (second edition), Morgan Kaufmann, 2016, pages 9-18, ISBN 9780128023082.

Sincich, M.B. (2011). *Statistics for business and economics* (eleventh edition). Prentice Hall.

Somaggio, G.W. (2021). Early termination of vocational training: dropout or stop out? *Empirical research in vocational education and training*, *13*(2021). https://doi.org/10.1186/s40461-021-00109-z

Tanha, K. Mohammadi, N. and Janani L. (2017). P value what is and what is not. *Medical Journal of the Islamic Republic of Iran*. PMCID: PMC5804470. https://www.sjsu.edu

Tanui, C. (2020, June 2). *Over 200,000 students with university entry grades opt for tvet course-kuccps*. http://capitalfm.co.ke.

Tanui, J.K. (2016). Effect of government financial interventions on education indices of the vulnerable secondary school students in Nandi north sub county, Kenya. https://library.kisiiuniversity.ac.ke.

Thakur, M. (n.d.). Trends analysis formula. EDUCBA. https://www.educba.com/trendanalysis-formula/

United Nations Educational, Scientific and Cultural Organization. (2012). *Education for all global monitoring report*. UNESCO.

UNESCO-UNEVOC. (2017). Diversifying the funding sources for TVET. Report of the Unesco-Unevoc Virtual Conference 16 to 22 January 2017. https://unevoc.unesco.org

Wanjala, G. and Ali, K.H. (2017). Impact of subsidized fees program on students' access to quality education in public secondary schools in Wajir county, Kenya. *International journal of Education and research*, 2017;5(7): 247-262.

Warren, D.L. (2012). Why student aid is not driving up college costs. http://www.washingtonpost.

Wasike, J.N., Injendi, J. and Maiyo, J. (2020a). The relationship between budget adequacy and student enrolment in tvet institutions in Bungoma county, Kenya. *Journal of Advances in Education and Philosophy*, ISSN 2523-2223. https://doi.org/10.36348/jaep.2020.v40i09.003

Wasike, J.N. and Maiyo, J. (2020b). Utility of government initiatives in technical, vocational and training institutions on student enrolment in Bungoma

county, Kenya. *European Journal of Education Studies, 7*(12). ISSN 2501-1111. https://doi.org/10.46827/ejes.v71i2.3532

Yi, H., Zhang, L., Yao, Y.,Wang, A., Ma, Y., Shi, Y., Chu, J., Loyalka, P. and Rozelle, S. (2015). Exploring the dropout rates and causes of dropout in upper-secondary technical and vocational education and training (TVET) schools in China. *International journal of educational development, 42* (2015) 115-123.

APPENDICES

Appendix A: Questionnaires for Vocational Training Centre (Vtc) Trainees.

PART A: Letter of introduction

Phyllys Wafula,

Masinde Muliro University of Science and Technology,

P.O. Box - 50200,

KAKAMEGA, KENYA.

Dear respondent,

RE: REQUEST FOR ASSISTANCE TO FILL IN RESEARCH QUESTIONS

I am a student at Masinde Muliro University of Science and Technology undertaking a master's degree in economics and management of education. I am conducting a research on the effect of government tuition fees subsidy (bursary) on student access to public vocational training centers in Bungoma County.

You have been selected to participate in this study. This is therefore to kindly request that you assist by filling in the attached questionnaire. Your participation will contribute in providing feedback concerning the money that has been invested in the vocational training centers by the government. The information provided will be treated with strict confidentiality and your participation is strictly voluntary. You do not need to provide your name.

Thanks in advance.

Yours faithfully,

Signature _____

Wafula Phyllys.

PART B: Introduction

This questionnaire has been designed to identify the relationship between the amount of Bungoma County Government Bursary Fund (bursary) and students' access to vocational training centers.

Consent section

You have been chosen to participate in this study.

You are free to either accept or refuse to participate.

Would you like to participate by answering the questions below?

Please tick (√) one.

Yes ( )

No ( )

If yes, kindly fill this questionnaire as accurately as possible.

Section one: personal information

1. What is the name the trade that you are undertaking? (tick appropriately)

Agri-business ( )

Carpentry ( )

Electrical wiring ( )

Food technology ( )

Garment making ( )

Hair dressing ( )

ICT ( )

Masonry ( )

Metal work/Welding ( )

Motor vehicle mechanics ( )

Plumbing and pipe fitting ( )

Other ( ) specify _____

Section two: general information

2. Have you ever applied for bursary that was issued in the office of the member of County Assembly MCA?

   Please tick (√) one.

   Yes ( )

   No ( )

3. Have you ever received bursary from the office of the member of County Assembly MCA?

   Please tick (√) one.

   Yes ( )

   No ( )

THANK YOU

Appendix B: Interview Schedules for VTC Managers (Principal Instructors).

Introduction:

- This study attempts to assess the relationship between the amount of Bungoma county government bursary and student access to public VTCs. Your knowledge of the program is of great value to this study and we want to thank you for your willingness to answer questions on the program.

Section One: Background Information

1. Name of VTC _____

Section Two: General information.

2. How would you rate the adequacy of the bursaries for the respective courses? Are they,

   Most adequate ( )

   Adequate ( )

   Neither adequate nor inadequate ( )

   Inadequate ( )

   Most inadequate ( )

3. Please explain your answer _____

   _____

   _____

   _____

_____

_____

_____

_____

4. In your opinion, has the government bursary affected enrollment into VTCs?

_____

Please explain, _____

_____

_____

_____

_____

_____

_____

b) What about completion rates? _____

Please explain, _____

_____

_____

_____

_____

_____

_____

_____

5. Are there any challenges that you face as a principal instructor with regard to the BCGBF?

   _____

6. If yes, please outline suggestions for improvement that you would like to put across with regard to the VTC bursary?_____

   _____

   _____

   _____

   _____

   _____

   _____

THANK YOU VERY MUCH FOR YOUR PARTICIPATION

Appendix C: Interview Schedules for Sub County Vocational Training Officers (SCVETOS)

Introduction:

- This study attempts to assess the relationship between the amount of Bungoma county government bursary and student access to public VTCs. Your knowledge of the program is of great value to this study and we want to thank you for your willingness to answer questions on the program.

General information

1. How would you rate the adequacy of the bursaries for various courses offered in the VTCs? is it,

   Most adequate ( )

   Adequate ( )

   Neither adequate nor inadequate ( )

   Inadequate ( )

   Most inadequate ( )

   Please explain your answer _____

   _____

   _____

   _____

7. In your opinion, has the government bursary affected enrollment into VTCs?

   _____

Please explain, _____

_____

_____

_____

_____

_____

_____

_____

b) What about completion rates? _____

Please explain, _____

_____

_____

_____

_____

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_____

_____

8. Were there any notable challenges witnessed with regard to the BCGBF? _____

   If yes, please explain: _____

   _____

   _____

   _____

   _____

   _____

_____

_____

_____

_____

_____

THANK YOU VERY MUCH FOR YOUR PARTICIPATIO

Appendix D: Checklist for amount of Bungoma County Government Bursary Fund Allocation per Vtc, per Course.

Name of VTC_____Sub county_____

Trade	Amount											
	2014		2015		2016		2017		2018		2019	
	M	F	M	F	M	F	M	F	M	F	M	F
Agri-business												
Carpentry												
Electrical wiring												
Food technology												
Garment making.												
Hair dressing												
ICT												

Masonry												
Motor Vehicle Mechanics												
Plumbing												
OTHER												
TOTAL												

Appendix E: Checklist for Vocational Training Centers' (VTC) Gross Enrolment (2013-2019)

Name of VTC_____ sub county _____

Trade	Enrolment													
	2013		2014		2015		2016		2017		2018		2019	
	M	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**
Agri-business														
Carpentry														
Electrical wiring														
Food technology														
Garment making.														
Hair dressing														
ICT														

Masonry														
Motor Vehicle Mechanics														
Plumbing														
OTHER														
TOTAL														

Appendix F: Checklist for VTC Program- Completion (2015-2019)

Name of VTC_____ sub county _____

Trade	Completion									
	2015		2016		2017		2018		2019	
	M	F	M	F	M	F	M	F	M	F
Agri-business										
Carpentry										
Electrical wiring										
Food technology										
Garment making.										
Hair dressing										
ICT										

Masonry										
Motor Vehicle Mechanics										
Plumbing										
OTHER										
TOTAL										

Appendix G: Letter of Approval

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

Tel: 056-30870
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E-mail: directordps@mmust.ac.ke
Website: www.mmust.ac.ke

P.O Box 190
Kakamega – 50100
Kenya

Directorate of Postgraduate Studies

Ref: MMU/COR: 509099

24th May, 2019

Phyllys Wafula,
EDC/G/02/13,
P.O. Box 190-50100,
KAKAMEGA.

Dear Ms. Wafula,

RE: APPROVAL OF PROPOSAL

I am pleased to inform you that the Directorate of Postgraduate Studies has considered and approved your Masters' proposal entitled: ***"The Effect of Government Tuition Subsidy on Student Access to public Vocational Training Centers in Bungoma County, Kenya"*** and appointed the following as supervisors:

1. Dr. Geoffrey Musera - MMUST, EPM
2. Dr. Jason Nganyi - MMUST, EPM

You are required to submit through your supervisor(s) progress reports every three months to the Director Postgraduate Studies. Such reports should be copied to the following: Chairman, School of Education Graduate Studies Committee and Chairman, Curriculum and Instructional Technology Department. Kindly adhere to research ethics consideration in conducting research.

It is the policy and regulations of the University that you observe a deadline of two years from the date of registration to complete your master's thesis. Do not hesitate to consult this office in case of any problem encountered in the course of your work.

We wish you the best in your research and hope the study will make original contribution to knowledge.

Yours Sincerely,

DEAN
SCHOOL OF GRADUATE STUDIES
MASINDE MULIRO UNIVERSITY
OF SCIENCE & TECHNOLOGY

Prof. John Obiri
DIRECTOR, DIRECTORATE OF POSTGRADUATE STUDIES

Appendix H: Research Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **792285**

Date of Issue: **21/August/2019**

RESEARCH LICENSE

This is to Certify that Ms.. Phyllys Wafula of Masinde Muliro University of Science and Technology, has been licensed to conduct research in Bungoma on the topic: THE EFFECT OF GOVERNMENT TUITION FEE SUBSIDY ON STUDENT ACCESS TO PUBLIC VOCATIONAL TRAINING CENTERS IN BUNGOMA COUNTY, for the period ending : 21/August/2020.

License No: **NACOSTI/P/19/152**

792285

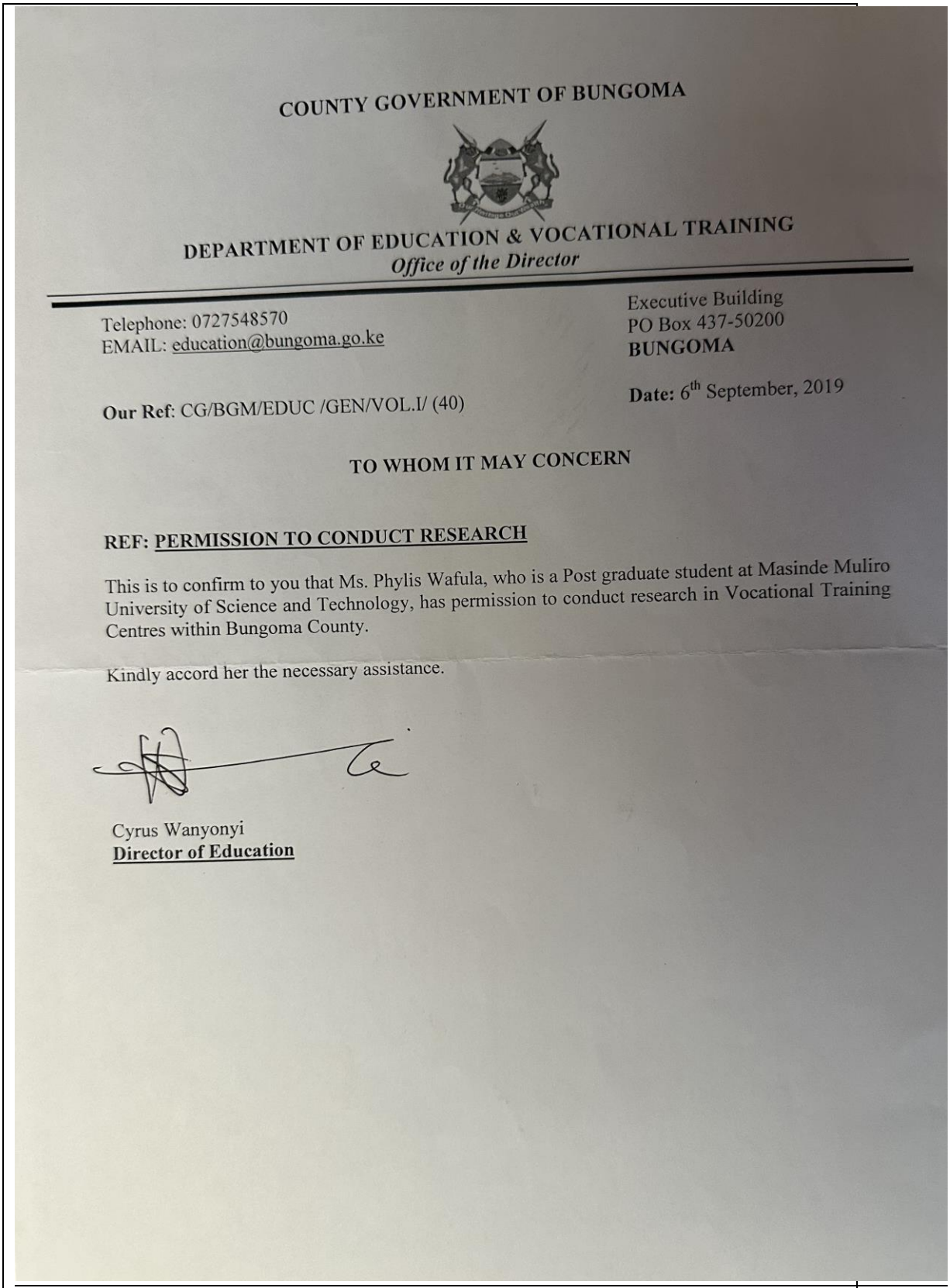
Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

Appendix I: Permission to Conduct Research in Bungoma County VTCs.



COUNTY GOVERNMENT OF BUNGOMA

DEPARTMENT OF EDUCATION & VOCATIONAL TRAINING

Office of the Director

Telephone: 0727548570
EMAIL: education@bungoma.go.ke

Executive Building
PO Box 437-50200
BUNGOMA

Our Ref: CG/BGM/EDUC /GEN/VOL.I/ (40)

Date: 6th September, 2019

TO WHOM IT MAY CONCERN

REF: PERMISSION TO CONDUCT RESEARCH

This is to confirm to you that Ms. Phylis Wafula, who is a Post graduate student at Masinde Muliro University of Science and Technology, has permission to conduct research in Vocational Training Centres within Bungoma County.

Kindly accord her the necessary assistance.

Cyrus Wanyonyi
Director of Education

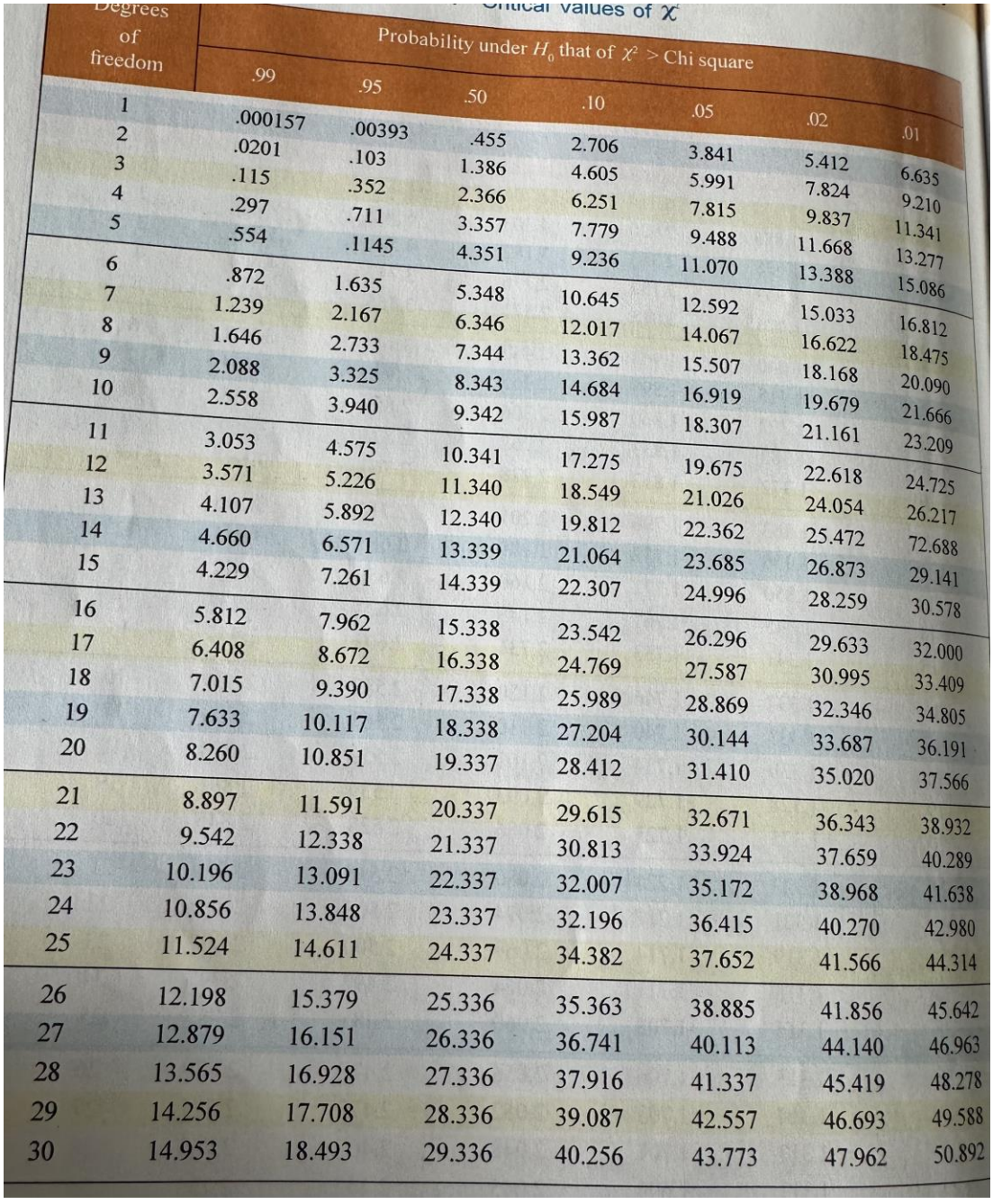
Appendix J: Table for Determining Sample Size from a Given Population, Krejcie and Morgan (1970).

KEY: N=Population; S=sample size.

Populasi (N)	Sampel (n)	Populasi (N)	Sampel (n)	Populasi (N)	Sampel (n)
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Source Krejcie, Robert V., Morgan, Daryle W (1970)

Appendix K: Table of Critical Value X^2 (Chi Square)



Critical Values of χ^2

Degrees of freedom	Probability under H_0 that of χ^2 > Chi square						
	.99	.95	.50	.10	.05	.02	.01
1	.000157	.00393	.455	2.706	3.841	5.412	6.635
2	.0201	.103	1.386	4.605	5.991	7.824	9.210
3	.115	.352	2.366	6.251	7.815	9.837	11.341
4	.297	.711	3.357	7.779	9.488	11.668	13.277
5	.554	.1145	4.351	9.236	11.070	13.388	15.086
6	.872	1.635	5.348	10.645	12.592	15.033	16.812
7	1.239	2.167	6.346	12.017	14.067	16.622	18.475
8	1.646	2.733	7.344	13.362	15.507	18.168	20.090
9	2.088	3.325	8.343	14.684	16.919	19.679	21.666
10	2.558	3.940	9.342	15.987	18.307	21.161	23.209
11	3.053	4.575	10.341	17.275	19.675	22.618	24.725
12	3.571	5.226	11.340	18.549	21.026	24.054	26.217
13	4.107	5.892	12.340	19.812	22.362	25.472	72.688
14	4.660	6.571	13.339	21.064	23.685	26.873	29.141
15	4.229	7.261	14.339	22.307	24.996	28.259	30.578
16	5.812	7.962	15.338	23.542	26.296	29.633	32.000
17	6.408	8.672	16.338	24.769	27.587	30.995	33.409
18	7.015	9.390	17.338	25.989	28.869	32.346	34.805
19	7.633	10.117	18.338	27.204	30.144	33.687	36.191
20	8.260	10.851	19.337	28.412	31.410	35.020	37.566
21	8.897	11.591	20.337	29.615	32.671	36.343	38.932
22	9.542	12.338	21.337	30.813	33.924	37.659	40.289
23	10.196	13.091	22.337	32.007	35.172	38.968	41.638
24	10.856	13.848	23.337	32.196	36.415	40.270	42.980
25	11.524	14.611	24.337	34.382	37.652	41.566	44.314
26	12.198	15.379	25.336	35.363	38.885	41.856	45.642
27	12.879	16.151	26.336	36.741	40.113	44.140	46.963
28	13.565	16.928	27.336	37.916	41.337	45.419	48.278
29	14.256	17.708	28.336	39.087	42.557	46.693	49.588
30	14.953	18.493	29.336	40.256	43.773	47.962	50.892

source: Kothari (2019)

Appendix L: Summation of the average Amount of BCGBF per trainee, per VTC, per year.

S/N	Amount	2014	XY	2015	XY	2016	XY	2017	XY	2018	XY	2019	XY
1	0	12	0	14	0	6	0	2	0	1	0	0	0
2	2000	0	0	2	4000	1	2000	0	0	0	0	0	0
3	2500	2	5000	2	5000	0	0	0	0	0	0	0	0
4	3000	0	0	7	21000	8	24000	8	24000	0	0	0	0
5	3500	0	0	1	3500	2	7000	0	0	0	0	0	0
6	3600	0	0	0	0	0	0	1	3600	0	0	0	0
7	4000	3	12000	1	4000	3	12000	4	16000	0	0	0	0
8	4333	0	0	0	0	1	4333	0	0	0	0	0	0
9	4500	0	0	1	4500	0	0	0	0	0	0	0	0
10	4545	0	0	0	0	0	0	0	0	1	4545	0	0
11	4680	1	4680	0	0	0	0	0	0	0	0	0	0
12	5000	26	130000	11	55000	16	80000	9	45000	20	100000	0	0
13	5166	0	0	0	0	0	0	1	5166	0	0	0	0
14	5240	0	0	0	0	0	0	1	5240	0	0	0	0
15	6000	1	6000	3	18000	2	12000	2	12000	0	0	0	0
16	6428	0	0	0	0	1	6428	0	0	0	0	0	0
17	6500	0	0	0	0	1	6500	0	0	0	0	0	0
18	6666	0	0	0	0	0	0	1	6666	0	0	0	0
19	6666.7	0	0	0	0	0	0	0	0	1	6666.7	0	0
20	7457	0	0	0	0	0	0	1	7457	0	0	0	0
21	7500	0	0	1	7500	1	7500	0	0	0	0	0	0
22	7529	0	0	1	7529	0	0	0	0	0	0	0	0

23	8000	0	0	1	8000	2	16000	4	32000	1	8000	0	0
24	8625	0	0	0	0	0	0	1	8625	0	0	0	0
25	9000	1	9000	0	0	0	0	0	0	0	0	0	0
26	9500	1	9500	0	0	0	0	0	0	0	0	0	0
27	9840	0	0	0	0	0	0	1	9840	0	0	0	0
28	10000	0	0	3	30000	0	0	8	80000	12	120000	48	480000
29	10500	0	0	0	0	0	0	0	0	5	52500	0	0
30	11000	0	0	0	0	2	22000	0	0	0	0	0	0
31	11500	0	0	0	0	0	0	2	23000	0	0	0	0
32	12000	1	12000	0	0	2	24000	1	12000	7	84000	0	0
33	15000	0	0	0	0	0	0	1	15000	0	0	0	0
	221775.7	48	188180	48	168029	48	223761	48	305594	48	375711.7	48	480000

Source: field data, 2019. 1

Appendix M: Illustration of Completion Rates per gender, per course between 2015 to 2017 in sampled VTCS in Bungoma County.

	13	15	**2015**	13	15	**2015**	14	16	**2016**	14	16	**2016**	15	17	**2017**
	M	M	**CR**	F	F	**CR**	M	M	**CR**	F	F	**CR**	M	M	**CR**
Garment Making	72	7	**9.7**	515	194	**37.7**	51	7	**13.7**	901	99	**10.9**	66	6	**9.1**
Motor V. Mech.	368	106	**28.8**	7	3	**42.9**	542	84	**15.5**	24	3	**12.5**	736	72	**9.8**
Masonry	304	111	**36.5**	4	1	**25**	477	82	**17.2**	20	4	**20**	475	109	**22.9**
Electrical Wiring	129	60	**46.5**	3	12	**400**	167	40	**23.9**	21	11	**52.4**	301	44	**14.6**
Hair Dressing	2	0	**0**	24	23	**95.8**	6	0	**0**	128	43	**33.6**	12	0	**0**
Carpentry and Joinery	174	45	**25.9**	4	0	**0**	204	19	**9.3**	3	0	**0**	193	22	**11.4**
I.C.T	30	0	**0**	17	1	**5.9**	45	0	**0**	56	1	**1.8**	39	8	**20.5**
Plumbing and .P. F.	28	36	**128.6**	0	3		40	11	**27.5**	4	3	**75**	46	16	**34.8**
Arch. Welding	44	24	**54.6**	0	0	**0**	65	11	**16.9**	0	0	**0**	89	10	**11.2**
Driving	0	0	**0**	0	0	**0**	155	0	**0**	8	0	**0**	110	0	**0**
Food Technology	3	0	**0**	32	10	**31.3**	6	3	**50**	48	8	**16.7**	6	1	**16.7**
Un Labelled Data	135	70	**51.9**	70	41	**58.6**	52	32	**61.5**	25	17	**68**	34	77	**226.5**
Agri-Business	0	0	**0**	0	0	**0**	0	0	**0**	2	0	**0**	0	0	**0**
	1289	459	**35.6**	676	288	**42.6**	1810	289	**15.9**	1240	189	**15.2**	2107	365	**17.3**

Source: field data, 2019. 2

Appendix N: Continuation of appendix N (2017 To 2019).

	15	17	**17**	16	18	**18**	16	18	**18**	17	19	**19**	17	19	**19**
	F	F	**CR**	M	M	**CR**	F	F	**CR**	M	M	**CR**	F	F	**CR**
Garment Making	908	80	**8.8**	64	1	**1.6**	812	136	**16.7**	57	6	**10.5**	738	120	**16.3**
Motor V. Mech.	29	3	**10.3**	588	97	**16.5**	28	1	**3.6**	517	97	**18.8**	18	3	**16.7**
Masonry	25	0	**0**	528	128	**24.2**	17	0	**0**	449	152	**33.9**	5	2	**40**
Electrical Wiring	22	8	**36.4**	236	96	**40.7**	50	5	**10**	223	84	**37.7**	16	1	**6.3**
Hair Dressing	185	31	**16.8**	5	0	**0**	224	43	**19.2**	16	4	**25**	145	61	**42.1**
Carpentry and Joinery	12	0	**0**	180	30	**16.7**	0	0	**0**	144	16	**11.1**	0	0	**0**
I.C.T	67	5	**7.5**	30	1	**3.3**	47	2	**4.3**	18	0	**0**	31	3	**9.7**
Plumbing and .P. F.	4	3	**75**	84	73	**86.9**	10	7	**70**	96	63	**65.6**	5	4	**80**
Arch. Welding	3	0	**0**	85	47	**55.3**	1	0	**0**	63	27	**42.9**	1	0	**0**
Driving	7	0	**0**	97	0	**0**	1	0	**0**	110	0	**0**	8	0	**0**
Food Technology	38	4	**10.5**	15	1	**6.7**	13	6	**46.2**	5	0	**0**	26	19	**73.1**
Un Labelled Data	15	31	**206.7**	58	0	**0**	24	0	**0**	39	0	**0**	61	0	**0**
Agri-Business	0	0	**0**	0	21	**0**	1	10	**1000**	0	10		1	9	**900**
Garment Making	1315	165	**12.6**	1970	495	**25.1**	1228	210	**17.1**	1737	459	**26.4**	1055	222	**21.0**

Source: field data, 2019. 3

Appendix O: **Illustration of the amount of BCGBF and Gross Enrolment per sampled VTC**

VTC	2014	2014	2015	2015	2016	2016	2017	2017	2018	2018	2019	2019
	BCGB	T	BCGB	T	BCGB	T	BCGB	T	BCGB	T	BCGB	T
1	0	33	0	52	5000	41	10000	24	12000	48	10000	69
2	5000	126	3000	129	5000	126	5000	62	10500	145	10000	151
3	5000	129	0	88	1100	79	11500	53	12000	196	10000	204
4	9000	119	10000	87	12000	90	10000	48	6666.7	123	10000	151
5	0	11	0	27	0	39	3000	0	5000	87	10000	206
6	5000	32	5000	17	5000	43	0	10	5000	50	10000	47
7	4680	29	7529	19	6428	24	9840	25	10500	56	10000	80
8	0	21	5000	76	3000	86	15000	38	10500	152	10000	206
9	0	0	0	48	5000	28	5000	18	5000	70	10000	76
10	5000	149	4000	146	4333	222	6666	151	12000	465	10000	382
11	5000	89	3000	91	5000	86	10000	86	12000	292	10000	172
12	0	26	2000	23	6000	45	8000	46	4545	49	10000	69
13	5000	36	3000	30	3500	59	6000	41	5000	59	10000	72
14	0	62	2000	72	7500	38	8000	59	10500	79	10000	55
15	5000	121	3500	144	3500	130	10000	147	12000	258	10000	205
16	5000	24	5000	23	5000	34	3000	39	5000	74	10000	115
17	2500	122	2500	138	5000	140	5000	145	10000	141	10000	236
18	5000	68	3000	117	3000	63	3000	126	5000	124	10000	188
19	0	0	0	0	0	38	5000	74	0	87	10000	106
20	4000	147	3000	174	5000	20	8000	50	10000	61	10000	44
21	5000	119	10000	190	11000	83	11500	85	12000	111	10000	110
22	5000	62	10000	20	12000	39	10000	108	10000	198	10000	162
23	5000	50	3000	68	3000	49	3000	61	5000	60	10000	69

24	5000	54	0	123	4000	38	5000	56	5000	33	10000	64
25	5000	34	0	24	3000	30	10000	64	10000	136	10000	256
26	12000	32	4500	0	4000	35	7457	40	10000	126	10000	133
27	5000	31	0	40	0	39	3600	58	5000	82	10000	139
28	5000	64	6000	49	0	64	5166	59	8000	102	10000	133
29	6000	0	0	25	6000	66	5240	44	5000	30	10000	41
30	0	100	0	56	5000	43	5000	23	5000	32	10000	66
31	5000	68	5000	76	5000	79	4000	85	5000	64	10000	103
32	0	0	5000	0	0	39	10000	0	10000	54	10000	54
33	0	273	6000	90	3000	35	5000	25	10500	48	10000	62
34	5000	35	8000	44	8000	33	10000	25	10000	36	10000	37
35	5000	146	6000	313	4000	349	4000	297	10000	150	10000	209
36	0	132	5000	160	8000	157	12000	52	10000	76	10000	133
37	5000	21	5000	9	5000	32	3000	26	5000	138	10000	132
38	2500	32	2500	0	5000	0	5000	0	10000	24	10000	50
39	5000	78	0	92	2000	54	4000	47	5000	156	10000	161
40	4000	0	5000	0	5000	30	3000	0	5000	38	10000	36
41	5000	123	0	82	3000	70	5000	48	5000	55	10000	57
42	5000	35	0	54	0	40	6000	23	12000	69	10000	115
43	9500	0	7500	10	6500	96	8625	97	10000	89	10000	131
44	0	0	5000	92	3000	21	4000	16	5000	49	10000	29
45	5000	78	5000	64	5000	98	3000	70	5000	108	10000	145
46	4000	88	3000	101	5000	76	8000	88	10000	93	10000	96
47	5000	51	5000	137	5000	67	0	29	5000	74	10000	64
48	5000	0	0	2	3000	5	3000	24	5000	26	10000	24
	188180	3050	168029	3422	213861	3198	305594	2792	375711.7	4873	480000	5645

Source: field data, 2019.

Appendix P: **Illustration of the amount of BCGBF and Completion Rates per sampled VTC**

VTC	2015	2015	2016	2016	2017	2017	2018	2018	2019	2019
	BCGBF	CR	BCGBF	CR	BCGBF	CR	BCGBF	CR	BCGBF	CR
1	0	0	5000	0	10000	0	12000	17.1	10000	37.5
2	3000	44.8	5000	15.1	5000	6.2	10500	9.5	10000	53.2
3	0	79.5	1100	4.7	11500	5.7	12000	11.4	10000	28.3
4	10000	50	12000	10.1	10000	19.5	6666.7	14.4	10000	35.4
5	0	0	0	36.4	3000	22.2	5000	35.9	10000	0
6	5000	160	5000	0	0	64.7	5000	20.9	10000	90
7	7529	0	6428	10.3	9840	26.3	10500	16.7	10000	24
8	5000	70	3000	23.8	15000	22.4	10500	12.8	10000	26.3
9	0	0	5000	0	5000	14.6	5000	25	10000	50
10	4000	76.8	4333	65.1	6666	76.7	12000	71.2	10000	56.3
11	3000	65.5	5000	16.9	10000	31.9	12000	34.9	10000	23.3
12	2000	20	6000	30.8	8000	13.0	4545	28.9	10000	8.7
13	3000	62.8	3500	22.2	6000	50	5000	22.0	10000	14.6
14	2000	0	7500	4.8	8000	6.9	10500	13.2	10000	8.5
15	3500	131.1	3500	33.9	10000	46.5	12000	30.8	10000	36.1
16	5000		5000	0	3000	4.4	5000	23.5	10000	2.6
17	2500	40.5	5000	21.3	5000	17.4	10000	19.3	10000	26.2
18	3000	109.1	3000	61.8	3000	12.8	5000	25.4	10000	18.3
19	0	0	0	0	5000	0	0	28.9	10000	2.7
20	3000	12.9	5000	0	8000	1.7	10000	5	10000	14
21	10000	48.1	11000	20.2	11500	7.9	12000	31.3	10000	27.1
22	10000	2.9	12000	1.6	10000	5	10000	10.3	10000	8.3
23	3000	8.3	3000	12	3000	8.8	5000	26.5	10000	21.3
24	0	31.25	4000	14.8	5000	2.4	5000	2.6	10000	5.4
25	0	17.2	3000	17.6	10000	12.5	10000	16.7	10000	9.4
26	4500	0	4000	43.75	7457	0	10000	25.7	10000	25

27	0	0	0	6.5	3600	10	5000	5.1	10000	0
28	6000	19.0	0	14.1	5166	18.4	8000	14.1	10000	13.6
29	0	0	6000		5240	8	5000	4.5	10000	9.1
30	0	0	5000	0	5000	1.8	5000	13.9	10000	30.4
31	5000	0	5000	0	4000	0	5000	26.6	10000	18.8
32	5000	0	0	0	10000	0	10000	0	10000	0
33	6000	0	3000	9.5	5000	11.1	10500	22.9	10000	60
34	8000	187.5	8000	20	10000	18.2	10000	39.4	10000	4
35	6000	75	4000	34.2	4000	17.3	10000	16.9	10000	19.5
36	5000	40.7	8000	20.5	12000	5.6	10000	5.7	10000	32.7
37	5000	0	5000	0	3000	0	5000	0	10000	11.5
38	2500	1.1	5000	0	5000	0	10000	0	10000	0
39	0	74	2000	48.7	4000	26.1	5000	62.9	10000	95.8
40	5000	0	5000	0	3000	0	5000	0	10000	0
41	0	38.1	3000	29.3	5000	25.6	5000	21.4	10000	20.8
42	0	34.5	0	5.7	6000	1.9	12000	7.5	10000	17.4
43	7500	0	6500	0	8625	10	10000	7.3	10000	26.8
44	5000	0	3000	0	4000	1.1	5000	9.5	10000	6.25
45	5000	425	5000	21.8	3000	112.5	5000	0	10000	0
46	3000	60	5000	29.5	8000	25.7	10000	44.7	10000	25
47	5000	32.1	5000	47.1	0	5.1	5000	10.5	10000	20.7
48	0	0	3000	0	3000	50	5000	0	10000	0
	168029	51.5	213861	20.6	305594	19.2	375711.7	22.1	480000	24.2

Source: Field Data, 2019.