

**EFFECTS OF VOCATIONAL EDUCATION ON THE ECONOMY AND
EMPLOYMENT OF YOUTHS IN BOTSWANA**

A dissertation

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Master of Education in Higher Education (MEd)

By

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DECLARATION

I, Samuel Oshima Mmolai, hereby declare that the contents of this dissertation represent my own work, and that the dissertation has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Botho University.

Signed.....

Date.....

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ABSTRACT

The aim of the study was to examine the effects of vocational education on the economy and employment of youths in Botswana. The importance of education and training for the improvement of local and national human capital cannot be underscored. A survey was conducted whereby a questionnaire was administered to 61 respondents. The researcher adopted a quantitative research methodology. The population of the study included all staff who worked in the Ministry of Education, Vocational colleges and Industry (employers of manufacturing concerns) at the time the study was conducted. The results of the study revealed that there was a positive relationship between vocational education, economic growth, and employment. The results further confirmed that vocational education was playing a significant role in fostering economic growth and employment for the youth. It was further discovered that there was a need to eradicate rampant unemployment through employment creation measures in order to stimulate economic growth in Botswana. The significance of this study was to unravel the effects of vocational education on the general economy and the employment of youths in Botswana given the fact that the country is bedevilled by high youth unemployment.

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CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

This study examines the effects of vocational education on the general economy and the employment of youths in Botswana. It highlights the role of vocational education on the general economy and the employment of the youth and the challenges experienced thereof. The chapter introduces the study focus area through the background of the study followed by the theoretical foundations. Furthermore, the statement of the problem is stated together with the purpose of the study. The chapter also highlights the research objectives and research questions, the significance of the study as well as the scope and limitations of the study.

1.2 General background

In Botswana, two education pathways exist, that is, the formal and vocational education routes. At independence in 1966, vocational education was very instrumental in building the stock of human capital that served in the government and the private sector. Vocational education was introduced in Botswana in 1962 through the Botswana Training Centre national trade system in the Ministry of Labour (Mupimpila & Narayana, 2009). Vocational education is an alternative form of learning that focuses on the acquisition of practical skills based on craft and handy-work rather than on formal education pathways such as university education which is based on the acquisition of numeracy and literacy skills (Dalby, 2015). Today, the formal education stream has overtaken the vocational education system and questions remain as to whether vocational education is still a viable solution to the ever-increasing unemployment of youths in the country (Bob, 2018).

UNESCO (2016) reports that vocational education has traditionally been provided at brigades and technical and other training institutions. The role of vocational education in Botswana is an instrumental one – that of equipping the unskilled and skilled with practical skills in craftwork to perform specialised tasks in a work environment for occupations required in industry and

commerce. There are additional benefits for the small, micro and medium enterprise (SMME) sector where vocational graduates can be self-employed and use their skills to earn a living and run businesses (Heitmann, 2017). The idea behind the introduction of vocational education in Botswana was to uplift the value of human capital in the country and create employment for the youths given the high number of youths who were unemployed at the time Botswana gained its independence. Vocational education graduates have been able to gain employability skills, and some have been absorbed into the private and public sectors of the economy. However, the problem of unemployment and underemployment of youths has persisted as the bulk of vocational education graduates cannot find employment (Fox, 2016; Hanna, 2014; Biavaschi, 2012). There seems to be no solution in sight for the high number of unemployed youths roaming the streets.

The study examined the effect that vocational education has had on the economy of Botswana in terms of the actual and perceived contribution to the employment of youths. An examination of the effects of vocational education is important as it reveals the proficiency, or otherwise, of vocational education in the vocational institutions as a measure of employees' productivity. This examination also reveals the challenges faced by vocational education and explores what needs to be done to improve the quality and relevance of vocational education in order to enhance employment and economic growth.

1.3 Theoretical foundations

Developed nations have gone through several stages of development in both theory and practice and have kept extensive records of the vocational programmes and their impact. This wealth of information has made it possible to research extensively on many aspects and prospects of vocational education (Benhabib & Spiegel, 2005). Developing countries are disadvantaged by the lack of extensive records on the workings and dynamics of vocational education. This problem is not an exception to Botswana as evidenced by the lack of detailed vocational education research in the country. Furthermore, Botswana has not undergone such a fundamental transformation to warrant high outcomes in theory and practice of vocational education.

A few academic researches exist concerning the state and condition of vocational education in Botswana (Baputaki, 2007; Ontebetse, 2008; Mupimpila and Narayana, 2009). Available research seems to focus on the central view that vocational education has come a long way since its inception and there is a marked contribution to both the economy and intended recipients. Economically, people can only become employed if they are human capital, that is, if they have a useful and valuable skill and can contribute towards productivity increases which affect capacity for innovation, technology and disruption in production and industrial processes which in turn positively affect the economy (Benhabib & Spiegel, 2005).

Vocational education in Botswana has been successful in the past as an unemployment eradication measure. However, an assessment of the period from 1980 to date reveals the complete opposite. Unemployment is estimated at 17.5% and poverty at 30%, mainly due to the country's heavy reliance on capital intensive mining and quarrying (Botswana Country Report, 2017; Botswana Statistics, 2017). Vocational education has been overtaken by formal education and has not been able to effectively fulfil its original mandate of unemployment eradication through skills development due to technical and financial constraints.

The problems of vocational education have been widely stated in local research. Researchers such as Kerton (2007) identified several concerns with vocational education in Botswana which limit its effectiveness to empower youths and boost the country's economic profile. Kerton (2007) has been instrumental in the development of vocational education policy in Botswana. He highlighted ten key weaknesses of the current vocational education system. The identified weaknesses include poor manpower planning, poor coordination of training and development at all levels, and poor quality of training of vocational education and training (VET) graduates. Other weaknesses identified by Kerton (2007) include dissatisfaction of the quality of VET graduates by employers, inadequate VET funding, poor monitoring of policy VET outcomes, poor coordination of policies and guidelines, ineffective industrial placement, and poor quality of lecturers.

Kerton (2007) indicates more weaknesses of vocational education as inadequate previous general educational outcomes, low uptake of VET graduates by VET institutions, and the lack of

industry and a general poor learning-doing culture. A tracer study conducted by the Botswana Training Authority (BOTA) in 2006 discovered that vocational education is perceived as an inferior pathway for blue collar workers who earn low wages and perform menial tasks (Botswana Training Authority, 2006). Vocational education graduates are subjected to embarrassment due to the stigma associated with inferior education.

Other writers such as Polelo (2007) and Van Rensburg (2007) evaluate the strengths and weaknesses of the vocational educational system. The slow pace that government has taken to revolutionise the sector is the main reason given as to why this sector has stagnated. There has been a concerted effort by the Botswana government to raise the size of human capital in the country as evidenced by the growth of the education sector in the last twenty years (Nkomo, 2018). Government, against a backdrop of limited resources and international backing, was instrumental in the development of the Brigades development center in 1977 and Madirelo Training and testing Centre in 1986 both housed under the Department of Vocational Education and Training since 1994. Indeed, the Botswana government has developed several policy frameworks and has invested tremendously in vocational education as a means of strengthening citizen skills training to produce market-ready personnel and quality skills tailored to industry needs.

Focusing on the role of vocational education on economic development, Polelo (2007), Tabulawa (2008) and Vans Rensburg (2007), however, found little connection between vocational education and economic growth in Botswana. They attribute this insignificant association to mismatches between demand and supply of labour and of skill types and sets. The government has managed to formulate various policies such as the National Policy on Vocational Education and Training (1997) and legislations on vocational education such as the Apprenticeship and Industrial Training Act of 1983. The government has also spearheaded extensive employment creation initiatives (Ministry of Finance, 2017).

Botswana was not always a rich country. At independence, it was an isolated, least developed country with barely any reserves worth talking about. However, the country has, since the 1980s, experienced rapid and sustained economic growth. Motlaleng and Narayana (2014) explain that

the reason behind Botswana's remarkable economic growth rate is because of the application of skilled and semi-skilled manual labour over its natural and artificial resources. The government pursued a prudent policy after the discovery of diamonds and implemented a growth sharing policy called economic diversification across the board starting with key sectors until the entire economy was restructured optimally.

Mupimpila and Narayana (2009) state that there has been a significant expansion of education since the mining boom which turned the fortunes of this country for the better and this resulted in significant economic growth and development of more physical and human capital. According to the Botswana Millennium Development Goals Report (2010), key dimensions of educational performance such as enrolment, adult literacy, school infrastructure, basic equipment, supply of teaching materials and teacher qualifications have improved markedly since independence (Makwinja, 2017).

In order to harness further growth, Botswana must look towards skills development of its citizens. Bob (2018) argues that the quality of the workforce determines the economic growth and development of any country. Bilateral aid agencies, the World Bank and United Nations Educational, Scientific and Cultural Organization (UNESCO) advocate for the developing countries to employ vocational education as a tool to reduce poverty, promote economic growth and increase industrial and labour competitiveness (Comyn & Barnaart, 2010). Therefore, if people cannot be healthy and economically active, they cannot harness the benefits of economic growth and prosperity (Nkomo, 2018).

The technical capability of youths can further enhance the competitiveness and productivity of Botswana. The importance of the youths on the potential and future of every country cannot be overstated (Adams, 2007). Currently, stakeholders are not in agreement as to their needs and wants and vocational institutions train without proper manpower planning and assessment tools to correctly determine current and future skills requirements. The Botswana government continues to sponsor students who may not be absorbed by the job market. The effects of this mismatch may be catastrophic as unemployment may increase as a result of job seekers not having the appropriate skills required by the employers (Siphambe, 2005; Stats Botswana 2013;

Bob, 2018). It has been accepted that it is not only vocational education graduates who face high levels of unemployment. Even university graduates also face similar challenges. However, it is the vocational education graduates who face more unemployment and underemployment problems.

There are many concerns that have been expressed pertaining to the quality and quantity of vocational education in Botswana (Kerton, 2007; Motlaleng and Narayana, 2014). A serious problem is at the heart of the vocational education system and it needs a counterbalancing solution to address unemployment and underemployment which continue to affect graduates. This study therefore examined the impact of vocational education on the general economy and employment status of the youth in Botswana.

1.4 Problem statement

The Botswana youth are faced with high unemployment due to lack of skills required by employers. Vocational institutions were introduced by the Ministry of Education to empower and equip the unskilled youths with a mechanism to acquire marketable and employable skills. However, vocational education has not been effective in its mandate. The labour market of Botswana is in disequilibrium due to the mismatch between labour demand and supply. This situation is stifling the country's competitiveness and productivity of its human capital in terms of economic growth and development. Vocational education can become a formidable tool by which the youths can be integrated fully into the labour market (Motlaleng and Narayana, 2014). This study therefore sought to determine the effect of vocational education on the general economy and employment status of youths in Botswana.

1.5 Purpose/objectives of the study

The aim of the study was to examine the effects of vocational education on the economy and employment of youths in Botswana. The secondary objectives of the study were to:

- Examine the role of vocational education on the general economy in Botswana;
- Examine the role of vocational education on the employment of youth in Botswana

- Identify the challenges faced by vocational education in Botswana that affect the economy and employment of youths

1.6 Research questions

Based on the research objectives highlighted above, the study sought to answer the following research questions:

1. What is the role of vocational education on the general economy in Botswana?
2. What is the role of vocational education on the employment of youths in Botswana?
3. What are the challenges faced by vocational education in Botswana that affect the economy and employment of youths?

1.7 Significance of the study

The purpose of this study was to unravel the effects of vocational education on the general economy and the employment of youth in Botswana given the fact of high youth unemployment. The findings of this study will benefit the development of policy that can reflect the underlying conditions of the labour market. This study will be a significant endeavour in promoting effective vocational educational outcomes. The study will also be beneficial to the appreciation of the distinct nature and role of vocational education in serving employers with semi-skilled and skilled human resources and craftsmen. The study will also enable vocational instructors to improve or even change their methods of facilitation of vocational education practice, integration of theory into practice-based learning and using the pedagogical approaches to improve teaching methods. Moreover, this study will provide recommendations on what can be done to improve the current vocational model in Botswana to enhance economic growth, development and employment of youth in Botswana. The findings of the study will contribute towards the body of knowledge and serve as a reference material and a guide for future researchers who wish to conduct similar studies related to vocational education in Botswana and elsewhere.

1.8 Scope of the study

This study examined the effects of vocational education on the economy and employment status of youth in Botswana. The study focused mainly on Gaborone since government departments

and employers are mainly located there and this is the central hub of vocational education in Botswana. Gaborone is also the capital city of the country and exhibits the bulk of economic and industrial activities of the country. The study revolves around the governmental sector, represented by the Ministry of Education and Finance and the Department of Skills Development, and also employers of vocational education graduates, and the vocational education graduates themselves.

1.9 Limitations of the study

Several important limitations need to be considered. Firstly, because of the limited time allocated to complete the study (six months), this study was conducted on a small population who live and work in Gaborone. The study was conducted at the Ministry level, that is, Ministry of Finance and Economic development and Ministry of Employment, Labour Productivity and Skills Development, employers, and the Department of Skills Development (formerly Department of Technical Vocational Education and Training). The study was further limited to the statistics and information published by the Statistics Botswana and their interpretation. This study was a single case study and therefore limited to within-case analysis.

1.10 Chapter summary

This chapter addressed the general background, the theoretical foundations and the problem statement. The research objectives and research questions regarding the study were also addressed. The significance of the study and scope and limitations of the study have been highlighted. The next chapter (Chapter 2) is the literature review which serves to highlight the different theoretical perspectives that inform the investigation into an assessment of the effects of vocational education on the economy of Botswana. In Chapter 2, a detailed review of literature for the study is conducted focusing on the nature, role and effects of vocational education in contributing to the general economy and the employment of youth. The next chapter also discusses the theoretical framework used in this study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of related literature concerning the effects of vocational education on the economy and employment of youth by analysing and examining current and past studies. The literature review is divided into three sections. The first section assesses the broader role of vocational education, while the second section focuses on the challenges faced by vocational education which ultimately affects the general economy and the employment of youth. The third looks at suggestions proffered by research on what should be done to improve the current vocational education model in Botswana.

2.2 Concept of vocational education

There is a lack of universality about the definition of vocational education. In practice, the definition of vocational education has been found to be ambiguous and highly contextual (Stone, 2002; Barber, 2003; Goldin & Katz, 2008; Stern, John, David & Robert, 2011). On further investigation, it appears there is agreement on the subject matter of vocational education (UIS, 2006; Oketch, 2007; Clarke & Winch, 2007). Vocational education is a multi-dimensional alternative pathway that develops individual and collective work knowledge, skills and occupational competence (Cedefop, 2009; Morris, 2015).

Vocational education imparts practical skills that are gained in a shorter timeframe for specific trades as opposed to the formal standard education system which is longer and more demanding (Greinert, 2005; Agrawal, 2013). It is a non-university education, learning and training which occurs post-secondary consisting mainly of apprenticeship and technical education and training programmes at various educational levels for a specific vocation or career or trade in an occupational area. Some of the occupational areas covered by vocational education include works in industry, commerce, production, information communication and technology (ICT) and trades in television production, masonry, electronics, carpentry, drafting, graphic communications, automotive studies, and electricity and horticultural studies.

Other forms of vocational education include skills for work qualifications and similar courses (Mellahi, 2000) and training which may not necessarily have certification (Nkomo, 2018). Gunderson (2004) explains that vocational education focuses on skilled to semi-skilled upskilling. Basic skills in English, Mathematics and Science are reinforced through classroom instruction and applied laboratory practices. It does not include professional/vocational courses in subjects such as medicine or accountancy, entry for which normally requires prior attainment in non-vocational subjects. There is a trend today in which universities are not just offering formal education but are also offering vocational education as a broad-based inclusive strategy to enhance the development of human capital.

2.3 The role of vocational education in Botswana

Vocational education plays a very important role in Botswana (Alam, 2007; Bob, 2018). The role of vocational education in Botswana has remained fundamentally the same with a few cosmetic changes attempting to fix certain policy weaknesses and overlaps. The roles of vocational education are two-fold for the purposes of this study, that is, on the general economy and on the employment of the youth in Botswana.

2.3.1 Role of vocational education on the general economy

Vocational education plays a very important role in Botswana's economic growth and development (Choi, 2016; Bob, 2018). Botswana today is a progressively stable upper middle income Southern African country (Soest, 2009). The country gained independence in 1966 after nearly 80 years as a protectorate of Great Britain, and at some point, was one of the least-developed countries in the world with little to no formal education opportunities available except for a few missionary schools and about 40 graduates (Bob, 2018). The importance of education and training for the improvement of local and national human capital cannot be underscored. There is universal agreement on the importance of education and training within any governance context. According to Moore (2004), the concept of vocational education is a human capital development strategy. The same author contends that in the 1960's, vocational education was viewed as a national investment into the development of human capital in order to develop capable manpower that could fill in positions in government and other sectors of the economy and enable productivity increases thus fostering economic growth.

Vocational education is a formidable catalyst of economic growth (Dike, 2009). According to Mupimpila and Nayaran (2009), the physical and human capital variables have a significant impact on economic growth in Botswana. Bob (2018) points out that economic prosperity can only be enjoyed from leveraging and harnessing human capital with infrastructure, technology and financial capital for the sourcing, manufacturing and distribution of goods and services. Investment in vocational education goes a long way into the development of human capital. The quality of labour determines the productivity of labour and remuneration packages. Botswana exists in a global technological community and to acquire and utilise new technologies depends on the degree of knowledge and skills gained from education. Since vocational education has the highest enrolments, this gives vocational education more weight in the contribution towards the country's economic growth.

In contrast, Polelo (2007), Tabulawa (2008), and Van Rensburg (2007) disagree with the view enunciated above and believe that there is no underlying relationship between economic growth and vocational education. Vocational education contributes indirectly to economic growth. However, analysts argue that vocational education is insignificant for economic growth in Botswana. There is agreement as to the role played by vocational education in Botswana in contributing towards economic growth and development. However, three reasons are advanced why currently the contribution may not be adequate to sustain economic growth through various economic ventures because of the current mismatch between the types of skills of the trainees and the demands of the labour market. The mismatch between opportunities in the labour market and graduates contributed significantly to youth unemployment. Polelo (2007) explains that vocational education is plagued by those who failed in the formal education and hence could not qualify for university education. Secondly, the blue-collar workers earn minimal wages which are way below the income that can allow earners to invest and/or save. Thirdly, the vocational education sector has the highest unemployment rate in Botswana. Mupimpila (2009) challenges this opposing view by stating that there is a lack of information to corroborate this hypothesis.

Vocational education has been on the rise and an assessment of individuals who qualified through vocational education has revealed that their contribution to the general economy by way of productivity, innovation and competence has been significant. Mupimpila (2009) states that

government has prioritised skills development as evidenced by the rise in enrolments for vocational programmes and courses than formal centres of learning. Since gaining independence, Botswana has been one of the world's fastest growing economies, averaging about 5% per annum over the past decade. Growth in private sector employment averaged about 10% per annum during the first 30 years of the country's independence (World Bank, 2016). As vocational education typically increases productivity at the company level, it seems plausible that it should be possible to observe a similar effect in macroeconomic levels as well. The relationship between education in general and economic growth in particular is ambiguous, and it is often difficult to establish a causal relationship between education and economic growth because the mechanisms involved are complex and often indirect (Björklund & Lindahl, 2005). The following table shows the main economic indicators between 1965 and 2017.

Table 2.1: Botswana Economic Growth from 1980 to 2018 (Source: Fibæk, 2010; IMF, 2018)

Year	GDP Growth (real)
1965-1969	10%
1969-1974	22%
1978	8%
1980	12.0%
1985	7.7%
1990	8.8%
1995	7.0%
2000	2.0%
2005	7.4%
2006	6.2%
2007	8.3%
2008	6.2%
2009	-7.7%
2010	8.6%
2011	6.0%
2012	4.5%
2013	11.3%
2014	4.1%
2015	-1.7%
2016	4.3%
2017	2.2%
2018	1.81% (Provisional)

Table 2.1 above shows that economic growth has not reached the highest peak recorded in 1980 when vocational education was at its highest. The purpose of VET is to provide individuals with skills that are directly applicable in the workplace and it is argued that these are likely to have

direct and immediate effects on productivity and consequently upon economic growth. Vocational education promotes economic growth. According to Bob (2018), the link between vocational education and economic growth is an arbitrary one as the collective and cumulative benefits arising from a lot of individuals being skilled and able to contribute positively in the economy over a sustained period causes economic growth through productivity, technology and innovation as a direct result of upskilling dynamics. There is agreement with respect to the effects and linkages to the general economy and employment of youth-based labour (Rommes, Faulkner, & Van Slooten, 2005; Butler and Ferrier, 2006; Kraus, 2006; Tikkanen, 2009; Gvaramadze, 2010). The assumptions that VET is beneficial to economic growth and to social inclusion are fundamental and ‘classical’. Aid agencies (World Bank and United Nations Educational, Scientific and Cultural Organization (UNESCO)) highly recommend vocational education to developing countries (Comyn & Barnaart, 2010).

2.3.2 Role of vocational education on the employment of youth in Botswana

Vocational education plays a very important role in Botswana (Alam, 2007; Bob, 2018). The role of vocational education in Botswana has remained fundamentally the same with a few cosmetic changes attempting to fix certain policy weaknesses and overlaps. The roles of vocational education are twofold, that is; on the general economy and on the employment of the youth in Botswana.

2.3.2.1 Alternate education system

Vocational education is not new to Botswana. It was introduced in 1962 (Kerton, 2007; Mupimpila, 2009) and forms part of the educational system in Botswana alongside formal education which results in university-based education leading to formal qualifications such as Bachelor, Masters and Doctorate Degrees. Vocational education is vital in provision of employment opportunities to citizens (Fibæk, 2010).

2.3.2.2 Upskilling tool

According to Botswana Evaluation Services Team (2009), vocational education has enabled a lot of Botswana to get skills and knowledge and job-based competencies for individual and collective employability in government and the civil service given the few qualified citizens and

small labour force at independence. It has enabled the empowering of previously unskilled and poor people by availing educational opportunities and access to the labour market through mastering a craft, a trade and skills by having the proper knowledge to be useful in job or self-employment settings.

2.3.2.3 Employability enhancer

Vocational education enhances the individuals' employability through the skills and qualifications gained. Vocational education is seen today as a human resource development (HRD) strategy for Less Developed Countries (LDCs) by aid agencies owing to the lack of skilled workers to meet the demands of LDC economies. According to Choi (2016), vocational education generates employment through industrialisation.

2.3.2.4 Micro-economic access tool

Vocational education ensures that skilled or semi-skilled labour is paid a better wage than cheap, unskilled labour. Therefore, the vocational education system enhances both personal and social productivity (Choi, 2016). Morris (2015) examined the role of Botswana government technical colleges within the tertiary education and training market. He discovered that vocational education is an economic access tool that government has employed for more youth to access it, change their mindsets, and gain specific work-related knowledge and skills to get a job or start a business or both. This is evidenced by the massive investments made in educational facilities and programmes (Bob, 2018).

2.3.2.5 Firm efficiency tool

Kuczera and Field (2010) aver that vocational education enhances the competitiveness and productivity of firms through increasing individual and collective performance of employees. Effective, efficient and optimal vocational education redresses labour market imbalances. Numerous studies demonstrate the benefits of vocational education to solving unemployment through empowering the youth to find self-employment or employment in the public or private sector (Newhouse & Suryadarma, 2011). The economic competitiveness of a country depends on

the skills of its work force. The skills and competencies of the work force, in turn, are dependent upon the quality of the country's education and training systems.

2.3.2.6 Economic advantage

Vocational education plays a very important role in Botswana's economic growth and development (Choi, 2016; Bob, 2018). Vocational education has several economic benefits such as economic growth, development, raising regional and sectorial development, expanding exports, attracting foreign investment, and increasing wages. International institutions such as UNESCO recognise and prioritise the importance of vocational education on skills as critical for education development, labour market inclusion, solving the challenges of income disparities and enhancing economic growth (Choi, 2016).

2.3.2.7 Social inclusiveness tool

According to the European Commission (2007), vocational education can be employed as a tool for the promotion of social inclusion by eliminating all the barriers to education and training. It is having positive social externalities and a means of structural change especially where the youth are concerned. Vocational education works as a crime reduction tool leaving enabling the youth to focus on skills development rather than on sex, drugs, and other social vices and crime (Kingombe, 2011). Vocational education promotes social inclusion, cohesion, mobility, adaptability, employability and competitiveness in the labour market and economy (Wollschläger & Guggenheim, 2004). Vocational education is superior to general education from a socialising point of view, as well as in promoting access to the labour market. However, quality, management, certification, skills gaps and effective work learning outcomes are critical to succeed (Stevenson, 2005).

2.3.2.8 Transformative tool

Initially, vocational education in Botswana was for individuals who could not attend college and required marketable job skills for entry level positions that required less than a four-year college degree. In contrast, the role of vocational education has not changed but has increased in

complexity and scope in that it opens opportunities at the postsecondary level and work-based environments (Levesque, Lauen, & Librera, 2000). The importance of vocational education is further emphasised by Donlevy (2000) who concurs that vocational education has been employed as a transformative tool for preparing young people for work through various upskilling and transformation of the labour force, where the contribution of all individuals is critical to the country's general development, growth and sustainability. It is a viable policy tool that has been used to deal with youth unemployment since independence (Botswana Labour Market Observatory, 2013).

2.3.2.9 Quality improvement tool

Vocational education institutions can play an important role in the reproduction / upgrading of the training materials and facilities to reduce the cost of training by applying virtual learning. The training and vocational education and training (TVET) institutions can also reduce costs by negotiating the reproduction / upgrading of training packages designed and developed for several enterprises at a time and get better prices from end users.

The role of vocational education is constantly changing and may also result in negative externalities. Choi (2016) conducted a comparative analysis of 25 European countries' vocational education and discovered that vocational education deters students from pursuing university studies and thereby better their chances of improving their lives by getting promotion and recognition at work. However, it does reduce the risk of unemployment and increases the students' chances of employability and sustainability (Arum & Shavit, 2015). Table 2.2 shows the changing role of vocational education over the years looking at the past, present and future.

Table 2.2: Changing role of vocational education (Source: Cedefop, 2009)

	PAST (before 1995)	PRESENT (1995-2015)	FUTURE (after 2015)
Epistemological/ pedagogical perspective on VET	On the job; job-specific; behaviourist; separating general from vocational	Increased work-based learning; crossing boundaries (general – vocational; school – workplace)	Multitude of learning approaches; coexistence of occupation-specific and broader learning outcomes, increased work-based learning
Education system perspective on VET	Dead-end programmes, restricted to medium levels; VET provided by schools and companies; 'VET as IVET'	Increased permeability; VET also at higher levels; diversification of providers and programmes; geared for work and education; IVET and CVET	VET at all levels, but risk of polarisation; variety of providers; VET as lifelong learning, risk of fragmentation
Socioeconomic/ labour market perspective on VET	Preparing for job entry; serving employer interest; securing skilled labour	Securing skilled labour and promoting innovation and growth; employability/avoiding unemployment	Multipurpose/pluralist VET (including equity and equality issues)

The role of vocational education in Botswana is constantly shaped by the nature of vocational education, the policy actions and convictions of government, the demands of employers, and the global influence of international vocational education. Literature reveals that unqualified people cannot become productive as they lack the specific know-how and skills to engage in mutually beneficial work and self-employment environments. The fourth industrial revolution requires nations to incorporate the knowledge-based economy by providing high-quality vocational education and training. Education therefore enhances the productivity of labour when faced with scarce resources, a fixed time and the need to produce goods and services in a timely fashion. Sustained increases in the productivity of labour ensures that the efficiency of labour results in higher outputs which contributes to economic productivity and growth. Table 2.3 below is a summary of research on the main effects of vocational education.

Table 2.3: Summary of research on the effects of vocational education

Effects of vocational education	Researchers
Increase competitiveness of the country	Bob, 2018; Gvaramadze, 2010; Tikkanen, 2009; Butler and Ferrier, 2006; Kraus, 2006; Rommes et al., 2005
Improve human capital	Bob, 2018; Sutton and Stephenson, 2005; Gruber et al., 2009; Utor, 2001; Schöne, 2006; Makwinja 2017;
Reduction of poverty	Bob, 2018; Bourdieu, 1986; Coleman, 1988; Putnam, 1993, 2000
Promotes economic growth	Bob, 2018; Gvaramadze, 2010; Tikkanen, 2009; Butler and Ferrier, 2006; Kraus, 2006; Rommes et al., 2005; Comyn and Barnaart, 2010).
Increases labour force upskilling and productivity	Mupimpila (2009); (Gvaramadze, 2010; Tikkanen, 2009; Butler and Ferrier, 2006; Kraus, 2006; Rommes et al., 2005)
Affects innovation, knowledge applications and the use of technology	Mupimpila (2009)
Positive wage effects to the skilled workers	Choi (2016); Comyn and Barnaart, 2010).
Improve labour market outcomes	Cho, Kalomba, Mobarak and Orozco (2013); (Gvaramadze, 2010; Comyn and Barnaart, 2010); Tikkanen, 2009; Butler and Ferrier, 2006; Kraus, 2006; Rommes et al., 2005)
Negative Side Effects such as Unemployment, crimes and social ills	Lancee (2016)
Promote social inclusion and cohesion	Comyn and Barnaart, 2010); Comyn and Barnaart, 2010).
Fosters economic transformation	(Baum, 2002; Budría and Telhado-Pereira 2009; (Mupimpila and Narayana, 2009; Spielhofer and Sims, 2004). Keller (2004)

It can be seen from Table 2.3 above that the main effects can be categorised as either being individualistic, group based such as with a community groups, for example youths, and an industrial group, for example, firms and on a macro scale as with the entire economy.

2.4 Effects of vocational education on economic performance and growth

The effects of vocational education on economic growth and the employment of young people has been the subject of extensive research internationally. However, this area has not been extensively researched in the local context. Of the existing research, assumed effects of vocational education are positive general effects such as gender-based effects, income earning potential effects, training effects, employment facilitation effects, productivity effects (for firms), economic effects for Botswana, innovation and technology catalyst effects, and general health and wellness effects. Other identified effects of vocational education are negative as well and impacting on the individual, the youth, the local industries, the local economy and the development of the country such as youth unemployment effects, training and opportunity cost trade-offs effects and the outdated vocational education model effects.

2.4.1 Positive general effects

Available literature identifies the effects of vocational education as positive effects on the individual, firm and the collective economy. The effect of vocational education has been such that previously disadvantaged groups including students had a way to access the labour market directly (Mupimpila, 2009). The positive effects are discussed below.

2.4.1.1 Gender-based effects

Gender-based effects of vocational education include research on gender differences and sectoral impact such as on wages and social aspects. Choi (2016) identified the gender labour force linkages and their relationship with vocational education. Choi (2016) analysed the effects of vocational education on wages on gender lines and found contrasting disparities that explain why women in Botswana succeed and end up being paid less than their male counterparts. Cho, Kalomba, Mobarak and Orozco (2013) also identified gender differences in the effects of vocational education.

2.4.1.2 Income earning potential effects

Other effects of vocational education include earning potential, expenditure increments potentials, entrepreneurial empowerment in being able to start-up a business and increased labour mobility and adaptability to areas with a higher propensity to employ skilled and semi-skilled labour.

2.4.1.3 Training effects

Bob (2018) argues that vocational education has enabled the training of thousands of Batswana since 1962 to date. This has resulted in the upskilling of labour through the imparting of practical skills. Vocational education has also facilitated the employment of citizens in production and craft jobs. Vocational education affects employment outcomes directly. Employment is the only outcome in the paid labour market for individuals with vocational education because less qualified individuals are not in demand by employers than those who have better vocational

qualifications, skills and previous employment experience. For both private and public sectors, vocational education can generate positive labour market outcomes such as increased productivity, wages and a better standard of living (Mupimpila, 2009).

2.4.1.4 Employment facilitation effects

Vocational education, while it has been able to redress the issue of unemployment in the 1960s to 1980s, has failed to effectively solve unemployment challenges. This has mainly been due to its focus on only a select list of trades such as plumbing, electricians, mechanics, etc. Later studies have confirmed this assessment. Budría and Telhado-Pereira (2009) found that vocational training increases the probability of one getting employment, in particular in the long run (2 years after the completion of the training programme). However, they also found that the effect is stronger with higher previous education, and, that the effects are very strong for a person with a tertiary education qualification prior to the training programme. Thus the relative attractiveness of vocational training programmes for young people with a weak academic background should have helped many to a position in the labour market. Several methods have been employed, over the years, to induce young people in vocational training to proceed to higher education but the results have been mixed. Vocational education does improve the chances of young people to gain access to the labour market.

2.4.1.5 Productivity effects for firms

Employers have also gained from vocational education in terms of productivity increases for firms. Choi (2016) found positive wage effects accruing to skilled workers trained through vocational education after secondary school. Several dissenting studies (Utor, 2001; Sutton & Stephenson, 2005; Schøne, 2006; Gruber et al., 2009) have been made to investigate the effects of training on productivity, with results pointing in different directions. An important reason for the diverging results is the complexity of training in firms. Thus, studies at firm level indicate that training on average has positive economic effects. However, these effects are not universal. Training does not automatically increase productivity and increasing productivity does not necessarily translate into increased profitability. This could in part be attributed to the difficulties to observe the acquired skills (Pankhurst, 2010). Furthermore, even when increased skills seem

to raise company productivity, a recent study indicates that this effect mainly refers to high-level qualifications. Vocational training has, according to this study, only a small impact on productivity (Galindo-Rueda & Haskel, 2005).

2.4.1.6 Economic effects for Botswana

There are marked economic effects on labour due to vocational education. Budría and Telhado-Pereira (2009) argue that the productivity of labour is slightly lower for those with elementary vocational qualifications than those with moderate and advanced certificates. Vocational education reduces underemployment and unemployment rates. Khilji, Kakar and Subhan (2012) concur that vocational education meets immediate market demand and long-term structural change. Bordeaux Communiqué (2008) explained that vocational education remains a major tool in the transformation of the European economy, and there are several other cases (Baum, 2002; Budría and Telhado-Pereira 2009) of positive effects of vocational education in other countries, regions and specific sectors of the economy (Spielhofer & Sims, 2004; Mupimpila & Narayana, 2009).

2.4.1.7 Innovation and technology catalyst effects

Keller (2004) observes that a few developed nations generate new technology and this is due to the level of human capital available to develop new technology and diffuse it internationally. The readiness and flexibility of workforce and human capital determines the extent to which developing countries benefit from new technology and innovations (Heckman, 2002). Cho and Honorati (2013) argue that it probably takes longer for labour market effects to materialise.

2.4.1.8 General health and wellness effects

There are also effects of vocational education training on the general well-being and health behaviours of the recipients. Literature also states the effects of vocational training on non-market outcomes including psychosocial well-being, self-esteem, and sexual behaviour (Ashraf, Field, and Lee 2010; Devoto, Duflo, Dupas, Pariente, & Pons, 2012). It appears from literature

that participating in training had strong positive effects on subjective measures of well-being such as happiness, satisfaction and life improvement.

2.4.2 Negative effects

The second group of literature concerns itself with the negative effects of vocational education such as youth unemployment effects, training and opportunity cost trade-offs effects and the outdated vocational education model effects.

2.4.2.1 Youth unemployment effects

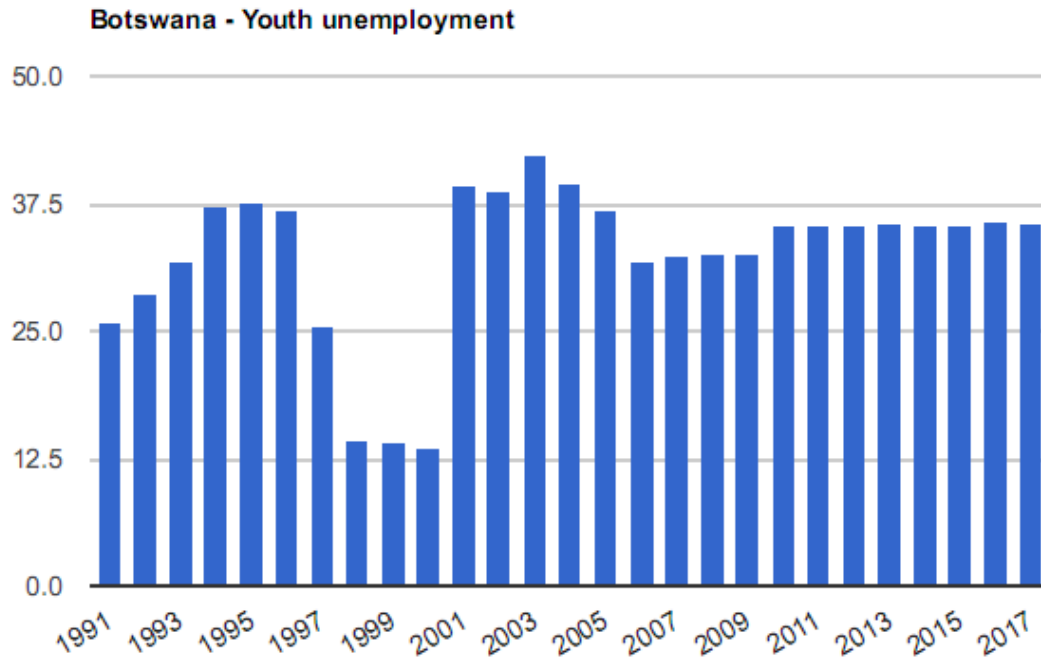
Youth unemployment has become a major social and economic problem, with consequences such as underutilisation of human capital, possible skill shortages in various sectors of the economy, low income among young people, and potentially increasing drug abuse and criminality (Björklund & Lindahl, 2005; Preston and Green, 2008; Strietska-Ilina, 2008; Dettmann and Günther, 2009; Meager, 2009). The unemployment figures for young people have remained high (if not fluctuating) ever since (Cedefop, 2009). The problem of unemployment is not peculiar to developing countries only as industrialised countries experience high youth unemployment as well. The unemployment is higher in countries where there is a predominant vocational system. The foremost critical result of training is investment in human capital. Human capital development is a good thing since this may have long lasting market implications in the long run. However, the evaluated impacts are negative and insignificant (Dettmann & Günther, 2009).

Vocational education has been put forward as a particularly suitable remedy for youth unemployment. However, it is failing to contain the youth unemployment problem (Bob, 2018). Lancee (2016) analysed the negative side effects of vocational education by analysing a cross national study on the unemployment risk of young people. He found that unemployment rates among immigrant youth are much higher than among the locals. Moreover, youth unemployment rates differ among European countries.

The causes behind increasing youth unemployment and the subsequent difficulties to reduce it are complex and intertwined. Ryan (2001) identified macroeconomic development, the ‘double skill bias’, labour market institutions and the school-to-work mechanisms as the major causes of the complexity of the youth unemployment problem. He notes that these mechanisms seem to have had different effects in various countries, which implies that national institutions (not only in the labour market) are important. Steven McIntosh reports a positive association between vocational qualifications and being in employment, but also notes that the direction of causality is not clear (McIntosh, 2009).

The United Nations System in Botswana (2007) further assert that although there are other factors besides education that affect youth’s unemployment, the level of youth unemployment in the country indicates that education is not sufficiently preparing school leavers for the world of work – whether in terms of skills, attitudes and/or expectations. Botswana must address these challenges because the high levels of youth unemployment have wider social, psychological and economic implications (The Work Foundation, 2012), as well as political stability implications (Urdal, 2006, 2012). Botswana’s labour force challenges are also exacerbated by the current trends in the labour market, a market described by Tarique and Schuler (2010) as increasingly global, complex and highly competitive. Unemployment rates in Botswana between 1991 and 2017 are shown in Figure 2.1 below.

Figure 2.1: Botswana youth unemployment rate from 1991 to 2017 (Source: Tarique & Schuler, 2010)



The employability of graduates in a country like Botswana is important because, generally, the expectation from parents, graduates, educational financiers such as government sponsors and employers are that institutions of higher learning should ensure that there is an alignment between what is learnt at school and what is required by the world of work. For graduates, gaining employability skills and attributes is important because, while many employers are prepared to fund training to help employees develop more sophisticated job-related skills, it has been reported that employers are not prepared to help people develop the skills that are regarded as a basic requirement for employment (Martin, Villeneuve-Smith, Marshall, & McKenzie, 2008). Furthermore, in a developing country like Botswana, many family units are highly dependent on the income of a first-generation university/college graduates, leading to disappointments when their children find it difficult to find employment after graduation.

2.4.2.2 Training and opportunity cost trade-offs effects

Vocational education also displaces valuable hours of work in both paid and self-employed work. This is important as it reveals the opportunity cost of training attendance in which the

trainee has forgone time and earnings. Cho and Honorati (2013) argue that the high opportunity cost explains the high dropout rates among trainees. Vocational education centres have become a location power drawing in trainees who seek and anticipate a longer duration of training. This has in turn affected the labour mobility as employees are less likely to migrate away in search of employment. Vocational education graduates can make better decisions as to which sector to work from or earn better wages.

2.4.2.3 Outdated vocational education model effects

Lack of opportunities for youth poses a serious challenge to the nation as it increases unemployment and dependency on government assistance programmes (NDP 10, pg.107/8). According to a study entitled “Technical and Vocational Education Training in Botswana” Siphambe et al (2009), the development of Vocational Education in Botswana was highly influenced by the country’s economic history. At independence, Botswana like most countries that had a lack of skilled manpower, neglected vocational education in favour of producing a workforce that could take over the “white collar” jobs - technocrats). Therefore, as a result, not much expansion of industrial activity in different sectors of the economy occurred thereby inhibiting the development of vocational education in the country. According to Cho, Kalomba, Mobarak and Orozco (2013) and Gindling and Newhouse (2012) rapid and high unemployment makes vocational training more relevant.

Tabulawa (2009) explained that the educational and instructional framework was developed to empower and equip graduates with exceptional skills and know-how to solve critical issues and learn and enable social transformation for the betterment of all Batswana. This vision is failing to be achieved for all citizens as most students drop out of school and thereby cost the government dearly since education is free and this also continues to increase the rate of unemployment (Makwinja, 2017).

2.5 Challenges of vocational education in Botswana

Vocational education has worked as an interim solution to the lack of skills available in the country at any given time. The mixed results of vocational education in Botswana have increased

due to the challenges of vocational education. According to Okoye and Arimonu (2016), technical and vocational education cannot contribute greatly to the reduction of abject poverty, hunger and unemployment because it is handicapped by numerous challenges (Eze, 2013). Oranu (2004) observed that the good intentions of successive Botswana governments about vocational education programmes are still fraught with a lot of challenges. According to Akoojee (2005), a series of key challenges were identified in the policy phase of the mid-1990s, that is, access and equity, quality, relevance and focus, parity of esteem, articulation, mobility and integration, and finance.

Many brigades and technical colleges are already obsolete or grounded (Ojimba, 2012). Many important projects like infrastructure development are managed by vocational graduates from China, Germany and other African countries. The failure of government to address the Motswana graduate is disappointing (Nworlu – Elechi, 2013). Vocational education is constrained by lack of adequate funding as a result of a limited budget which affects their ability to operate, hire qualified and experienced lecturers, assessors, and procure training equipment and technology for skills training (Mohammed, 2001; Momoh, 2012; Okoye & Arimonu, 2016). This situation results in poor educational outcomes for vocational students and the institution (Agbionu, 2003). The lack of adequate facilities such as laboratories, workshops and equipment hamper the delivery of effective and quality vocational education.

The neglect and failure to fully support vocational education has resulted in a high labour mobility and brain drain in which qualified vocational education teachers have migrated to western countries (Bassi, 2004; Okoye & Arimonu, 2016). Okoye and Arimonu (2016) observe that there are limited opportunities for training, development and retention. There are also challenges concerning the curriculum of vocational education. The programmes offered require re-design, review and re-evaluation to match with the needs of the labour market. It has been said to be too theoretical and academic, lacking the necessary technological and engineering skills that are required. The current curricula focus on generic areas and science education which is obsolete in today's world.

There is a lack of prioritisation of the primary needs of vocational education in Botswana. Youth in Botswana are plagued with high unemployment and many studies show that there is a shortage of readily employable persons because of irrelevant training methods and are not preparing enough people with the right skills to meet labour market demands (Atchoarena & Delluc, 2002). In addition, there are conflicts of interest in government departments over vocational qualifications which affects implementation and monitoring.

The performance of vocational education students average pass mark is below 50%. In addition to the resource and leadership challenges, vocational colleges have run down buildings and poor work culture for students and teachers. Vocational education is quite separate from the formal School Education System and is currently viewed negatively and has a reduced social status compared to the formal university education system. Holders of vocational education face fewer promotion prospects and low-income. There is a growing trend among government leaders, parents and students to highly value degree education more than vocational one (Nworlu- Elechi, 2013). The vocational education system is not as structured as the formal education system in which the government heavily invested from the 1980s and neglected vocational education. Today, it fails to address multiple social and economic development priorities, from poverty, food security and social cohesion to economic growth and competitiveness unlike it did between 1962 and 1980.

2.6 Theoretical framework

According to Holden (2016)'s human capital theory, a high rate of return on investments in human capital indicates the path towards economic development in terms of skills development and the promotion of economic growth. The system in Botswana requires much reformation, revision and monitoring for corrective actions. The researcher has studied and found that the best vocational education systems in the world are found in Germany, Austria, Denmark and Switzerland. The suggested theoretical framework is the German Model of vocational education. A core strength of the German economic model is that the country produces such well-trained employees systematically, and in very large numbers, through a 'dual system' for vocational education and training (Dual VET). The Dual VET system is a long-standing, key pillar of

Germany's remarkable performance as a major industrial power (Holden, 2016). Germany, as a country, has a remarkable and stable economic growth rate coupled with firms with absolute industrial competitiveness as a result of high investments in human capital which resulted in labour upskilling and development. Figure 2.2 below shows how vocational education outcomes and the employment of vocationally qualified youth are virtually linked.

Figure 2.2: Vocational education and labour force linkages (Source: Holden, 2016).

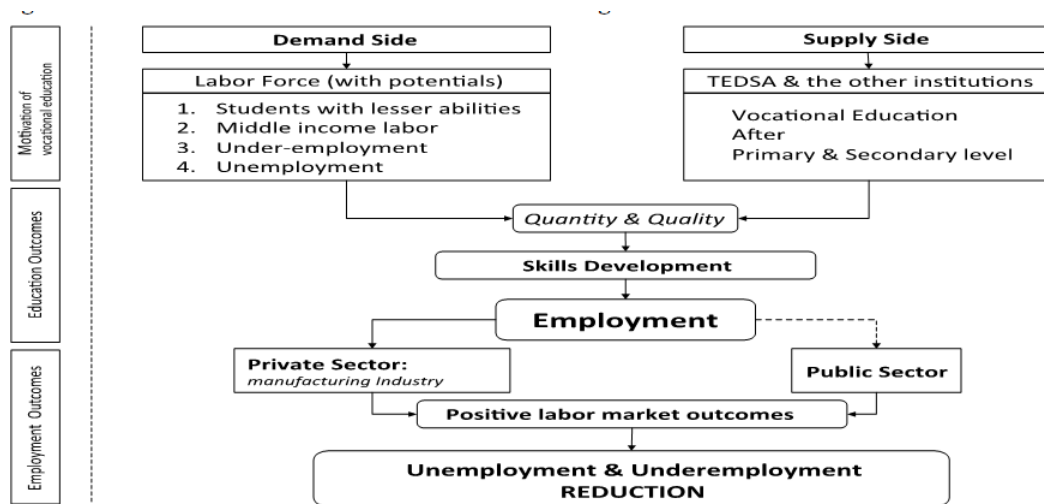


Figure 2.2 above demonstrates that employment in the private and public sector is a function of equilibrium in the labour market. The equilibrium between the demand and supply side of the labour market determines the quantity and quality of labour deployed to the market. In the event that unemployment and underemployment occur, it is as a result of the disequilibrium between the demand and supply side of the labour market. It is the contention of the researcher that due to the reduction of the effectiveness of vocational education on the supply side, this is what is causing an imbalance and thereby causing unemployment and underemployment in the Botswana labour market. Figure 2.3 below demonstrates that a fully functional and effective dual system based on social reform can be useful.

Figure 2.3: Research Model: Dual System based on Social Reform (Source: Holden, 2016)

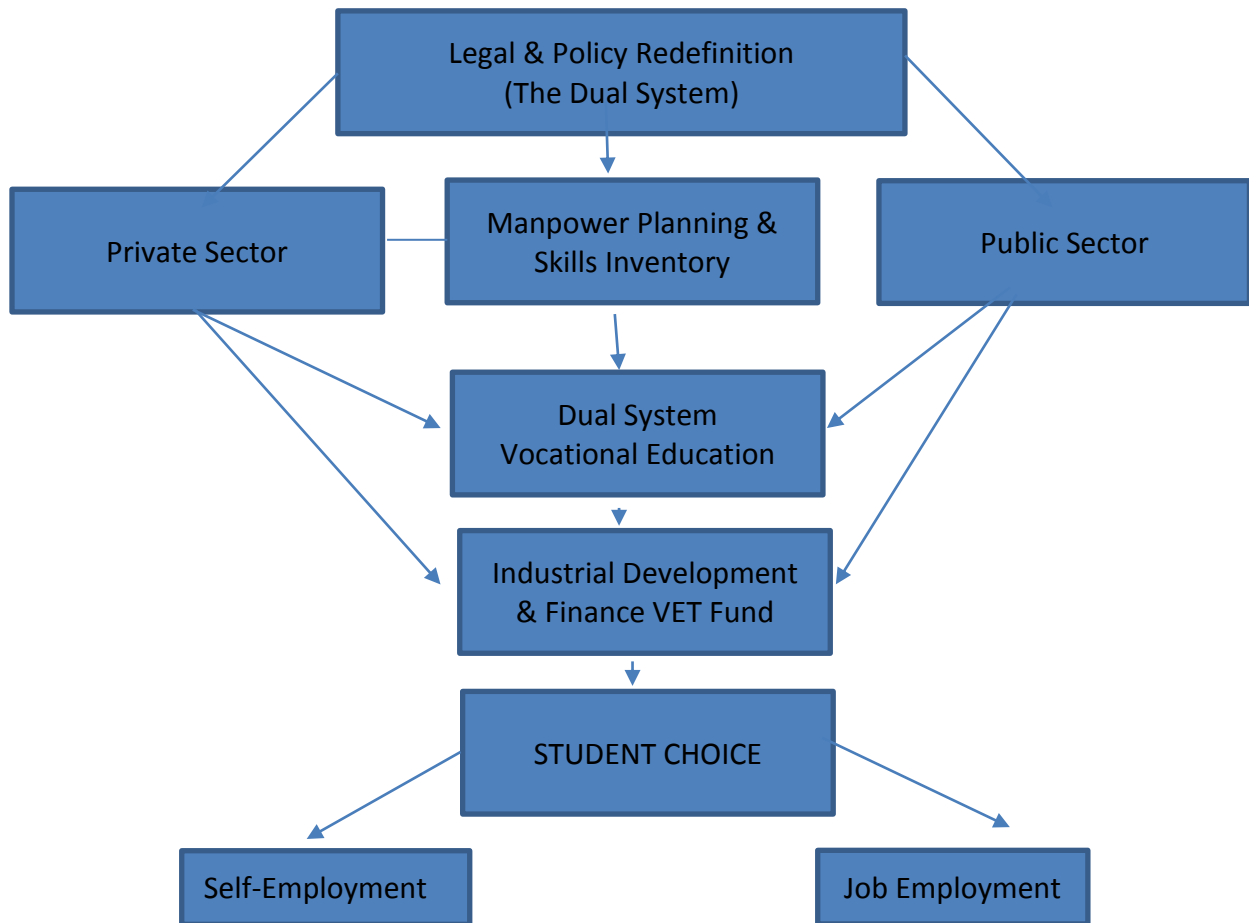


Figure 2.3 above demonstrates the dual system of vocational education based on social reform which involves a two-principle system for the private and public sector determined through a rigorous manpower planning and skills inventory. This system balances out the demand and supply of the labour market in agreement and cooperation with industry and government departments to produce positive and favourable labour market outcomes resulting in full employment of available graduates from all education sources. This dual system in practice will be anchored on a definitive rules-based system enforced by a policy redefinition to initiate and maintain a balance between supply sources and demand sources supported by a fully functional and financing industrial framework that leads to either self-employment or job employment or both.

The dual system of vocational training has proved an effective means of combating youth unemployment and skills shortages. Trainees gain practical skills working in a business while

at the same time acquiring theoretical knowledge at a vocational school. This system of training has proved an effective instrument against not only youth unemployment, but also skills shortages. As a result, it has come to be regarded internationally as a successful model. This involves not only theoretical instruction, but also practical work in the workshop and production. International cooperation in vocational education has many positive effects. Young people gain new prospects in their home country, and social harmony is strengthened in the countries involved because a supply of skilled specialists creates competitive advantages. Botswana should consider adopting this method and blending it with their original model of vocational education.

2.7 Possible solutions to the challenges of vocational education in Botswana

Vocational education in Botswana is not effective and is plagued by a myriad of challenges that require immediate attention. There is a need to modernise and catalyse vocational education (Heyneman, 2003). Martin et al. (2008) advocates for the proper employability of vocational education graduates as this will improve an individual's ability to earn a living. Employers also have a responsibility to support vocational education initiatives financially and otherwise. They need to be proactive in talent management (Hogg, 2014). The purpose is to ensure that employees are competent for work life and maximise its productivity (Juhdi et al., 2010).

Vocational educational institutions and employers need to form a curriculum development and reform committee so that they can collaborate into developing the best curricula that speaks to employers needs in industry, commerce and government (McGrath, 2009) by enabling students to undergo a new type of training geared towards industry such as competency-based training (Rieckmann, 2012). There needs to be a sectoral wide reform in incorporating vocational education in the modern economy by paying market-based wages. Other matters identified by literature that require reform are improving funding access, developing multiple pathways for secondary education and ensuring that low performance students are supported until higher marks are obtained (McGrath, 2009; Rieckmann, 2012). Training staff in industry or commerce could be attached or seconded to institutions on a regular or part time basis, not only to cover shortages, but also to bring work ethics into training. Providing incentives for experts to train as teachers in priority areas and other areas of shortage. This review improves upon previous work

and fills a gap in literature about the effects of vocational education on the economy and employment of youth. This literature review is a concise review of the nature, role, effects and challenges affecting and influencing vocational education in Botswana.

2.8 Chapter summary

This chapter has put forward working definitions and explained the nature of vocational education. The review demonstrated the pivotal role played by vocational education in ensuring that there is a pathway that leads to success, productivity and skills in craftwork and practical work aspects. The effects of vocational education were also assessed, indicating both the positive and the negative effects. The chapter also highlighted the theoretical framework applied to this study which is based in part on the human capital theory and the dual system of vocational education successfully pioneered by Germany. The next chapter presents the methodology of the study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The previous chapter reviewed existing literature on the effect of vocational education on the economy and employment of youth in Botswana. This chapter presents the research methodology used for the study. The chapter describes the research design and methodology employed adopted for the study. The chapter also discusses the methods of data collection, population and sample selection, validation of the instruments, reliability of the instruments, data collection procedures, ethical considerations, and data analysis and interpretation of results.

3.2 Research design

A survey research design was adopted for this study. The choice of this research design was motivated by the need to gain insight into people's (managers) subjective understandings and perceptions in order to fully address the purpose of the study and answer the research questions (Ellis, 2008). Survey research collects and analyses data from a representative group of the entire population using the questionnaire, sampling methods and rules. The design of the study was based on the explanatory method of research which goes beyond merely describing characteristics, and aims to show why relationships, patterns and links occur, that is, causality. The quantitative approach to research attempts to isolate and generalise phenomena. It is characterised by simulating events in controlled environments, analysing the key variables that a phenomenon exists and generalise or draw conclusions about the broader population (Greener, 2008; Saunders, Lewis & Thornhill, 2009).

According to Mouton and Prozesky (2005: 74), a research design is “a plan or a blue print of how a researcher intends to conduct a study”. This involves plans for data collection, the instrument for gathering information, and how information gathered would be processed and analysed to give meaning to a research finding. The research study design is a research plan that

outlines the elements (variables, respondents) their interrelationship, and methods involved in the research, whilst producing valid conclusions and conduct practical research (Bob, 2018). Figure 3.1 below shows the research process adopted for this study.

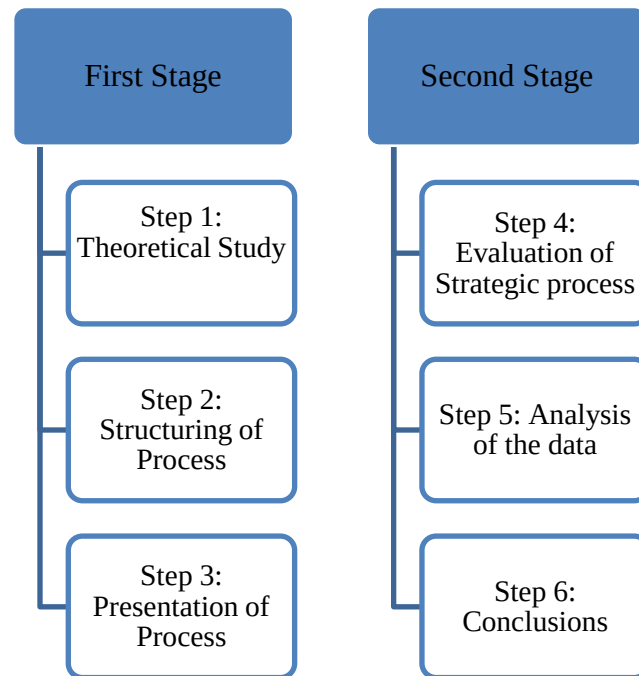


Figure 3.1: Research Steps (Source: Researcher)

3.3 Methods of data collection

The researcher adopted a quantitative research methodology to examine the effects of vocational education on the economy and employment of youth in Botswana. A correlation between the two variables was ascertained to determine if the two variables are related or linked closely (Salkind, 2003; Sekaran, 2006). The research design was based on a survey of staff working in the department of information. This was relevant and suitable for the research as the opinions of respondents were obtained and analysed considering the research aim and research problem. The process of gathering data using the quantitative procedures is shown in Figure 3.2 below.

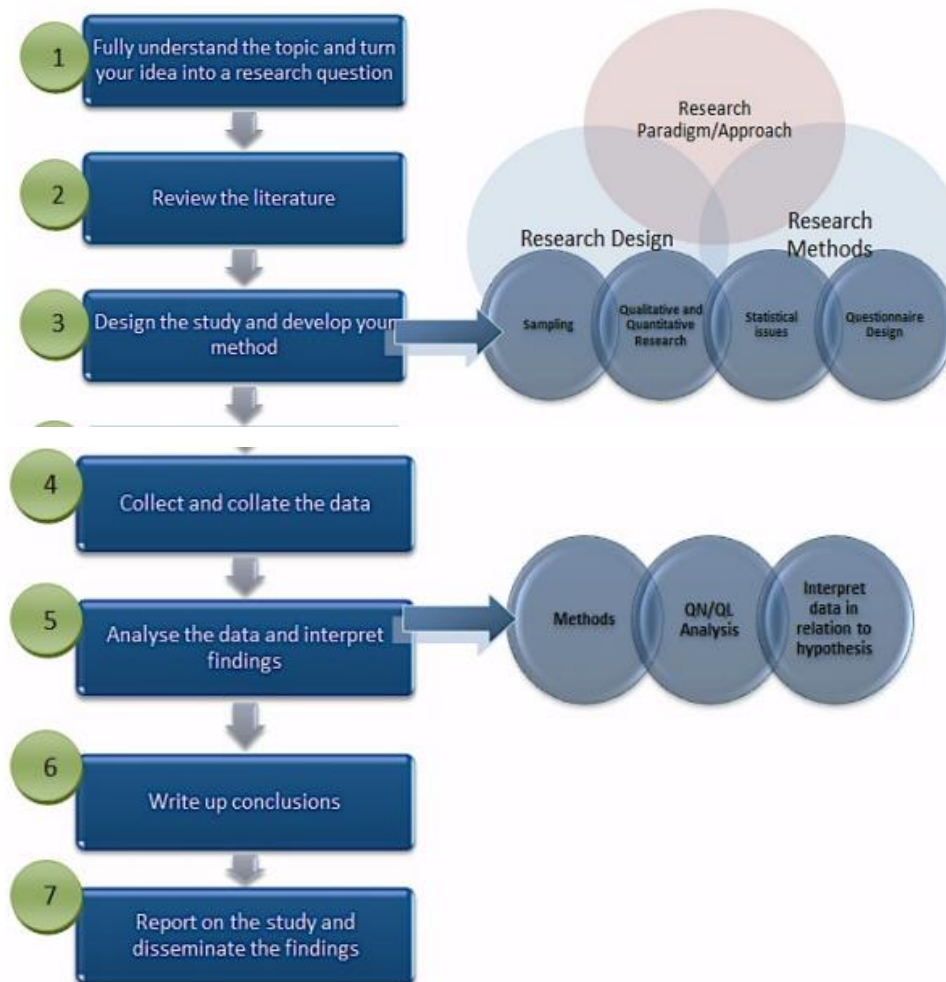


Figure 3.2: Quantitative research process (Source: Bob, 2016, p.38)

Figure 3.2 above illustrates the process that the study went through in terms of data collection from topic selection up to the final report.

3.4 Population and sample selection

The population of the study included all staff who were working in the Ministry of Education, vocational colleges and industry (employers of manufacturing concerns) at the time the study was conducted. The entire population of staff in the Department of Skills Development (DSD) was 550 workers. Only managers were targeted because they are better placed to understand the formulation and implementation of vocational education policy and whether it is succeeding or

not. The population of the study is defined as all the elements under study (Sekaran, 2003). Asia (2000:39) defines the population of a research as “all conceivable elements, subjects or observations relating to a particular phenomenon of interest to the researcher”. A research population relates to the total universe of units from which the sample is to be selected (Ghauri & Gronhaug (2005). The population of study is the people that will help in the generation of data to carry out a research.

According to Sekaran (2000:23) “a sample is a subset of a population. It is a group of people who have been selected to be in the study.” Sampling refers to the process of selecting a representative subset of observations from a population to determine the characteristics (i.e. the population parameters) of the random variable under study (Wegner, 2000). As complete coverage of the population was not possible due to cost and time constraints, a subset of the population (sample) was studied. The researcher studied the sample in an effort to understand the population from which it was drawn. Table 3.1 below shows the sample adopted for this study.

Table 3.1: Sample adopted for the study

Department	Number of Respondents
Ministry of Education: DSD	10
Vocational colleges	14
Employers	16
Vocational graduates	18
Form 5 students	3
Total	61

The sample shown in Table 3.1 above was targeted because it represented the vocational education value chain. The sample was selected in a deliberative and random fashion to ensure its representativeness. The researcher targeted fifty (50) respondents. A sample is defined by Taylor (2005) as a subset of a population or universe. ‘A sample is a proportion or subset of a larger group called a population...A good sample is a miniature version of the population of which it is a part – just like it, only smaller.’ (Fink, 2003: 1).

The sampling technique used in the study was convenience sampling. Leiner (2014) defines convenience sampling as haphazard sampling or accidental sampling based on non-probability sampling where members of the target population are ‘easily’ accessible and available for the study. Convenience sampling was adopted due to its relatively easiness of application whereby the data generated could be used directly for the research without any further need for inclusion criteria and randomness procedures. In addition, the proximity of the sample elements also made it possible to employ this method. The main objective of convenience sampling was to collect data from information-rich participants who were easily accessible to the researcher such as recruiting providers attending a staff meeting (Ghauri and Gronhaug, 2005; Terre Blanche et al. 2006).

3.5 Validation of the research instruments

The questionnaire used for the study was validated by education and industrial research experts who reviewed the instrument to ascertain its sufficiency, appropriateness and adequacy for the study. Their suggestions included blending open-ended questions with closed-ended ones. In addition, the experts recommended using the Likert scale to be able to ascertain the weight of the opinions and perceptions of respondents. All suggestions were evaluated and useful ones were adopted for the questionnaire.

Having validated the questionnaire, a pilot study was administered to five respondents who were identical to the target population. Before distributing the questionnaire, it was pre-tested on a reference group of respondents who were not directly involved in the real survey, but who matched the composition of the true sample. The questionnaire was pilot-tested before it was used to collect data. During the pilot study, each question was discussed and analysed in order to check the readability and comprehensibility of the questionnaire. One questionnaire applied to all categories of respondents.

According to Kothari (2004), the main purpose of conducting a pilot study was to determine whether:

- The respondents understood the questions

- The questions were relevant to the research questions
- The respondents were willing to answer the questions

The aim of the pilot study was to give the researcher the opportunity to rephrase some items where necessary and enable assessment of the validity and reliability of the data that was going to be collected. However, from the pilot test, the researcher was able to understand the ambiguity of some items and so had to modify them. The researcher resorted to the use of simple and concise English to avoid ambiguity.

Validation is concerned with ascertaining whether the research instrument used is measuring the concepts it is intended to measure (Hardy & Bryman, 2004). It involves taking the research findings back to the participants and determining whether those findings conform to the experiences of the participants or not (Silverman, 2001). Irrelevant questions and inaccuracy of the test may cause some inferences drawn from the research design to become invalid. To eliminate bias and ensure reliability, the respondents will not be influenced by the researcher in any way. Respondents were free to express their views without fear and/or bias. Validity can be affected by research bias. Researcher bias occurs when a researcher selects data that fits the researcher's existing theory.

Lubbe (2003) warns that it is naive to assert that any form of research is without bias. Even in the physical and life sciences, bias exists because researchers interpret phenomenon according to their own cultural orientation. Smith (2007) explains the approaches that can be used to counteract biases which the researcher relied on in this research as follows:

- Using multiple sources such as owners, managers, supervisors, staff and graduates to develop stronger evidence based on an objective assessment rather than a single respondent view.
- Using literature to back up the research findings.
- The use of gender-neutral words.
- Avoiding language that suggests evaluation or reinforces stereotypes.

3.6 Reliability of the instruments

In this research, reliability was strengthened in the following ways: -

- Pre-testing the questionnaire to eliminate errors in question items
- Scale-rating questions on a 1-5 Likert scale to minimise inferences
- Language for the questionnaire- the questionnaire was in English, which from the researcher's point of view could not affect responses as respondents were expected to speak, write and read the language
- Correlation analysis- This is used to describe the linear relationship between two or more variables without attributing the effect of one variable on another (Salkind, 2000; Denscombe, 2003).

The purpose of determining a correlation coefficient was to ascertain whether a relationship between two or more variables exists and if so, to establish the magnitude and direction thereof (Simon & Goes, 2011). The strength of the relationship is indicated by the correlation coefficient (r), which varies in magnitude between +1 and -1 (Simon & Goes, 2011). The larger the absolute value of the correlation coefficient, the stronger the relationship (Salkind, 2000) as can be seen in Table 3.2 below.

Table 3.2: Correlation coefficient (r) (Simon & Goes, 2011, p.46)

Absolute value of r	Description of relationship
Less than 0.20	Indifferent, almost negligible
0.20 – 0.40	Definite but slight relationship
0.40 – 0.70	Moderate relationship
0.70 – 0.90	Strong relationship
0.90 – 1.00	Very strong relationship

Source: Adapted from Behr (1988:46).

Table 3.2 above shows a positive relationship as indicated by a positive correlation coefficient while a negative relationship is indicated by a negative correlation coefficient (Denscombe, 2003). Correlation analysis was employed to explain possible relationships among variables considered in this study.

Reliability refers to consistency where the characteristics include that of the instrument and the conditions under which it is administered (Cooper & Schindler, 2001). It focuses on whether the process of the study is consistent and reasonably stable over time and across researchers and methods (Scherman, 2007).

3.7 Data collection procedures

After the pilot testing and all necessary modifications had been done, the questionnaires were administered directly to the chosen sample for the study. Fifty questionnaires were given out and all of them were successfully completed and returned ensuring a 100% response rate. Getting a 100% response rate was made possible by the researcher's colleagues who offered a helping hand. The opposite could have been the case if the researcher had taken the lone task of going around the institutions to collect the questionnaires.

The questionnaire was used to gather data because of its numerous advantages and its ability to yield the most satisfactory range of reliable data. Vogt (1993) cited in Terre Blanche, Durrheim and Painter (2006: 484) defines a questionnaire as “a group of written questions used to gather information from respondents” and it is regarded as one of the most common tools for gathering data in the social sciences and business. A questionnaire usually consists of several measurement scales and elicits demographic information from respondents. According to

Struwig and Stead (2001), questions asked in questionnaires are based on the reviewed literature which informs the concepts covered in the study.

The research instrument was developed at the research study phase. The justification of choice of this type of instrument lies in the fact that questionnaires can achieve a high response rate if properly administered (Britcut, 2009). Furthermore, the research questions call for standardised and comparable information from the respondents. A questionnaire was administered to 50 respondents. One questionnaire was given to each respondent.

Ghuri and Gronhaug (2005) suggest that the questions and design of the questionnaire should be adapted to the educational levels and background of the respondents. A questionnaire has its advantages and shortcomings. Terre Blanche et al. (2006) argue that questionnaires are easier to administer thereby making it possible to reach a large population compared to using other methods. The cost of printing and distributing questionnaires is also reasonable for researchers. Questionnaires are also easy to analyse especially in quantitative studies. With questionnaires, the researcher has a written record of people's responses. Most questionnaires do not require the identity of respondents thereby encouraging honest opinions from them. A researcher can design questionnaires in a way that simplifies analysis (for example, Likert scale format, open or closed-ended format, multiple choice and others).

On the other hand, a questionnaire requires some level of expertise to develop. Some respondents may not be honest in their answers thereby distorting the overall findings of the study. Also, some respondents may not fully understand some of the questions while some may misinterpret the questions as the researcher may not be around to clarify or respond to respondents' queries. Another setback to survey questionnaire is that participation on the part of respondents is voluntary so some respondents may refuse to complete the questionnaire while some may not return completed questionnaires. A poor return rate can negatively affect the findings of the study. Open-ended questions may generate a large volume of data that can take a long time to process and analyse.

In order to overcome the shortcomings noted above, the researcher ensured that a pilot study was conducted before the questionnaire was administered. Such a pilot survey brought to light the weaknesses of the questionnaire, if any, and of the survey techniques. The researcher therefore made improvements to the questionnaire based on the results of the pilot study.

The questionnaire was administered through the drop-and-pick method to the respondents to give them enough time to complete the questionnaire. The researcher used assistants to distribute questionnaires physically. Upon completion, the research assistants collected the questionnaires and ensured high completion rate and 100% return rate.

3.8 Ethical considerations

In this study, the researcher obtained voluntary and informed consent by providing the participants with information regarding the research project and the expectations emanating from participation in the study. Participants were also assured that confidentiality would be maintained throughout the study and they were protected through the exclusion of sensitive and/or personal information in the feedback report provided at the end of the study. Participants were given the option to withdraw from the study if at any point they perceived that participation in the study was harmful to them (Terre Blanche & Durrheim, 1999). There are many ethical issues in relation to participants of a research activity. These are outlined below.

i) Collecting information

The request for information did not put pressure or create anxiety on a respondent. This piece of research is likely to help society directly or indirectly. Therefore, the researcher first obtained the respondents' informed consent.

ii) Seeking consent

Information was collected with the express knowledge of the participants and their expressed willingness and informed consent.

iii) Providing incentives

No incentives were given to respondents because they would realise the importance of the study.

iv) Seeking sensitive information

In collecting data, the researcher was careful about the sensitivities of the respondents.

v) The possibility of causing harm to participant

Information collected was examined carefully to prevent any harm to the respondents for participating in the study.

vi) Maintaining confidentiality

Respondents were assured of the utmost confidentiality with respect to their identities and responses.

‘Ethics’, in the context of research, refers to the appropriateness of behaviour in relation to the rights of those who become subjects of research (Saunders, Lewis, & Thornhill, 2006). Researchers have an ethical obligation to participants in a research study (Babbie, Mouton, Vorster & Prozesky, 2006) in Sekaran (2004). Ethical research requires protecting the welfare and rights of research participants.

3.9 Data analysis and interpretation of results

The main objective of data analysis is to transform information (data) into a meaningful form to answer the original research question(s) (Terre Blanche et al. 2006). The Statistical Package for Social Sciences (SPSS) was used to analyse data. Data was processed using descriptive statistics. The questionnaire responses were cleaned and grouped into various categories to facilitate analysis using descriptive statistics. Frequency distribution tables were used to summarise the data from respondents. The analysed data was presented in frequency distribution tables and pie charts for ease of understanding and interpretation. According to Richmond (2006), the purpose of analysing and synthesising data is to make sense of disaggregated information by showing the relationships. The results were presented in the form of tables, pie charts, and graphs because these are easy to read and understand. Tables and figures and explanation of data for each table and figure were provided.

Data collected through the questionnaire was analysed using the SPSS v20 software. The analysis included the use of descriptive statistics such as Tables, charts, figures and frequencies.

The study's source of information was primary and secondary data. Primary data is original research carried out on first-hand experience, while secondary data is published data that is widely available. Primary data includes information collected from interviews, experiments, surveys, questionnaires, focus groups and measurements. Secondary data can be found in publications, journals and newspapers.

3.10 Chapter summary

Chapter 3 discussed the research design and methodology adopted for this study, as well as the methods of data collection and the population and sampling selection procedures. Validation and reliability of the research instruments, ethical considerations, data analysis and interpretation of results were also discussed. The next chapter presents the main findings of the study.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF RESULTS

4.1 Introduction

The previous chapter discussed the research design and methodology adopted for this study. The purpose of this chapter is to present and analyse the results of this study in order to address the research objectives and answer the research questions. The aim of this study was to examine the effects of vocational education on the economy and employment of youth in Botswana. The secondary objectives of the study were to:

- Examine the role of vocational education on the general economy in Botswana;
- Examine the role of vocational education on the employment of youth in Botswana; and
- Identify the challenges faced by vocational education in Botswana that affect the economy and employment of youth.

Descriptive statistics have been used in this study to summarise the quantitative data in order to analyse patterns that are not apparently visible in the raw data collected (Salkind, 2000) and to provide a clear, concise and visually informative representation of the results (Bob, 2018).

4.2 Presentation of results

A total of 61 respondents participated in this research. Altogether a 100% response rate was attained as all the 61 responses were received. Respondents were divided into five sub-groups that are vocational graduates, form 5 students, employers, Ministry of Education (Department of Skills Development) officials, and vocational education technical college officials as shown in Table 4.1 below.

Table 4.1: Response rate per sub-sample

Variable	Questionnaires issued (N)	Response (N)
Vocational Graduates	18	18
Form 5 Students	3	3
Employers (Private sector)	16	16
Ministry of Education (DSD)	10	10
Vocational education college officials	14	14
Total	61	61

Table 4.1 above shows the distribution of respondents who were used in this study. The five groups represented each major stakeholder within the entire vocational education sector in Botswana. There was a high response rate, and this may be attributed to respondents' interest in the study and the data collection methods employed were effective.

4.2.1 Demographic data presentation and analysis

This section focuses on the demographic data collected. In question 1, respondents were asked their gender. The gender of the respondents is shown in Figure 4.1 below.

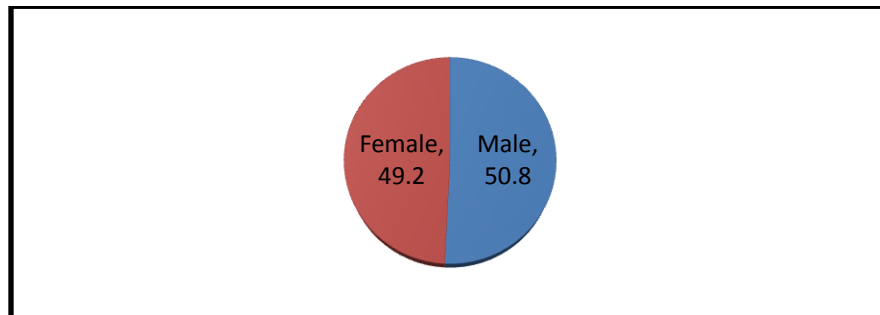


Figure 4.1: Gender distribution of respondents

Figure 4.1 above indicates that the gender distribution of the respondents was 50.8% male and 49.2% female. The general near-equality of gender is surprising given that the population structure in Botswana favours females than males. The reason for this may be due to the need by both genders to take advantage of vocational educational options as a means to employment. The

findings corroborate Choi (2016) study which reveals that vocational education appeals to both gender groups as a viable option for improving their potential in labour up-skilling and ensuring employability.

The respondents were asked about their age. The age of the respondents is shown in Figure 4.2 below.

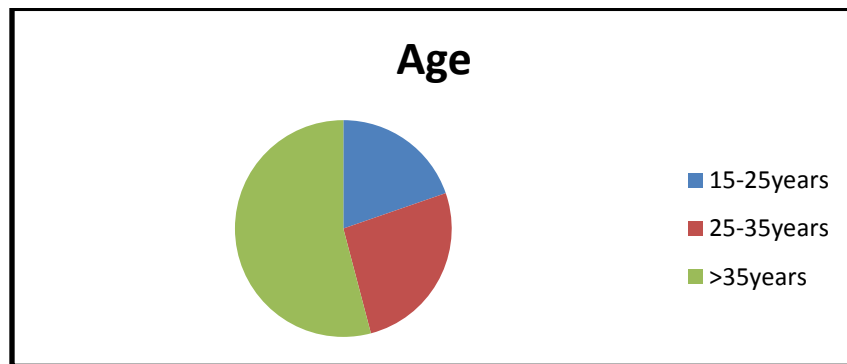


Figure 4.2: Age distribution of respondents

Figure 4.2 shows that the dominant age group for respondents was ‘above 35 years of age’ who constituted 54.1%, followed by respondents who were aged between 25 and 35 years who constituted 26.2% of the sample, and finally those aged between 15 to 25 years who made up 19.7% of the respondents. The dominance of the ‘above 35 years of age’ group is that the respondents were mature and having employed. The findings corroborate Dettmann and Günther (2009) study which reveals that mature aged persons are more concerned about studying further to enhance employment opportunities than the youth who are more interested in getting a job than studying further.

Respondents were also asked about their marital status. The marital status of the respondents is shown in Figure 4.3 below.

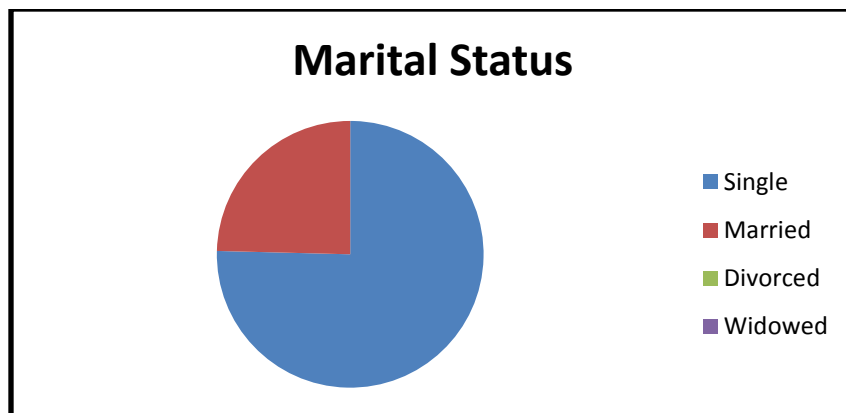


Figure 4.3: Respondents' marital status

Figure 4.3 above shows that most of the respondents (75.4%) were single, while those who were married were only 24.6%. The findings therefore reveal that marriage was not a priority among the youths as the need for economic empowerment and employment far outweighed social and domestic needs. The findings corroborate McIntosh (2009) who points towards a positive association between vocational qualifications and being in employment without any further commitments.

In question 5, respondents were asked their educational status. The educational level of the respondents is shown in Figure 4.4 below.

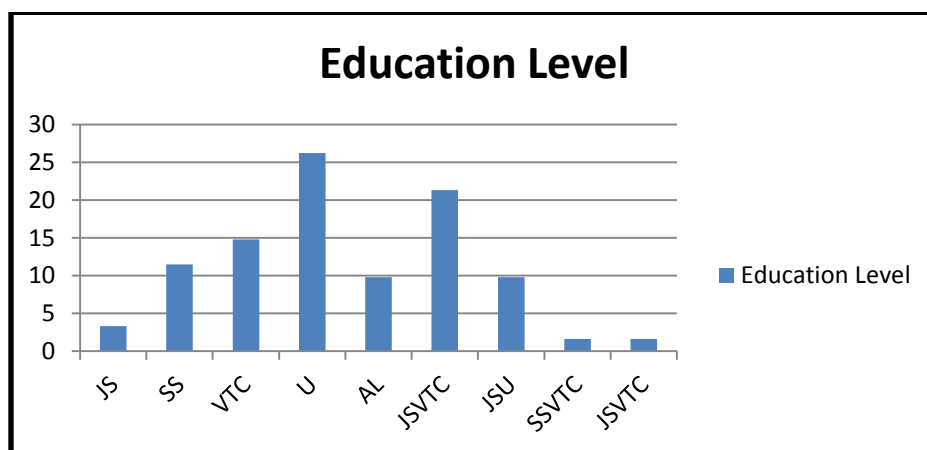


Figure 4.4: Educational level of respondents

Key:

JS= Junior School

SS= Senior School

VTC= Vocational Technical College

U= University

AL= All Levels i.e. Junior, Secondary, Tertiary, Vocational Technical College and University

JSVTC= Junior School & Vocational Technical College

JSU= Junior School & University

SSVTC= Senior School & Vocational Technical College

JSVTC= Junior School & Vocational Technical College

Figure 4.4 above shows that 26.2% of the respondents attended university, followed by 14.8% who attended vocational or training college. In comparison, 21.3% who graduated to vocational or training colleges from completing formal schooling (i.e. Junior and Senior School) while 9.8% of respondents proceeded to university from formal schooling. This contrasts with 9.8% of respondents who attended all levels of education. Only 3.3% of the respondents attended junior school while 11.5% attended senior school. Approximately two per cent attended senior school or junior school and vocational education levels while 21.3% had attended junior, senior and vocational education. The results therefore reveal that the number of students attending university exceeds those attending vocational technical colleges. This is in direct contrast to the situation in Botswana at independence through to the early 1980s. This demonstrates the preference of university learning over vocational education as confirmed by the research of Mupimpila (2009).

Respondents were also asked to indicate their employment status. The respondents' employment status is shown in Figure 4.5 below.

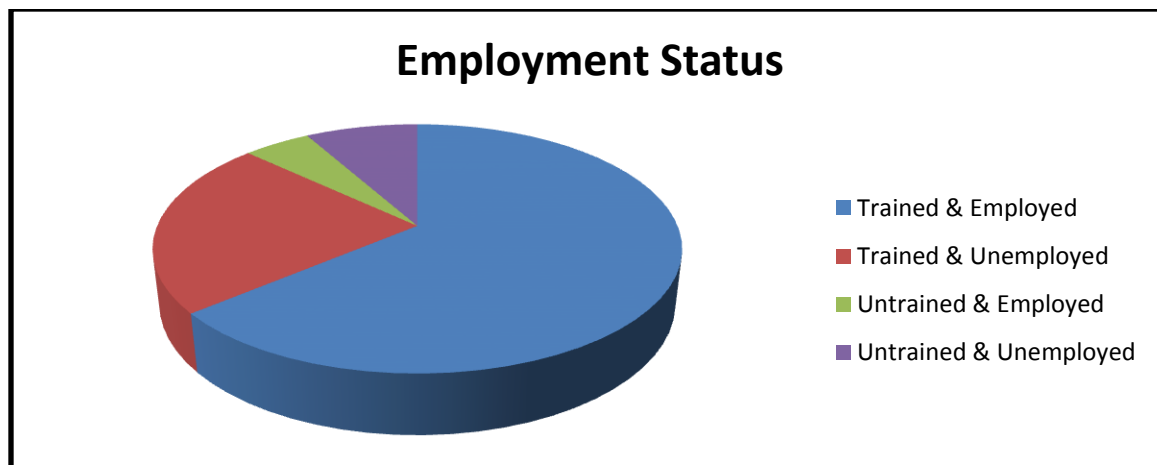


Figure 4.5: Respondents' employment status

Figure 4.5 illustrates the employment status of the respondents to the study. Approximately 64% of the respondents were trained and employed, while 23% of respondents were trained and unemployed. The results resonate with the findings of the Work Foundation (2012) which revealed that unemployment remains the biggest challenge for the youth today even though they have received formal vocational and technical training qualifications and or skills (the majority still cannot get a job).

4.2.2 The role of vocational education on the general economy

Section B of the questionnaire focused on the role of vocational education on the general economy. The constructs used in this section were nine statements that required respondents to indicate the extent to which they agreed or disagreed with the statement. These statements were constructs that measured two aspects, that is, the role of vocational education on the general economy and the employment of youth in Botswana. The results are indicated in Table 4.2 below.

Table 4.2: Role of vocational education on the general economy in Botswana

Code	Role of vocational education on economy	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree	X	S D
IIJP	Vocational education improves individual job performance & productivity of firms	16.4%	62.3 %	6.6%	13.1%	1.6%	3.8	0.9
ECFC	Vocational education is an excellent catalyst for creating employment opportunities	18.0%	60.7 %	14.8%	4.9%	1.6%	3.9	0.8
RIPR	Vocational education results in poverty reduction, food security and social cohesion in youths	13.1%	44.3 %	14.8%	21.3%	6.6%	3.4	1.2
PEYB	Vocational education has positive effects on the youths in Botswana	21.3%	57.4 %	8.2%	13.1%	0%	3.9	0.9
WTP R	Vocational education is a waste of tax payers' resources	6.6%	16.4 %	26.2%	29.5%	21.3%	2.6	1.2
ILFU	Vocational education increases labour force up skilling and productivity	16.4%	52.5 %	11.5%	18.0%	1.6%	3.6	1.0
PWE S	Vocational education results in positive wage effects to skilled workers and negative long run wage increases	16.4%	23.0 %	31.1%	24.6%	4.9%	3.2	1.1
GIDG	Unemployed vocational education graduates increase dependence on government social programs	26.2%	39.3 %	13.1%	18.0%	3.3%	3.7	1.2
PEGI	Vocational education promotes economic growth through industrialization/production	23.0%	57.4 %	9.8%	4.9%	4.9%	3.9	0.9

Key:

IIJP= Vocational education improves individual job performance and productivity of firms

ECFC= Vocational education is an excellent catalyst for creating employment opportunities

RIPR= Vocational education results in poverty reduction, food security and social cohesion in youths

PEYB= Vocational education has positive effects on the youths in Botswana

WTPR= Vocational education is a waste of tax payers' resources

ILFU= Vocational education increases labour force up skilling and productivity

PWES= Vocational education results in positive wage effects to skilled workers and negative long run wage increases

GIDG= Unemployed vocational education graduates increase dependence on government social programs

PEGI= Vocational education promotes economic growth through industrialization/production

Table 4.2 shows the results of the respondents concerning the role of vocational education on the general economy as measured by the nine constructs, that is: IIJP, ECFC, RIPR, PEYB, WTPR, ILFU; PWES, GIDG, and PEGI.

According to Table 4.2, 78.7% of the respondents agreed that vocational education improves individual job performance and productivity of firms, while 21.4% disagreed. This demonstrates that the majority of the respondents believed that vocational education improves job efficiency and firm output which directly contribute towards economic growth. However, the role is not effectively being discharged as a fifth of the respondents disagreed. This reveals that there is also need for auditing the aims and policy intents of vocational education in Botswana in order to make them effective.

Table 4.2 shows that 78.7% of respondents agree that Vocational education is an excellent catalyst for creating employment opportunities while 21.4% disagreed. While vocational education seems to cater for the majority in creating viable employment opportunities, it left the minority out of the job market as a result.

Table 4.2 shows that 57.4% of the respondents agreed that vocational education results in poverty reduction, food security and social cohesion in youths while 42.6% disagree. The fact that just over half of the respondents concurred suggests that fewer people are actually improving their lives with vocational education while about two-fifths are unable to escape their poverty,

food insecurity and social disintegration. The effect of vocational education on poverty reduction, food security and social cohesion is of an average standard.

Table 4.2 also shows that 78.7% agreed that vocational education has positive effects on the youth in Botswana, while 21.3% disagreed. Vocational education, according to the respondents, has marked positive effects on the majority of the youth in Botswana. This is indicative of a positive effect on the economy for what is good for the youth is indeed good for the economy. The minority who were mostly trained and unemployed remained negatively affected and positive change is required.

Table 4.2 shows that 77% of the respondents disagreed with the statement that vocational education was a waste of tax payers' resources while 23% were in agreement. The results demonstrate that while the majority acknowledged the vital role played by vocational education on the economy of Botswana, there was a minority group which perceived otherwise.

Table 4.2 shows that 68.9% of respondents agreed that vocational education increases labour force up-skilling and productivity, while 31.2% disagreed. The results epitomised the prevailing state of vocational education in Botswana that it increased labour force up-skilling and productivity which in turn contributes towards positive productive output which directly affects economic growth. However, a third of the respondents disagreed with this view.

Table 4.2 further reveals that 39.4% of the respondents agreed that vocational education results in positive effects on the wages of skilled workers, while 60.6% were in disagreement or unsure as to whether in reality such positive wage effects arose. This finding is evidence that indeed there is a problem of vocational education's efficacy in translating positive net benefits to its recipients whether in getting jobs or in becoming economically empowered as a result of the jobs obtained.

Table 4.2 further shows that 65.5% of the respondents agreed that unemployed vocational education graduates increased dependence on government social programmes. This finding explains that not all who are trained will get employed and those who do not get employed or absorbed by the system become a burden on the government fiscus as they drawdown on the limited resources through the government social programmes.

Table 4.2 reveals insightful results as 80.4% of the respondents agreed that vocational education promotes economic growth through industrialisation/production while only 19.6% disagreed. A majority of respondents appeared to understand the link between vocational education and economic growth. Vocational education has an important role to play in this process of the preparation of students and graduates through the acquisition of scientific and practical knowledge and skills to match the structural changes in Botswana's economy and employment both at the time the study was carried out and in the future.

Table 4.2 also shows the standard deviation for the role of vocational education on the general economy constructs that is: IIJP, ECFC, PEYB and PEGI which reveal a small standard deviation (SD range=0.8 to 0.9) which means that the values in the statistical data set are close to the mean ($\bar{x}$ =3.8 to 3.9) of the data set on average.

This is in contrast to the role of vocational education on the general economy sub-constructs that is RIPR, WTPR, ILFU, PWES and GIDG who have greater variability (SD range = 1.0 - 1.2) around a lower mean range of between 2.6 – 3.7. It appears that there is an inverted relationship between the mean and the standard deviation in which a lower mean is associated with a higher standard deviation and the converse is also true.

The role of vocational education on the economy in Botswana based on the data reveals an average effect and this is in contrast to the situation that existed at independence where the role of vocational education was highly effective due to the alignment between the training-employment and production because no matter who wanted to enroll into vocational education, they were quickly absorbed into the system and it worked for both the country and the individual and for the community. However, today it appears that more respondents are for the scrapping of the vocational educational system, while others view it as not resulting in positive wage effects on skilled workers. Some respondents believed that the inherent gender disparities and the high unemployment results directly from structural inadequacies inherent within the vocational education system.

The results of the questionnaire reflect that the role of vocational education on the general economy was an important one, playing a vital role in the supply of labour as a critical input into the generation of economic growth through individual performance, firm productivity,

technological diffusion, and skills usage. There is also a relative inadequacy of vocational education to spearhead economic growth and development as it once did since 1966-1982.

A key reason as to why vocational education was not contributing to the national economy and to the individuals concerned as much as it should have done lied primarily in the neglect of the few people who attained vocational education qualifications but remained unemployed. Furthermore, there was a view that vocational education was declining gradually as revealed by the proportions of those who believed that it was no longer playing an important role. Vocational education serves a pivotal role in the future of Botswana. The extent to which it has fulfilled those particular roles as intended has been revealed by the results of the study and also the extent to which this particular role has impacted the generality of the youth.

4.2.3 The role of vocational education on the employment of youth in Botswana

This section presents the results on the role of vocational education on the employment of youth in Botswana. Table 4.3 shows the data distribution of the sub constructs measuring the role of vocational education on the employment of youth in Botswana.

Table 4.3: Role of vocational education on the employment of youth in Botswana

Questionnaire item (code construct)	Code	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree	X	SD
Vocational education delivers practical skills to youths to find employment or launch their own business	PSTY	29.5%	54.1%	4.9%	9.8%	1.6%	4.0	0.9
The current vocational education system needs to be scrapped and re-developed	SNSR	39.3%	45.9%	8.2%	4.9%	1.6%	4.1	0.9
Vocational education is a tool that can still be used to solve high youth unemployment	TSHY	32.8%	45.9%	8.2%	13.1%	0%	4.0	1.0
Vocational training improves labour market outcomes	ILMO	23.0%	39.3%	24.6%	11.5%	1.6%	3.7	1.0
Unemployment rates among the youth are much higher because vocational education is not as effective as in the past	UYHV	19.7%	36.1%	16.4%	23.0%	4.9%	3.4	1.2
Vocational education disadvantages youth males in employment than female colleagues due to historical factors	DYME	8.2%	16.4%	16.4%	42.6%	16.4%	2.6	1.2

Key:

PSTY= “Vocational education delivers practical skills to youths to find employment or launch their own business”/

SNSR= The current vocational education system needs to be scrapped and re-developed

TSHY= Vocational education is a tool that can still be used to solve high youth unemployment

ILMO= Vocational training improves labour market outcomes

UYHV= Unemployment rates among the youth are much higher because vocational education is not as effective as in the past

DYME= Vocational education disadvantages youth males in employment than female colleagues due to historical factors

Table 4.3 shows six measures of the role of vocational education on the employment of youth in Botswana. According to the table, 83.6% of the respondents agreed that vocational education delivered practical skills to the youth to find employment or launch their own businesses, while 16.4% disagreed. The high number of respondents in agreement reflects the strong emphasis of vocational education on up-skilling youth to become employable in government service, the private sector or self-employment through entrepreneurship.

Furthermore, 85.2% of the respondents agreed that the vocational education system prevailing at the time of the study needed to be scrapped and re-developed while 14.7% disagreed. The results indicate dissatisfaction with the vocational education system existing at the time of the study. Seventy-nine per cent of the respondents agreed that vocational education was a tool that could be used to solve youth unemployment, while 21.3% disagreed with the statement. Table 4.3 shows that 62.3% of the respondents agreed that vocational training improves labour market outcomes while 37.7% disagreed. The high number of dissenters revealed a strong view that there was a need for better labour market outcomes as significant numbers of the youth who received vocational education were still unemployed.

Table 4.3 shows that 55.8% of the respondents agreed that unemployment rate among the youth was high because vocational education was not as effective as in the past, while a significant 44.3% disagreed. The high rate of discontent is actually indicative of a deeper reality that proves that there was a problem with youth unemployment which was still high as a result of vocational education's inability address social and economic problems faced by the youth and the nation.

According to Table 4.3, there were 24.6% of the respondents who agreed that vocational education disadvantaged the male youth in employment more than their female colleagues due to historical factors, while 75.4% disagreed or were unsure. In reality, it would appear that male youth were advantaged than female colleagues due to historical reasons.

Table 4.3 also shows the standard deviation for the role of vocational education on the employment of youth in Botswana sub constructs, that is, PSTY, SNSR and TSHY which reveal a small standard deviation (SD range=0.9 to 1.0) which means that the values in the statistical data set are close to the mean ($\bar{x}$ =4.0 to 4.1) of the data set, on average. This is in

contrast to the role of vocational education on the general economy sub-constructs that is ILMO, UYHV and DYME which have greater variability (SD range = 1.0 -1.2) around a lower mean range of between 2.6 to 3.7. It appears that there is an inverted relationship between the mean and the standard deviation in which a lower mean is associated with a higher standard deviation and the converse is also true.

Based on the results of the study, the role that vocational education was playing on the employment of youth was strong although there was a reasonable variability in the responses which was indicative of the reality of rising youth unemployment and a weakening of the role of vocational education in eradicating unemployment through matching the demand and supply factors in the labour market. This is consistent with Martin, Villeneuve-Smith, Marshall, and McKenzie (2008) study which explains why youth unemployment is at an all-time high against the backdrop of a once fully functional and proficient vocational education system.

Vocational education is the engine for youth employment, economic performance and productivity, labour productivity, and industrialisation. These findings are consistent with Moore (2004), Rommes, Faulkner, and Van Slooten (2005), Butler and Ferrier (2006), Kraus, (2006), Tikkanen, (2009), and Gvaramadze (2010) who concur that vocational education is a human capital development strategy that empowers the graduates with employment opportunity and achievement.

Table 4.4 below shows the correlation matrix which shows the relationship between the sub-constructs (PSTY, IJJP, ECFC, RIPR, TSHY, SNSR, PEYB, WTPR, ILFU, PWES, ILMO, GIDG, UYHV, DYME, PEGI) of the role of vocational education on the general economy and employment of youth in Botswana represented in the same sequence of rows and columns.

Table 4.4: Correlation of roles of vocational education on the general economy and employment in Botswana

Variables	PSTY	IIJP	ECFC	RIPR	TSHY	SNSR	PEYB	WTPR	ILFU	PWES	ILMO	GIDG	UYHV	DYME	PEGI
PSTY	1	.546**	.129	.137	.451**	-.254*	.117	-.251	.380**	-.092	.314*	.115	-.177	-.074	-.018
IIJP	.546**	1	.579**	.397**	.674**	-.196	.322*	-.203	.550**	.043	.642**	.183	-.157	-.023	.154
ECFC	.129	.579**	1	.450**	.415**	-.155	.317*	-.188	.390**	.134	.566**	.182	-.120	-.171	.314*
RIPR	.137	.397**	.450**	1	.375**	.022	.605**	.029	.325*	.547**	.423**	.295*	-.005	.041	.066
TSHY	.451**	.674**	.415**	.375**	1	-.130	.376**	-.294*	.498**	.093	.471**	.181	-.181	-.078	.085
SNSR	-.254*	-.196	-.155	.022	-.130	1	.027	.145	-.190	.128	-.185	.090	.214	-.074	.116
PEYB	.117	.322*	.317*	.605**	.376**	.027	1	.025	.165	.432**	.305*	.214	.068	.009	.020
WTPR	-.251	-.203	-.188	.029	-.294*	.145	.025	1	-.253*	.412**	-.288*	-.078	.331**	.706**	.171
ILFU	.380**	.550**	.390**	.325*	.498**	-.190	.165	-.253*	1	.096	.481**	.182	-.133	-.019	-.075
PWES	-.092	.043	.134	.547**	.093	.128	.432**	.412**	.096	1	.143	.096	.190	.375**	.096
ILMO	.314*	.642**	.566**	.423**	.471**	-.185	.305*	-.288*	.481**	.143	1	.073	-.060	-.177	.117
GIDG	.115	.183	.182	.295*	.181	.090	.214	-.078	.182	.096	.073	1	.270*	.143	-.147
UYHV	-.177	-.157	-.120	-.005	-.181	.214	.068	.331**	-.133	.190	-.060	.270*	1	.354**	-.128
DYME	-.074	-.023	-.171	.041	-.078	-.074	.009	.706**	-.019	.375**	-.177	.143	.354**	1	.157
PEGI	-.018	.154	.314*	.066	.085	.116	.020	.171	-.075	.096	.117	-.147	-.128	.157	1

Key:

PSTY= “Vocational education delivers practical skills to youths to find employment or launch their own business”/

IIJP= “Vocational education improves individual job performance & productivity of firms”

ECFC= Vocational education is an excellent catalyst for creating employment opportunities

RIPR= Vocational education results in poverty reduction, food security and social cohesion in youths

TSHY= Vocational education is a tool that can still be used to solve high youth unemployment

SNSR= The current vocational education system needs to be scrapped and re-developed

PEYB= Vocational education has positive effects on the youths in Botswana

WTPR= Vocational education is a waste of tax payers’ resources

ILFU= Vocational education increases labour force up skilling and productivity

PWES= Vocational education results in positive wage effects to skilled workers and negative long run wage increases

ILMO= Vocational training improves labour market outcomes

GIDG= Unemployed vocational education graduates increase dependence on government social programs

UYHV= Unemployment rates among the youth are much higher because vocational education is not as effective as in the past

According to the results in Table 4.4 above, the majority (11/15 or 73%) of the sub constructs measuring the role of vocational education have correlations that are significant ($p < 0.05$) and positive. Due to the positive correlations it has been established that vocational education improves individual job performance and productivity of firms (IIJP), it delivers practical skills to youths to find employment or launch their own business through vocational education. Table 4.4 shows that vocational education acts as a catalyst in creating employment opportunities for the youth (ECFC) ($r=0.579$) and as a tool for reducing high youth unemployment by matching employers and graduates (TSHY) ($r=0.674$).

Table 4.4 shows how vocational education increases labour force up skilling and productivity (ILFU) ($r=0.550$). There is fairly strong evidence to show that vocational education results in poverty reduction, food security and the social cohesion in the youth in Botswana indicates a moderate uphill correlation with the ability of vocational education in being an excellent catalyst for creating employment opportunities (ECFC)($r=0.450$), the positive effects of vocational education on the youths in Botswana (PEYB)($r=0.605$), the positive wage effects and negative long run increases in wages to skilled youth workers currently as a result of vocational education (PWES)($r=0.547$) and improved labour market outcomes also as a result of vocational education.

According to Table 4.4 role sub construct RIPR was found to be moderately correlated to E ($r=0.450$), PEYB ($r=0.605$), PWES ($r=0.547$) and ILMO ($r=0.423$). According to Table 4.4 TSHY was found to be fairly correlated to PSTY ($r=0.451$), IIJP ($r=0.674$), ECFC ($r=0.415$), ILFU ($r=0.498$) and ILMO ($r=0.471$). These results confirms that vocational education is a viable tool that can still be used to solve high youth unemployment through employment creation (ECFC) ($r=0.415$), and delivering practical skills to youths to find employment or launch their own business (PSTY) ($r=0.451$). Vocational education is seen to improve employee performance while on the job, the productivity of the business (IIJP) ($r=0.674$), the skills of the labour force (ILFU) ($r=0.498$) and in improvement how the labour market responds (ILMO) ($r=0.471$).

In other words, vocational education does solve youth unemployment to an extent because of its ability to affect quality of skilled labour employability, firm productivity and labour market outcomes. Table 4.4 demonstrates that there is fairly strong evidence to show that vocational education plays a key role in several areas of the economy and in the employment of youth in Botswana. However, four out of fifteen (4/15 or 27%) of the sub constructs measuring the role of vocational education (SNSR, GIDG, UYHV, PEGI) are not correlated to each other and have an insignificant effect on the role of vocational education. This finding is very interesting because it demonstrates a lack of effectiveness which is also impacting upon vocational education in Botswana.

Table 4.5 Summary of Interco relations between role sub constructs

Sub Constructs	Correlated Variables	Number of correlated variables
PSTY	IIJP, TSHY	2
IIJP	PSTY, ECFC, TSHY, ILFU	4
ECFC	IIJP, RIPR, TSHY	3
RIPR	ECFC, PEYB, PWES, ILMO	4
TSHY	PSTY, IIJP, ECFC, ILFU, ILMO	5
PEYB	RIPR	1
WTPR	DYME	1
ILFU	IIJP, ILMO	2
PWES	RIPR, PEYB, WTPR	3
ILMO	IIJP, ECFC, TSHY, ILFU	4
DYME	WTPR	1
Total		30

Table 4.5 shows the relationship between the variables. Eleven variables are correlated with other sub constructs to a lesser (1) or greater extent (5). In particular, three significant relationships are identified between IIJP, RIPR and TSHY which signify a moderate uphill (positive) relationship meaning that the three key variables move into the same direction. A higher value of IIJP, RIPR and TSHY corresponds to higher values of vocational education's positive catalysis and labour market effects, and vice versa which means that if one variable increases (indicator), so too does the other. These are sub-roles that are perceived to be functional and effective within the vocational education environment. The existence of moderate correlation does not fully explain the cause-and-effect relationship that exists between the independent variable and the dependent variables. In other words, all identified sub constructs or indicators of the sub roles of vocational education on the general economy and employment in Botswana are interrelated rather cohesively. The variables are continuous scale which are normally distributed and have a linear inter-relationship.

4.2.4 The challenges of vocational education in Botswana

In Section C, the questionnaire focused on the challenges of vocational education. Figure 4.6 below shows a summary of the findings.

Table 4.6: The challenges of vocational education in Botswana

Statement	Code	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree	X	SD
The vocational education institutions are under subscribed.	VIUS	16.4%	44.3%	23.0%	11.5%	4.9%	3.6	1.1
Vocational education institutions have poor quality teachers	PQTC	19.7%	29.5%	14.8%	27.9%	8.1%	3.3	1.3
At vocational education institutions there is poor quality of training of VET graduates	PQTV	16.4%	32.8%	16.4%	31.1%	3.3%	3.3	1.2
There are poor quality curriculum outcomes	PQCO	24.6%	41.0%	16.4%	14.8%	3.3%	4.5	0.9
There is a lack of prioritisation of Vocational needs	LPVN	21.3%	54.1%	13.1%	9.8%	1.6%	3.8	0.9
The quality of vocational education is poor	QVEP	24.6%	32.8%	14.8%	24.6%	3.3%	3.5	1.2
At vocational education institutions there is a lack of adequate infrastructure facilities	LAIF	31.1%	50.8%	13.1%	4.9%	0%	4.1	0.8
There is inadequate funding of Vocational Education in Botswana	IFVE	32.8%	42.6%	21.3%	3.3%	0%	4.1	0.8
There is a slow vocational education policy reform in Botswana	SVEP	27.9%	55.7%	9.8%	6.6%	0%	4.1	0.8
In Botswana employers are unsatisfied with vocational education graduates	EUVT	23.0%	27.9%	26.2%	23.0%	0%	3.5	1.1
There are several policy coordination & implementation challenges	SPCI	23.0%	49.2%	19.7%	8.2%	0%	3.9	0.9
In Botswana vocational education is currently irrelevant	VECI	19.7%	18.0%	14.8%	37.7%	9.8%	3.0	1.3
There is poor systematic professional training & development of instructors and poor manpower planning	PSPT	29.5%	27.9%	21.3%	18.0%	3.3%	3.6	1.2
Vocational education is still perceived as inferior	VEPI	27.9%	42.6%	14.8%	13.1%	1.6%	3.8	1.0
There is poor monitoring policy of vocational education	PMPV	26.2%	39.3%	19.7%	14.8%	0%	3.8	1.0
There is Ineffective industrial placement by employers	IIPO	29.5%	41.0%	19.7%	9.8%	0%	3.9	0.9
There is Inadequate previous general educational outcomes	IPGE	23.0%	39.3%	23.0%	13.1%	1.6%	3.7	1.0
There is a low uptake of VET graduates by VET institutions	LUVG	24.6%	44.3%	16.4%	14.8%	0%	3.8	1.0
There is a lack of industry & economic diversification in Botswana's economy	LIED	29.5%	44.3%	13.1%	11.5%	1.6%	3.9	1.0
There is a generally poor learning-doing culture in Botswana	PLDC	32.8%	27.9%	14.8%	23.0%	1.6%	3.7	1.2

Key:

VIUS-The vocational education institutions are under subscribed.

PQTC- vocational education institutions have poor quality teachers

PQTV- At vocational education institutions there is poor quality of training of VET graduates

PQCO-There are poor quality curriculum outcomes

LPVN-There is a lack of prioritisation of Vocational needs

QVEP-The quality of vocational education is poor

LAIF-Lack of adequate infrastructure facilities

IFVE-Inadequate funding of Vocational Education

SVEP-Slow vocational education policy reform

EUVT-Employers are unsatisfied with vocational education graduates

SPCI-There are several policy coordination & implementation challenges

VECI-Vocational education is currently irrelevant

PSPT-There is poor systematic professional training & development of instructors and poor manpower planning

VEPI-Vocational education is still perceived as inferior

PMPV-There is poor monitoring of vocational education

IIPO- There is Ineffective industrial placement by employers

IPGE- There is inadequate previous general educational outcomes

LUVG-There is a low uptake of VET graduates by VET institutions

LIED-There is a lack of industry & economic diversification in Botswana's economy

PLDC-There is a generally poor learning-doing culture in Botswana

Table 4.6 shows the strength of the nineteen (19) challenges faced in vocational education on the general economy and employment of youth in Botswana. The table shows that 60.7% of the respondents agreed that vocational education institutions were under-subscribed, while 39.3% disagreed. This is due to the fact that university education is preferred to vocational education and there is a perception that the latter is inferior and is associated with negative outcomes than positive by parents and students. This is confirmed by Mumpimpila (2009) and Kerton (2007) who identified the changing perceptions of students, parents and employers concerning vocational education to university education.

Table 4.6 shows that 49.2% of the respondents agreed that at vocational education institutions, there were poor quality teachers while 50.8% disagreed. This explains why the perception that vocational education is inferior because the quality of the educators is

perceived to be of a poor quality and hence the education also cannot therefore be of higher standard than university education.

Table 4.6 also shows that 49.2% of the respondents agreed that at vocational education institutions, there was poor quality of training of VET graduates while 50.8% disagreed. This indicates the problem of vocational education which is seen to be inferior, ineffective, defective, incomplete and inadequate in giving graduates a fair chance to excel and get employed in a high paying job. This means that employers would not prefer vocational education graduates thus reducing their chances of getting employment hence determining the employment of youth and a reduction of potential contribution to the general economy.

Table 4.6 shows that 65.6% of the respondents agreed that in vocational education institutions, there were poor quality curriculum outcomes while 34.4% disagreed. This indicates that the quality of vocational education was considered to be unacceptable thereby reducing the capacity of vocational education to contribute meaningfully to the economic development of the country.

Table 4.6 indicates that 75.4% of the respondents agreed that there was a lack of prioritisation of the needs of vocational education institutions when compared with universities and other colleges, while 24.6% disagreed. This may have led unacceptable levels of the quality of education offered by these institutions compared to universities. This might have contributed to a policy shift to university education to the detriment of vocational education.

Table 4.6 shows that 57.4% of the respondents agreed that the quality of vocational education was poor, while 42.6% disagreed. This is yet another challenge that requires urgent attention as the assurance that skilled vocational graduates will be able to perform their jobs to the satisfaction of their employers is negated by poor quality education which can affect the outcome.

Table 4.6 shows that 81.9% of the respondents agreed that there was lack of adequate infrastructure at vocational education institutions, while 18.1% disagreed. Lack of adequate infrastructure in vocational education institutions may have resulted in these institutions failing to effectively execute their mandate of offering quality education to the youths to produce competent professionals.

Table 4.6 shows that 75.4% of the respondents agreed that there was inadequate funding of vocational education in Botswana, while 24.6% disagreed. There is a general belief that government is not allocating enough funds to vocational education institutions and this is why they are unable to provide quality education to learners. Therefore, the lack of finance makes it difficult to improve the quality of vocational educational programmes.

Table 4.6 shows that 83.6% of the respondents agreed that there was slow vocational education policy reform in Botswana, while 16.4% disagreed. The pace of reform in government policy was seen as a stumbling block to the modernisation and reform of the vocational education sector.

Table 4.6 indicates that 72.2% of the respondents agreed that there were several policy coordination and implementation challenges in Botswana, while 27.8% disagreed. The results point towards a slow process towards policy reform and now that also is exacerbated by poor implementation all of which further limit the effectiveness of vocational education.

Table 4.6 shows that 57.4% of the respondents agreed that there was a lack of systematic, professional training and development of instructors and poor manpower planning at vocational education institutions, while 42.6% disagreed. Furthermore, Table 4.6 also reveals that 70.5% of the respondents agreed that vocational education was still perceived as inferior while 29.5% disagreed.

More so, Table 4.6 shows that 65.5% of the respondents agreed that there was poor monitoring of vocational education, while 34.5% disagreed. In addition, Table 4.6 shows that 70.5% of respondents agreed that in vocational education institutions, there was ineffective industrial placement while 29.5% disagreed. Table 4.6 also shows that 62.3% of the respondents agreed that there were inadequate previous general educational outcomes while 37.7% disagreed.

Table 4.6 shows that 68.9% of the respondents agreed that there was low uptake of VET graduates by VET institutions while 31.1% disagreed. Table 4.6 shows that 73.8% of the respondents agreed that there was a lack of industry and economic diversification in Botswana while 26.2% disagreed. In addition, Table 4.6 shows that 60.7% of the respondents agreed that there was a generally poor learning-doing culture while 39.3% disagreed.

There are two groups of challenges that can be identified based on the results that are major and minor challenges faced in vocational education on the general economy and employment of youth in Botswana. The major challenges which lie between a mean of between 3.8 to 4.5 with a standard deviation ranging with variability about the mean by between 0.8 to 1.0 and these include the following sub-constructs that is PQCO; LPVN; LAIF, IFVE, SVEP; SPCI; VEPI; PMPV, IIPO; IPGE; LUUG and LIED. These findings are consistent with (Heyneman (2003); McGrath (2009) and Rieckmann (2012). Polelo (2007) explains that vocational education in Botswana is plagued by problems of the past and until those are eradicated, it will not be effective.

In contrast, there were also minor challenges with means lying between 3.0 to 3.7, with a standard deviation ranging, with small variability about the mean, by between 1.1 to 1.2 and these include the following sub constructs: VIUS; PQTC; PQTV; QVEP; EUVT; VECI; PSPT and PLDC. The minor challenges are those in which there was a low degree of dissenters who were in agreement concerning this. The findings corroborate with a number of studies that assessed the challenges faced by the Botswana vocational education system such as Okoye and Arimonu (2016), Eze (2013), Nworlu- Elechi (2013), and Ojimba (2012). It can be seen from the results that vocational education in Botswana is faced with many deep-rooted challenges thus affecting its potential to provide young Batswana with quality education and skills, hence employment, with negative connotations on the country's economy in general.

4.2.5 What can be done to improve vocational education in Botswana

In Section D, respondents were asked to state the extent to which they agreed or disagreed with the given statements, based on a '5' point Likert scale, on ways in which vocational education in Botswana could be improved. Table 4.7 below shows the results on possible ways of improving vocational education in Botswana.

Table 4.7: Improving vocational education in Botswana

Statement	Code	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree	X	SD
There is a need to improve link between vocational curriculum and local labour market	ILVC	59.0%	31.1%	6.6%	1.6%	1.6%	4.5	0.8
Vocational and academic education should be merged	VAAE	42.6%	34.4%	18.0%	3.3%	1.6%	4.1	0.9
Government and private sector must make new investments in infrastructure	GPSM	47.5%	44.3%	6.6%	1.6%	0%	4.4	0.7
There is a need to create experience pathways for lecturers and students to improve	CEPL	47.5%	47.5%	3.3%	1.6%	0%	4.4	0.7
Enough theoretical knowledge must be provided	TLMP	39.3%	42.6%	9.8%	8.2%	0%	4.1	0.9
There is a need to improve funding and financial support	IFFS	52.5%	41.0%	6.6%	0%	0%	4.5	0.6
There is a need to improve employment for vocational education	IEVE	50.8%	39.3%	9.8%	0%	0%	4.4	0.7
There is a need to improve vocational education courses	IVEP	60.7%	32.8%	6.6%	0%	0%	4.5	0.6
There is a need to improve vocational education teaching methodologies	IVET	54.1%	39.3%	6.6%	0%	0%	4.5	0.6
There is a need to improve organisational commitment and trainee engagement	IOCT	55.7%	37.7%	3.3%	3.3%	0%	4.5	0.7
There is a need to organize more training courses for teachers	OMTP	63.9%	29.5%	6.6%	0%	0%	4.6	0.6

Table 4.7 shows that 90.1% of the respondents agreed that there was a need to improve link between vocational curriculum and local labour market demands, while 9.9% disagreed. Furthermore, Table 4.7 shows that 77% of the respondents agreed that vocational and academic education should be merged while 23% disagreed.

Table 4.7 shows that 91.8% of the respondents agreed that the government and the private sector must make new investments in infrastructure while 8.2% disagreed. More so, Table 4.7 also shows that 78.7% agreed that vocational education had positive effects on the youth in Botswana while 21.3% disagreed.

Table 4.7 shows that 95% of the respondents agreed that there was need to create experience pathways for lecturers and students to improve while 5% disagreed. Table 4.7 shows that 81.9% of the respondents agreed with the statement that enough theoretical knowledge must be provided while 18.1% disagreed. Table 4.7 shows that 90.1% of respondents agreed with the statement that there was need to improve funding and financial support while 9.9% disagreed.

Table 4.7 shows that 90.1% of respondents agreed that there was need to improve employment for vocational education while 9.9% disagreed. Moreover, Table 4.7 further reveals that 93.5% of the respondents agreed that there was need to improve vocational education courses while 6.55 disagreed. Table 4.2 shows that 93.4% of respondents agreed that there was need to improve vocational education teaching methodologies while 6.6% disagreed.

Table 4.7 shows that 93.4% of the respondents agreed that there was need to improve organisational commitment and trainee engagement while 6.6% disagreed. Table 4.2 shows that 93.4% of the respondents agreed that there was need to organise more training courses for teachers while 6.6% disagreed.

In a nutshell, virtually all the respondents were, generally, in agreement that the following measures could improve the effectiveness of vocational education in Botswana:

- Improving the link between vocational curriculum and local labour market needs
- Merging vocational and academic education
- Increasing public investment in infrastructure
- Establishment of experience pathways for lecturers and students
- Improving funding and financial support
- Improving vocational education teaching methodologies

The study sought to determine whether there existed an approximate inter-relationship between the research objectives or constructs, that is, the role of vocational education on the economy, the role of vocational education on the employment of youth in Botswana, and the challenges faced by vocational education. The results are shown in Table 4.8 below, indicating the inter-correlation between the research questions and questionnaire response variables.

Table 4.8: Regression linear model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	Please state your current employment status = Trained & employed (Selected)			
1: Role on economy	0.626	0.391	-0.006	1.80926
2: Role on employment	0.982	0.964	0.549	1.21208
3: VET Challenges	0.998	0.996	0.846	.70711

Table 4.8 above demonstrates that there are significant approximate relationships between the effects of vocational education, the challenges of vocational education and the recommendations governing vocational education. The r value for effects of vocational education is 0.626 which is reflective of a moderate correlation with the two deterministic variables of challenges of vocational education ($r = 0.982$) which reflect near perfect relationship with the ways in which vocational education can be improved.

Based on this study and its findings, it can be seen that there is a positive relationship between vocational education and economic growth. Firstly, economic growth is the outcome of the increase in gross domestic product (GDP) per year as a result of the production of goods and services which is determined through the mix of labour and capital inputs. The quality and experience of labour as supplied by universities and vocational training colleges determines the productivity, efficiency, usability and adaptability of labour to particular tasks. Therefore, by this reasoning, economic growth is in part a fundamental creation of capital as well as that of labour, *ceteris paribus*. These findings are consistent with various studies such as Dike (2009), Bob (2018), and Mupimpila and Nayaran (2009) that recognise the central role played by vocational education in country's development through the establishment of efficient human capital.

Vocational education develops the stock of alternative human capital for the economy's various activities. It also enhances the employability, productivity and performance of vocational graduates. It is true that vocational education has become part and parcel of Botswana's skills development strategy for 53 years and it is the tone and emphasis of vocational education that has to change for the future by improving the proficiency and effectiveness of the educational, growth and employment strategy. There is a need for the government to give vocational education the attention it deserves so as to improve economic prospects, employment aspects and thereby improve the social contract to improve the standard of living of the recipients of vocational education in particular and citizens in general.

Arguments have been crafted to market vocational education as a sectoral solution policy and this is wrong because vocational education, just like university education, is not a one-size-fit-all but if complemented with proper structures of accountability, resources and authority, it can significantly contribute towards the country's economy growth.

Mupimpila (2009), Tarique and Schuler (2010) and Kerton (2007) identified a current mismatch between labour supply and labour market demand and this in part does explain the existence of unemployment. However, the complete explanation is that Botswana is producing vocational graduates in obsolete areas and this results in loss in value build-ups throughout the value delivery system. In the end, employers can choose better quality workers with university qualifications for more remuneration versus a less qualified vocational graduate. Youth unemployment is being caused by lack of integration between the needs of the labour market for specific labour with specific skills at specific times in the business-economic cycles which are influenced by government policy, action and the supply of particular labour. It is no longer just about producing citizens with employable skills, but there is need for citizens who can provide all the skills required now and, in the future, to channel better economic growth and employment based on a predictable development trajectory. What was a supply-driven approach to vocational education should change now into a demand-driven approach to vocational education in Botswana.

For economic growth to reach its peak, full utilisation of all skilled and qualified labour from all sources, that is from local universities, local vocational centres and expatriate technical know-how should be realised. The old concept of thinking of vocational education as suitable for the workplace should make way for a new way of thinking that can extend to sectors, industries and markets. Vocational education together with capital and management expertise

can harmonise cross sectoral strengths in education, skills, innovation, and technology, and provide solutions to the problem of lack of economic diversification and youth unemployment in Botswana.

4.3 Chapter summary

The chapter presented and analysed the results of the study which were divided into two sections. Section 1 comprised the introduction and section 2 entailed the actual presentation and analysis of the results. The presentation and analysis of results was sub-divided into the five sub-sections, that is, the demographics of the study, the role of vocational education in the general economy, the role of vocational education on the employment of youth in Botswana, the challenges faced by vocational education in Botswana, and finally what can be done to improve vocational education in Botswana.

CHAPTER 5

FINAL SUMMARY, RECOMMENDATIONS AND CONCLUSION

5.1 Introduction

Chapter five presents the final summary of the study, the conclusion as well as the recommendations that can be adopted by key stakeholders and policy-makers and whose implementation have the potential to revolutionise vocational education in Botswana.

5.2 Final summary

The research focused on examining the effects of vocational education on the economy and employment of youth in Botswana. The following is the summary of the research findings:

5.2.1 Role of vocational education on the economy and employment of youth

The study established that vocational education plays a very important role in the general economy and in the employment of youth in Botswana. It has been established that there is a positive relationship between vocational education and economic growth in Botswana. There are significant approximate relationships between the decreased role of vocational education in comparison to university education and the increase in the challenges associated with, and affecting, vocational education.

The study established that vocational education also determines the general economic fabric based on the amount of youth trained through vocational education and the productivity of firms that can contribute towards the fiscus and economic activity. Therefore, vocational education plays a very important role in Botswana's economic growth and alleviation of unemployment so it should cater for all Batswana.

Vocational education is a tool to assist in the development of skilled human capital for the economy's various activities by improving the employability, marketability, productivity and performance of vocational graduates for their employers and/or themselves.

The sidelining of vocational education must stop as it is hampering efforts for employment and positive effect on the general economy. Vocational education is the panacea for solving the youth unemployment problem. Vocational education can positively contribute towards

the general economy by way of productivity enhancement, increased efficiency and increased economic growth and high youth employment. However, it is vital to know the demand for labour against its supply and match these labour market fundamentals in order to eradicate unemployment.

Youth unemployment was found to emanate from failure to look at vocational education holistically as it pertains to the current economy and its capability and demands for future economic diversification including the private, public, regional, continental and international sectors. The supply driven approach to vocational education has worked for the last 53 years when Botswana did not have many university graduates and the gap that existed was filled by vocational graduates who worked in the public and private sectors of the economy. However, today when we have many university graduates, vocational education should take on an expanded role which is more demand driven to reduce the surplus labour which results in youth unemployment.

There are a growing number of vocational education graduates who have been trained but remain unemployed. Every year the vocational centres, brigades, and colleges churn out more graduates without corresponding expansion in the economy. The unemployment problem is further increased by high supply of labour which decreases the market value of labour thus making high remuneration prospects difficult. In Botswana, unemployment remains the biggest challenge for the youth today even though they received formal vocational and technical training qualifications and or skills.

Effective vocational education can solve youth unemployment issues as long as it is underpinned by effective policy formulation, implementation and monitoring. Currently, vocational education equips youth with practical skills to be able to find employment or be self-employed. Unemployment among the youth is because vocational education is not as effective as it was in the past.

Gender disparities exist in which vocational education disadvantaged male youth in employment than females due to historical factors. In reality it would appear that male youth are advantaged than their female colleagues. Both genders should be able to take advantage of study options in vocational education as a means to employment.

In a nutshell, vocational education in Botswana plays the following roles:

- Delivering practical skills to youths to find employment or launch their own business,
- Improving individual job performance and productivity of firms,
- Creating employment opportunities for the youth,
- Increasing labour force up-skilling and productivity,
- Enhancing economic growth through industrialisation/production.

5.2.2 Challenges facing vocational education in Botswana

There are some negative aspects (challenges) that the study found to inhibit the effectiveness of vocational education from fulfilling its mandate. Some of these challenges include:

- Poor quality curriculum outcomes
- Lack of prioritisation of vocational needs
- Lack of adequate infrastructure
- Inadequate funding
- Slow vocational education policy reform
- Poor policy coordination and implementation
- Perception that vocational education is inferior
- Ineffective industrial placement
- Low uptake of VET graduates by VET institutions
- Poor quality of instructors

5.3 Recommendations

Based on the findings of the study, the following recommendations are suggested:

- There is a need to improve the link between vocational curriculum and local labour market needs
- Vocational and academic education should be merged into one cohesive unit that encourages learning and adaptability
- There is a need for the government and private sector to make new investments in vocational education infrastructure and services
- There is a need to create experience pathways for lecturers and students to improve learning outcomes
- Enough theoretical knowledge must be provided to all students

- There is a need to improve funding and financial support for the vocational education sector
 - There is a need to improve employment opportunities for vocational education graduates
 - There is a need to improve vocational education teaching methodologies
 - There is a need to modernize and catalyse vocational education and ensure the proper employability of vocational education graduates.
- Employers need to support vocational education initiatives financially and otherwise to enable vocational education institutions to meet their needs.
 - There is a need for the overall reform of the vocational education system and employers need to get involved in vital issues such as curriculum development and reform
 - The tripartite relationship between labour, employers and government needs to come up with agreements concerning market related and realistic remuneration for employees under the vocational education and development programmes.

5.4 Conclusion

The study has demonstrated the fundamental roles and effects of vocational education on the economy and employment of the youth in Botswana. The study demonstrated that vocational education plays a significant role in the general economy and in the employment of youth in Botswana by facilitating the acquisition of scientific, practical and applied skills for employment and self-employment. It is evident from the research conducted that the current model for vocational education is now irrelevant and out of touch with the demands of the youth, global consumers and industrial organisations. The findings have established that the role of vocational education on the economy and employment of youth in Botswana is positive although in some cases, vocational education has resulted in high unemployment for the youth. Vocational education plays a significant role in the general economy and in the employment of youth in Botswana by facilitating the acquisition of scientific, practical and applied skills for employment and self-employment. The role of vocational education in Botswana is constantly shaped by the nature of vocational education, the policy actions and convictions of the government, the demands of employers and the global influences of international vocational education. Vocational education has a positive and long-lasting impact on the economy in general and the employment of the youth since 1966. However, it is failing to reach its full potential due to a myriad of challenges that have been identified that should be resolved in order to reform the sector thus enhancing the effectiveness of the

vocational educational system.

However, vocational education is not a one-size-fit all solution. Vocational education in Botswana is currently handicapped. The infrastructure supporting vocational education is obsolete and irrelevant. Financial support from the government has been found to be dwindling and to be irregular. The findings revealed that vocational education was not contributing as much as it should to the national economy and to the individuals concerned. The reasons for this lie primarily in the neglect of certain statutory and transitory roles that vocational education used to play that policy makers, implementers and custodians of the system no longer value.

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APPENDICES

Appendix 1: Research questionnaire

My name is **Samuel Oshima Mmolai** a final year Master of Education student at Botho University. As a partial fulfillment of my degree requirements, I am conducting a research on “The effects of vocational education on the economy and employment of youths in Botswana.”

You are kindly requested to voluntarily complete this questionnaire to assist the researcher to successfully achieve the objectives of this study. The information that you provide will be kept confidential and will be used only for this research.

Instructions

Please carefully read each of the following statements and respond by ticking ☒ the response box that best reflects your opinion. Where questions provide a choice, you can mark several options. Please be completely open and honest in your responses

Do not indicate your name on the questionnaire.

SECTION A: BIOGRAPHICAL DATA

1. Please state your Gender Male ☐ / Female ☐
2. Please state your Age 15-25year ☐ 25- 35ye ☐ Above 35 y ☐
3. Please state your Marital status Single ☐ Married ☐ Divorced ☐ Widowed ☐
4. Please state your Educational status

Educational Status	(tick)
Attended Junior School	
Attended Senior School	
Attended Vocational/Technical College	
Attended University	

5. Please state your current employment status

Position	(tick)
Trained and Employed	
Trained and Unemployed	
Untrained and Employed	
Untrained and Unemployed	

SECTION B

Please read the following statements and indicate the extent to which you agree or disagree by ticking the appropriate box

ROLE & EFFECTS OF VOCATIONAL EDUCATION	Strongly disagree	Disagree	Uncertain/ not applicable	Agree	Strongly Agree
a. Vocational education delivers practical skills to youths to find employment or launch their own business	☐	☐	☐	☐	☐
b. Vocational education improves individual job performance & productivity of firms	☐	☐	☐	☐	☐
c. Vocational education is an excellent catalyst for creating employment opportunities	☐	☐	☐	☐	☐
d. Vocational education results in poverty reduction, food security and social cohesion in youths	☐	☐	☐	☐	☐
e. Vocational education is a tool that can still be used to solve high youth unemployment	☐	☐	☐	☐	☐
f. The current vocational education system needs to be scrapped and re-developed	☐	☐	☐	☐	☐
g. Vocational education has positive effects on the youths in Botswana	☐	☐	☐	☐	☐
h. Vocational education is a waste of tax payers' resources	☐	☐	☐	☐	☐
I. Vocational education increases labour force upskilling and productivity	☐	☐	☐	☐	☐
j. Vocational education results in positive wage effects to skilled workers and negative long run	☐	☐	☐	☐	☐

wage increases	
k. Vocational training improves labour market outcomes	☐ ☐ ☐ ☐ ☐
l. Unemployed vocational education graduates increase dependence on government social programs	☐ ☐ ☐ ☐ ☐
m. Unemployment rates among the youth are much higher because vocational education is not as effective as in the past	☐ ☐ ☐ ☐ ☐
n. Vocational education disadvantages youth males in employment than female colleagues due to historical factors	☐ ☐ ☐ ☐ ☐
n. Vocational education promotes economic growth through industrialisation/production	☐ ☐ ☐ ☐ ☐

SECTION C

Please read the following statements concerning the most important challenges of vocational education in Botswana. Please indicate the extent to which you agree or disagree by placing a tick in the appropriate box (Where applicable).

	CHALLENGES OF VOCATIONAL EDUCATION	Strongly disagree	Disagree	Uncertain/ not applicable	Agree	Strongly agree
a.	The vocational education institutions are under subscribed.					
b.	Poor quality teachers					
c.	Poor quality of training of VET graduates					
d.	There are poor quality curriculum outcomes					
e.	There is a lack of prioritisation of Vocational needs					
f.	The quality of vocational education is poor					
g.	Lack of adequate infrastructure facilities					
h.	Inadequate funding of Vocational Education					
I.	Slow vocational education policy reform					
j.	Employers are unsatisfied with vocational education graduates					
k.	There are several policy coordination & implementation challenges					
l.	Vocational education is currently irrelevant					
m.	Poor systematic professional training & development of instructors and poor manpower planning					
n.	Vocational education is still perceived as inferior					
o.	Poor monitoring policy of vocational					

	education					
p.	Ineffective industrial placement					
q.	Inadequate previous general educational outcomes					
r.	Low uptake of VET graduates by VET institutions					
s.	Lack of industry & economic diversification					
t.	A generally poor learning-doing culture					

SECTION D

Suggest the ways vocational education in Botswana can be improved by ticking the appropriate box?

	Suggestion	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
I.	Improve link between vocational curriculum and local labour market					
II.	Vocational and academic education should be merged					
III.	Government and private sector must make new investments in infrastructure					
IV.	Create experience pathways for lecturers and students to improve					
V.	Enough theoretical knowledge must be provided					
VI.	Improve funding and financial support					
VII.	Improve employment for vocational education					
VIII.	Improve vocational education programs					
IX.	Improve vocational education teaching methodologies					
X.	Improve organisational commitment & trainee engagement					
XI.	Organize more training programs for teachers					

THANK YOU FOR YOUR PARTICIPATION!

Appendix 2: List of tables and figures

Table 2.3 Botswana economic growth (1980 – 2018)

Table 2.2 Summary of research: main effects of vocational education

Table 3.1 Sample of the study

Table 1.4 Correlation coefficient

Figure 2.3 Botswana: youth unemployment rate from 1991 to 2017

Figure 2.2 Vocational education and labour force linkages

Figure 2.4 Research model: dual system based on social reforms

Figure 3.1 Research steps

Figure 3.2 Quantitative research processes

Appendix 3: List of abbreviations and key terms

Key:

AJS=Attended Junior School

ASS=Attended Senior School

AVTC= Attended Vocational Technical College

AU= Attended University

AAL= Attended All Levels

JSVTC= Junior School & Vocational Technical College

JSU= Junior School & University

SSVTC= Senior School & Vocational Technical College

JSVTC= Junior School & Vocational Technical College

Key:

PSTY= Vocational education delivers practical skills to youths to find employment or launch their own business

IJJP= Vocational education improves individual job performance & productivity of firms

ECFC= Vocational education is an excellent catalyst for creating employment opportunities

RIPR= Vocational education results in poverty reduction, food security and social cohesion in youths

TSHY= Vocational education is a tool that can still be used to solve high youth unemployment

SNSR=The current vocational education system needs to be scrapped and re-developed

PEYB=Vocational education has positive effects on the youths in Botswana

WTPR= Vocational education is a waste of tax payers' resources

ILFU= Vocational education increases labour force up skilling and productivity

PWES= Vocational education results in positive wage effects to skilled workers and negative long run wage increases

ILMO= Vocational training improves labour market outcomes

GIDG= Unemployed vocational education graduates increase dependence on government social programs

UYHV= Unemployment rates among the youth are much higher because vocational education is not as effective as in the past

DYME= Vocational education disadvantages youth males in employment than female colleagues due to historical factors

PEGI= Vocational education promotes economic growth through industrialisation/production

Key:

VIUS=The vocational education institutions are under subscribed.

PQTC=Poor quality teachers

PQTV=Poor quality of training of VET graduates

PQCO=There are poor quality curriculum outcomes

LPVN=There is a lack of prioritisation of Vocational needs

QVEP=The quality of vocational education is poor

LAIF=Lack of adequate infrastructure facilities

IFVE=Inadequate funding of Vocational Education

SVEP=Slow vocational education policy reform

EUVT=Employers are unsatisfied with vocational education graduates

SPCI=There are several policy coordination & implementation challenges

VECI=Vocational education is currently irrelevant

PSPT=Poor systematic professional training & development of instructors and poor manpower planning

VEPI=Vocational education is still perceived as inferior

PMPV=Poor monitoring policy of vocational education

IIPO=Ineffective industrial placement

IPGE=Inadequate previous general educational outcomes

LUVG=Low uptake of VET graduates by VET institutions

LIED=Lack of industry & economic diversification

PLDC=A generally poor learning-doing culture

Key:

ILVC=Improve link between vocational curriculum and local labour market

VAAE=Vocational and academic education should be merged

GPSM=Government and private sector must make new investments in infrastructure

CEPL=Create experience pathways for lecturers and students to improve

TLMP=Enough theoretical knowledge must be provided

IFFS=Improve funding and financial support

IEVE=Improve employment for vocational education

IVEP=Improve vocational education programs

IVET=Improve vocational education teaching methodologies

IOCT=Improve organisational commitment & trainee engagement

OMTP=Organize more training programs for teachers