Career aspirations of construction TVET learners in South Africa

by

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Submitted in partial fulfilment of the requirements for the degree

PHILOSOPHIAE DOCTOR

in the Faculty of Education

at the

UNIVERSITY OF PRETORIA

Supervisor: Prof Chaya Herman

SEPTEMBER 2018

Declaration

I declare that the dissertation/thesis, which I hereby submit for the degree Philosophiae Doctor at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at this or any other tertiary institution."

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MN Ngozwana

September, 2018

Ethical Clearance Certificate

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DEGREE AND PROJECT	PhD Career aspirations of construction TVET learners in South Africa
INVESTIGATOR	Ms Ntebo Ngozwana
DEPARTMENT	Education Management and Policy Studies
APPROVAL TO COMMENCE STUDY	11 November 2014
DATE OF CLEARANCE CERTIFICATE	30 January 2018

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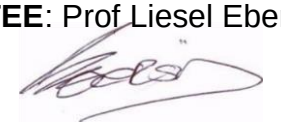

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Dedication

Throw your heart over the fence and the rest will follow — Norman Vincent Peale

I dedicate this work to everyone who has acted against all odds.

Acknowledgements

I would like to express my heartfelt gratitude to the following individuals without whom this work would not have been possible;

Prof Chaya Herman, your guidance, support and unparalleled patience made this possible, and allowed me to find a voice in the midst of all the noise and confusion.

The STATOMET team at the Department of Statistics at UP, thank you for the patience and the timely advice.

To Team CIP at the Construction Industry Development Board, your energy and enthusiasm kept me going until the last moment. I could not have asked for a more supportive team during this time.

To Alexa Barnby for the editing services, some of the seemingly minor changes made a significant difference to the final product. Thank you for the attention to detail.

To my critical readers who critiqued this work at different stages of development. Thank you all for listening to my ramblings and giving me the space to refine my thought processes.

To the TVET colleges, your tolerance of the class disruption during the data collection stages is highly appreciated. I am eternally grateful to the learners who showed the greatest enthusiasm during questionnaire collection and focus group discussions.

Lastly, to my friends and family for the gentle nudging during the course of this journey. It is highly appreciated.

Abstract

This thesis argues that changes in training and skills development in construction careers and the decline in fulltime employment opportunities in the industry have affected the absorption of new entrants. Learners struggle to access practical workplace training resulting in many failing to complete their qualifications and qualify as artisans. Understanding learners' aspirations for choosing construction careers is important for the development of industry aligned training programmes and absorption into workplaces.

This study investigated the career aspirations of learners enrolled in the construction NC(V) programme at TVET colleges using Gottfredson's theory of circumscription and compromise. The study examined the reasons learners choose construction careers, the compromises that influence these decisions and the learners' expected careers after graduating from college.

The study used questionnaires and focus group discussion to study the educational and socioeconomic background of learners enrolled in the NC(V) programme at two colleges. Their motivation for enrolling in construction programmes, experiences at college and its impact on their career expectations were also investigated.

The study concludes that the construction TVET programme attracts an equal number of Grade 9 and 12 learners, evenly spread between female and male participants. The study further shows that role models and parental education does not seem to have a significant influence of career aspirations, and learners mainly get information on construction careers from the electronic media. The study concludes that learners enrol in TVET colleges because of accessibility and availability of financial support in these colleges.

The study makes the following recommendation to meet the career aspirations and improve the career outcomes of construction TVET learners. Firstly, school level career guidance must be initiated at Grade 9 to assist learners with their subject and post school educational choices. TVET colleges must establish closer working relationship with industry to expose learners to construction careers early in their studies. Partnerships must be initiated between the construction industry and TVET colleges to assist learners to differentiate between the different construction careers

and the educational streams required to reach them. And lastly, encouraging and supporting female participation in the construction industry by exposing learners to areas of specialisation that offer careers beyond the conventional, physically demanding construction trades.

Key Terms: Career aspirations, technical and vocational education, construction industry

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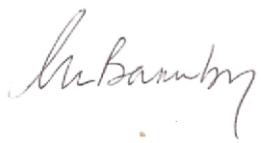
5 December 2017

To whom it may concern

This is to certify that I, Alexa Kirsten Barnby, a language practitioner accredited by the South African Translators' Institute, have edited the doctoral dissertation titled "Career aspirations of construction TVET learners in South Africa" by Moleboheng Ntebo Ngozwana.

The onus is, however, on the author to make the changes and address the comments.



List of abbreviations

BERA	British Educational Research Association
cidb	Construction Industry Development Board
DHET	Department of Higher Education and Training
DoE	Department of Education
DoL	Department of Labour
FET	Further Education and Training
GET	General Education and Training
HE	Higher Education
HEI	Higher Education Institution
HSRC	Human Sciences Research Council
NAWIC	North American Women in Construction
NBI	National Business Initiative
NC(V)	National Certificate Vocational
NEET	Not in Employment, Education or Training
NQF	National Qualification Framework
NSC	National Senior Certificate
NSFAS	National Student Financial Aid Scheme
OECD	Organisation for Economic Co-operation and Development
PSET	Post School Education and Training
RDP	Reconstruction and Development Plan
SETA	Sector Education and Training Authorities
SSACI	Swiss-South Africa Cooperation Initiative
StatsSA	Statistics South Africa
TUT	Tshwane University of Technology
TVET	Technical and Vocational Education and Training
UK	United Kingdom
VET	Vocational Education and Training
Wits	University of the Witwatersrand

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1. CHAPTER 1 BACKGROUND TO THE STUDY

1.1 Introduction

Career aspirations and expectations have been shown to influence educational choices and academic achievements (Hou & Leung, 2011; Robbins, Wallis, & Dunston, 2003). In South Africa, learners who aspire to take up careers in the construction industry can either become professionals with a university education, or tradesmen with a vocational education. Vocationally inclined learners may, after completing nine years of compulsory secondary schooling, enrol in technical and vocational education and training (TVET) colleges for a National Certificate Vocational [NC(V)], Sector Education and Training Accredited (SETA) learnerships or workplace-based apprenticeships. The National Certificate Construction [NC(V)] offered by TVET colleges is promoted by the Department of Higher Education and Training (DHET) as a potential pathway to vocational occupations including those with artisan status, or a as stepping stone to academic careers for learners who could not get into university directly after school.

While the National Certificate Vocational [NC(V)] programme offered by TVET colleges should be a pathway to both professional academic studies and artisanal qualifications, research shows that most TVET students neither continue to further their academic studies nor obtain gainful employment in industry. The question is therefore what their aspirations are when they enrol in TVET colleges and whether these aspirations change while they are on campus.

In view of the aggressive promotion of TVET programmes by the Department of Higher Education and Training (DHET, 2012) and the extensive funding and other resources being poured into their promotion, it is important to understand the career aspirations of TVET college graduates in regard to the TVET construction programmes. This, it is hoped, will improve the colleges' responsiveness to students' needs and the relevance of the programme to the construction industry.

There are currently no South African studies on the career aspirations of learners enrolling in construction programmes, despite the reported shortage of skills in the industry. The discrepancies between the high rate of unemployment and the

reported shortage of technical skills (National Development Plan, 2013) begs the question of whether learners enrol for inappropriate programmes or whether there is a mismatch between learners' aspirations and industry needs.

The purpose of this study is to investigate the career aspirations of learners who enrol for the NC(V) construction programmes at TVET colleges with a view to understanding the development of these aspirations and subsequently improving the recruitment, placement and retention of learners in the construction industry.

1.2 Main research question

The main research question formulated for this research was as follows:

To what extent does the National Certificate Vocational [NC(V)] qualification fulfil the career aspirations of learners enrolled in the construction programme at TVET colleges?

Secondary questions

The secondary research questions for this research study include the following:

What are the career aspirations of learners enrolling for construction NC(V) programmes at TVET colleges?

What factors influence the career aspirations of the construction TVET learners?

How do the learners' experiences in the TVET college impact on their aspirations?

The study was conducted among learners on levels 2 to 4 of the NC(V) programme in two colleges in Gauteng province. Briefly, questionnaires were distributed to 218 learners, and were subsequently analysed and followed up with three focus group discussions with learners at one of the two colleges. The aim of the focus group discussions was to validate the findings of the questionnaires and probe some of the issues that they raised.

1.3 Rationale for the study

The technical and vocational education and training (TVET) branch of the DHET aims to provide intermediate skills that will enable learners to either enter the world

of work or continue their studies at universities and universities of technology. In achieving this aim, partnerships with industry are needed to facilitate work-integrated learning to ensure that learners are employable. Thus, TVET college staff have access to workplaces where the quality and relevance of the skills they impart to learners at colleges may be improved (DHET, 2013).

Although the Post School Policy (DHET, 2013) was developed to respond to the need to transform educational enrolments and improve access to higher education, it does not consider the career aspirations of learners and the capacity of different institutions. Furthermore, the National Development Plan has placed emphasis on the importance of infrastructure investment as a vehicle for youth employment, economic development and poverty alleviation (National Planning Commission, 2012). Given the reported shortages of skills in the engineering and construction industry (Akoojee, 2012; Allais, 2012) it is important to understand the reasons that motivate young learners to enrol for TVET construction programmes.

This study intends to contribute to a better understanding of the aspirations of learners entering the construction industry in order to improve the recruitment and retention of learners in the industry. It will also contribute towards the development of a balanced TVET construction curriculum that serves the needs of learners wanting to join the world of work immediately while incorporating adequate academic content to facilitate entry into higher education.

This study complements the work I am doing within the construction industry, encouraging construction companies to provide placement opportunities for learners coming from the different educational streams. It is therefore important that I understand the reasons why young people enrol in TVET construction programmes so that I may be better able to help the industry meet their career aspirations and motivate colleges to offer a curriculum that facilitates easy transition from college and absorption into the industry.

1.4 Construction careers in context

After mining, the construction industry is the second-most male-dominated industry with more that 84% male domination in the United Kingdom (UK) (Fielden, Davidson, Gale, & Davey, 2000). It requires strength and the ability to hold tools which lends

itself to male domination and limited female participation (Gann & Senker, 1998). In South Africa, the male participation rate in construction was 84% in 2008, increasing to 89% in 2014 (Statistics South Africa, 2014). Construction is an industry with highly entrenched levels of segregation by sex (Fielden et al., 2000). Construction work is perceived as dirty, dangerous and unsafe and not an ideal career of choice, and it does not therefore attract high-performing students (Gann & Senker, 1998). Young people's knowledge about professional careers in the industry is mainly limited to engineering and architecture, which require high skills levels for entry (Fielden et al., 2000), and higher educational attainment (Koppel, Cano, & Heyman, 2002).

The construction industry is not suited to women because construction work involves long hours, routine work over weekends, high workloads during peak periods, changing work locations and often working away from home (Fielden et al., 2000), which do not support traditional female social roles. Within the construction industry women are mainly engaged in secretarial, clerical and personal protective services, mostly on a part-time basis (Fielden et al., 2000). Women are, however, perceived as more organised and therefore contribute to improvements in job scheduling and planning, as well as the achievement of higher quality standards (Agapiou, 2002).

The cyclic nature of the construction industry affects the education and career prospects for new entrants to the industry. Direct employment in the trades, while only prevalent in the housing sector, is dependent on the availability of subcontracting opportunities (Cremers, 2009). Tradesmen often face long periods of unemployment between contracts (Fielden et al., 2000; Gann & Senker, 1998). It can therefore be concluded that career prospects for learners entering the construction industry are not very good, except where they aspire to the professions or self-employment.

1.5 TVET education in context

Historically, emphasis on education provisioning has been on universal primary education as espoused in the Millennium Development Goals (MDGs). The success of universal education has led to a shift in emphasis to TVET to provide a transition to constructive employment for secondary school graduates (King, 1993; McGrath, 2012; Palmer, 2007).

TVET provides opportunities for youngsters, especially those from the lower socioeconomic classes, to access job opportunities, continue with further studies and improve their economic wellbeing (Oketch, 2007; Pongo, Effah, Osei-Owusu, Obinnim, and Sam, 2014; and Wallenborn, 2010).. It provides youth with the intermediate skills required for employability and self-employment and to make a contribution to society. It is thus clear that TVET is intended to produce the skills needed for economic development and social mobility. Bennell, Mukyanuzi, Kasogela, Mutashubirwa, and Klim (2006) have shown that TVET promotes socioeconomic development in rural areas of developing countries by facilitating self-employment and therefore poverty reduction among the poor.

Powell (2012) further supports the importance of TVET in the developing world when she characterises it as an emancipator that contributes to human capital development, leading to freedom to choose and the "capability to aspire". According to Powell (2012), TVET should not only be viewed as a means for solving unemployment and improving productivity but also as a developmental undertaking that affords participants the freedom to choose. It has been shown that high-level technical skills enable people not only to become self-employed but also to provide services in their immediate communities.

Technical education can be a stepping stone to higher education where college credits are recognised by universities and universities of technology and used by learners for enrolling for higher educational studies (DHET, 2013). TVET has also been shown to improve the chances of self-employment and technical positioning for young adults and people from lower socioeconomic classes, as it improves skills and competencies while at the same time promoting social cohesion (Allais, 2012; Fuller, Rizvi, & Unwin, 2013; Leach, 1995; Wu, 2012). Vocational and technical education provides a platform for self-employment (Bennell et al., 2006). The high unemployment rate and shortage of workers with intermediate skills therefore motivate young people to undertake further studies at TVET colleges in the hopes of improving their chances of securing good employment (Akoojee, 2012; Kraak, 2008).

There is limited research on the career aspirations and expectations of South African university students (Dass-Brailsford, 2005; Robbins et al., 2003). There are currently no studies on the career aspirations of TVET learners in the South African

construction industry. This study therefore seeks to address the gaps in literature about the career aspirations of learners in the TVET construction streams.

1.6 Theoretical concepts

In this study, I will use Gottfredson's theory of circumscription and compromise to study the process of career decision making in adolescents and how these decisions are acted upon (Gottfredson, 1981). The theory demonstrates how career aspirations are developed and refined during progressive stages of development from a young age to adolescence, and how they affect educational achievement and decisions to enrol in further studies. As applied in my study, the theory suggests that the career aspirations of learners and their decision to enrol in construction TVET programmes are influenced by gender, socioeconomic status, parental educational achievement, role models, and access to information and resources.

Gottfredson (1981) argues that social background determines the availability of role models and the information that youth use for career decision making. Personal and socio-environmental factors are also shown to affect career decision making by affecting access to information, quality of education and social networks that may provide informal career guidance, and thus influence academic achievement and career aspirations.

1.7 Career circumscription and compromise

Circumscription is defined as the process of eliminating choices inconsistent with one's sense of self and it takes place through progressive life stages. It is a process of eliminating career alternatives based on gender and social class. Gottfredson states that in early childhood career choices are gendered and based on power and size, resulting from observations and the perceived prestige of the occupation. At this stage, children aspire to be the biggest, most powerful person. Early circumscription tends to reproduce the social class and structure the child occupies. Children therefore make career choices based on what they observe from their parents and immediate environment in their daily lives. Progressive stages of circumscription take place during adolescence when careers are circumscribed based on gender, social values and self-interest (Gottfredson & Johnstun, 2009).

Compromise is, according to Gottfredson and Lapan (1997), a process of modifying career choices as a result of limiting factors such as study opportunities, study financing and job availability. In this study, I will investigate the factors that influence the compromising of career aspirations as the learners enter college having already circumscribed their aspirations. On entering colleges learners are acting on their career compromise based on available resources.

1.8 Research design and methodology

This study adopted a pragmatic approach to research using an explanatory sequential mixed methods design (Cresswell & Plano Clark, 2007). Accordingly, a qualitative methodology will be used to explain and provide a deeper understanding of the quantitative results. Mixed methods design is chosen because it offers flexibility in investigations. This flexibility is important as it strengthens mixed methods inquiries and facilitates, firstly, the reframing of the inquiry as contradictions and paradoxes are discovered through the application of one method; and secondly, expansion of the range of inquiry by using different methods for different parts of the research project (Greene & Caracelli, 1997; Johnson & Onwuegbuzie, 2004).

In order to explore the career aspirations of TVET college graduates, I will test the applicability of conventional factors identified in the literature as influencing the career aspirations of this study population, and further undertake an in-depth investigation of how these factors change during the learners' progression through the TVET programme. A pragmatic approach is therefore best suited as it allows the flexibility to use both quantitative hypothesis testing of current theory, and qualitative inquiry to enhance the understanding of the quantitative results.

The population for this study is drawn from two TVET colleges in peri-urban areas of Gauteng province. The population comprises learners enrolled for the National Certificate Vocation [NC(V)] in civil engineering and building construction. All learners enrolled in the three levels of the NC(V) programme were recruited and participation was voluntary.

1.9 Limitations of the study

The National Certificate Vocational [NC(V)] in civil engineering and building construction is a national curriculum offered by TVET colleges across the country. It consists of specialisations in bricklaying, carpentry and roofing, plumbing and concrete structures and is offered over three years. In this study I did not attempt to study the curriculum content of the subjects at each level of study, or the pass rate within the different levels of the programme, as this study did not attempt to assess variations in the quality of teaching and learning at the different colleges.

1.10 Ethical considerations

Research on human subjects poses many ethical considerations as there may be perceptions of abuse of research subjects. In order to safeguard the interests of the research participants it was imperative to obtain ethical clearance from the Research Ethics Committee of the University of the Pretoria and this study did not commence until ethical clearance had been obtained. In keeping with the university regulations and to ensure good research practice, ethical clearance was sought from the university and permission to conduct the study was sought from the colleges. Learner participation was voluntary and no learners coerced into taking part in the study.

1.11 Layout of the report

Chapter 1 presented an introduction to the study and the rationale for conducting it, as well as the research problem that the study planned to address. It further provided an overview of the concepts that are central to the study.

Chapter 2 comprises a review of the available literature on construction education with an emphasis on technical and vocational education. It introduces the concept of technical and vocational education, its economic value and models of technical education in different countries. The chapter continues by discussing the evolution of technical and vocational education in South Africa through the different stages of the country's development. It concludes by discussing the governance challenges in TVET colleges and the impact these have on the National Certificate Vocational [NC(V)] programme.

Chapter 3 contains the conceptual framework of the study. It describes the developmental stages of career aspirations and how these progress during the stages of development from childhood to adolescence. The chapter then proceeds to discuss the factors that influence the development of career aspirations and concludes by presenting the theoretical framework used in this study.

Chapter 4 comprises a description of the research design used in this study and provides the rationale for choosing a pragmatic research approach. It further describes the research methodology, including the research design, research methods, population and sampling technique used, as well as issues of ethics and the treatment of the findings to ensure the validity and reliability of the findings.

Chapter 5 presents the study findings. The first part of the chapter presents the descriptive data on learners' demographic profiles, their socioeconomic status, financial access and access to career and industry-related information. The second part is a cross tabulation of the descriptive statistics to determine relationships between the variables that affect the development of career aspirations. The qualitative data is used to clarify and emphasise issues raised in the quantitative data.

Chapter 6 provides an analysis of the findings and how they relate to the concepts introduced in chapter 3. The analysis also highlights important issues around career guidance and decision making in the development and expression of career aspirations. The chapter concludes by providing an analysis of the impact of the college experience on the learners. This chapter lays the foundations for the conclusions and recommendations that are presented in chapter 7.

Chapter 7 is the concluding chapter and brings all the arguments together to answer the research question. It discusses the strengths and weaknesses of the current educational system for construction trades and makes recommendations for further work that may assist learners to enhance their career aspirations and make informed choices about their educational pathways into the construction industry.

2. CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

The literature review discussed in this chapter will contextualise the literature on the expression of career aspirations in technical and vocational education in South Africa, with specific reference to construction skills education. The chapter will describe the historical development of technical and vocational education and training (TVET), its contribution to economic development and its value to society. It will then proceed with an appraisal of the international perspective of TVET with reference to the educational models applied in countries regarded as the leaders in TVET education. These will include the German and Swiss dual systems, the English model, as well as a developing country perspective using Ghana. Ghana's system is, like South Africa's, modelled on the English system.

The review will continue by describing the evolution of TVET in South Africa, focusing on its historical development and covering the changes that ensued following the introduction of separate development under the apartheid policies of the previous government, to the current state as implemented by the democratic government post-1994.

I will then focus on the organisation of work in the construction industry and the impact this has on training provision for new entrants. This will be followed by a review of the changes in the structural configuration of the construction industry and their effect on training and, ultimately, the career aspirations of new entrants to the industry. This section will describe historical infrastructure delivery models, the industry arrangements that supported these delivery models and how they influenced training, and will follow the changes in the predominant project management business models of delivery. Finally, the impact of extensive subcontracting and, especially labour-only subcontracting, on training and skills development in the construction industry and ultimately the career aspirations of learners will be discussed.

The chapter concludes by providing a description of current training programmes in the construction industry. This will include a description of the recognised exit-level outcomes and entry-level jobs, how they are achieved in real life, and how the changes in construction industry configurations have affected the attainment of these outcomes and learners' aspirations.

2.2 Development in vocational education and training

Vocational education and training (VET) is the branch of post-secondary education and training that provides job-related technical skills training. Vocational education covers a range of careers and industries such as the engineering and construction trades, manufacturing, retail and business-related studies, hospitality and technology.

UNESCO defines vocational education as follows:

> Education that is designed for learners to acquire the knowledge, skills and competencies specific to a particular occupation or trade or class of occupations or trades. Vocational education may have work-based components (e.g. apprenticeships). Successful completion of such programmes leads to labour-market relevant vocational qualifications acknowledged as occupationally-oriented by the relevant national authorities and/or the labour market (UNESCO, 2011, p. 14).

Vocational education is meant to provide learners with skills for employability and job readiness attributes that enable them to join the world of work.

Historically, emphasis on education provisioning has been on universal primary education as espoused in the Millennium Development Goals (MDGs). The success of universal education has led to a shift in emphasis to technical and vocational education and training (TVET) to provide employment for secondary school graduates who cannot find employment on leaving school (King, 1993; McGrath, 2004, 2012; Palmer, 2007). Wallenborn (2010) also attributes the renewed interest in TVET to the success of universal primary education policies and a need to find employment for secondary school graduates.

In support of vocational education, Brewer (2013) reports that primary and secondary education prepares students to undertake lifelong learning and continuous improvement, but does not impart key employability skills. It is against this background that technical and vocational education is gaining currency as a mechanism to prepare young people for occupational fields and enhance their participation in the world of work (Baraki & Kemenade, 2013). Vocational education is also seen as a catalyst for increasing the productivity and employability that will result in poverty reduction and economic competitiveness (Wallenborn, 2010). Wallenborn, however, cautions that TVET is about labour market competencies and not about educational achievements and should therefore be restricted to its aims of producing employment, sustainable growth and productivity rather than the attainment of general education outcomes.

Vocational and technical education is growing around the world with, for example, more than a quarter of students in Denmark and the Netherlands enrolled in vocational programmes (Adams, 2011). The percentage enrolment in vocational education is currently over 50% in the UK and 40% in Australia, but vocational education is not popular in Africa where enrolments vary across different countries and average only 5% across the continent (Adams, 2011). The economic development contribution of vocational education is supported by historical evidence that suggests that post-war economic development in Britain, Germany and Japan was strongly dependent on vocational training and technological know-how (Oketch, 2007). The next section will describe the societal value of vocational and technical education and how it contributes to economic development.

2.3 Economic value of TVET

The value of TVET to society is in providing opportunities for youngsters, especially those from the lower socioeconomic classes, to raise their income levels and access employment opportunities , facilitates youth and women's empowerment and social inclusion (Nyerere, 2009) . It provides youth with the intermediate skills required for employability and for making contribution to society. TVET produces the skills needed for economic development and social mobility. Bennell et al., (2006) have shown that TVET promotes socioeconomic development in the rural areas of

developing countries by facilitating self-employment and therefore poverty reduction among the poor.

Powell (2012) supports the importance of TVET in the developing world when she characterises it as an emancipator that contributes to human capital development, leading to freedom to choose and the “capability to aspire”. According to Powell (2012), TVET should not only be viewed as a means for solving unemployment and improving productivity but also as a developmental undertaking that affords participants the freedom to choose. It has been shown that high-level technical skills enable people to contribute to economic development through self-employment and to provide services in their immediate communities (Bennell et al., 2006).

TVET has also been described as having the potential to extend education and training to all, and to contribute to human capital development in populations that were historically excluded from the benefits of post-school education and qualifications (Lamb, 2011). This argument is also articulated by Hartl (2009), who comments that an educated citizenry shapes the social fibre of society and improves its human capital, thus leading to a reduction in poverty. The benefits of TVET are further attested to by researchers who have shown a direct correlation between educated populations and economic development (Castello-Climent & Hidalgo-Cabrillana, 2012; Kim, 2012; Lopez-Fogues, 2012).

In characterising the societal benefits of TVET, Lamb (2011) notes that the majority of Australian TVET student come from poor backgrounds and have not completed their high school education, thus making TVET a stepping stone to future opportunities. This view supports Hartl’s observation that TVET provides rural people with the technical and vocational skills necessary to empower them and reduce poverty (Hartl, 2009). Evidence of TVET’s contribution to poverty reduction is further provided by Oketch (2007) and Pongo, Effah, Osei-Owusu, Obinnim, and Sam (2014) when they state that in African countries vocational education increases the employability of graduates by equipping youth with skills for employability and access to better wages, resulting in poverty reduction.

Technical and vocational education and training (TVET) is described as a tool for tackling social, cultural and economic deprivation and a solution to unemployment,

poverty and inequality; it is a means of increasing economic growth, productivity and per capita income in a country (Lawy, 2010; Nilsson, 2010). Pongo et al. (2014) indicate that Ghanaian youth continue to face unemployment, underemployment and poverty owing to a lack of skills and lack of relevant education. Adams (2011) challenges the assertion that youth unemployment is the result of a lack of skills and suggests that it might be due to jobless economic growth. It has therefore been argued that TVET provision must be increased among the youth to facilitate self-employment (Akoojee, 2009; McGrath, 2005; Mureithi, n.d.; Oketch, 2007; Pongo et al., 2014) and economic development (Kruss & Kraak, 2002; Lamb, 2011; Papier, Needham, & McBride, 2012). McGrath (2005) further argues that international trends and reforms in education and vocational training must focus on self-employment. He therefore calls for the provision of training that combines both the technical and business elements at TVET colleges (McGrath, 2005).

Commenting on TVET provision in South Africa, McGrath (2012) argues that it is imperative that provision is part of a philosophy supportive of economic development. This view is reinforced by Kruss and Kraak (2002) when they state that a TVET system in a developmental state must aim at helping learners to secure sustainable livelihoods that include economic growth, equity and transformation. The South African TVET system in the post-democratic era was therefore designed to provide for youth and adults to acquire skills, knowledge and values for lifelong learning, and to address the needs of the learner, industry and society at large (Kruss & Kraak, 2002). This proposition perceives economic development as the ultimate goal of society and vocational education as a vehicle for this mission (Hartl, 2009).

TVET has also been shown to improve the chances of self-employment and technical positioning for young adults from lower socioeconomic classes, as it improves skills and competencies while at the same time promoting social cohesion for the “less privileged groups” (Allais, 2012; Fuller et al., 2013; Leach, 1995; Wu, 2012).

Economically successful Eastern Asian countries have shown that vocational education contributes to economic success by continuously reforming TVET provision in line with the stages of national economic development (Oketch, 2007). In

these economies, TVET is used extensively to provide the human resources required to drive subsequent stages of the country's development trajectory (Kruss & Kraak, 2002). These Asian experiences endorse the contribution of TVET in a developmental state by helping learners to secure sustainable livelihoods and facilitating inclusive economic growth, equity and transformation.

TVET offers opportunities for youngsters, especially those from the lower socioeconomic classes, to access job opportunities, continue with further studies and improve their economic wellbeing (Bennell, Mukyanuzi, Kasogela, Mutashubirwa, and Klim, 2006; Oketch, 2007; Pongo, Effah, Osei-Owusu, Obinnim, and Sam, 2014; and Wallenborn, 2010). It provides the youth with the intermediate skills required for employability and self-employment (Bennell et al., 2006) and for making a contribution to society. TVET produces the skills needed for economic development and social mobility. High unemployment and a shortage of workers with intermediate skills therefore motivates young people to undertake further studies at TVET colleges in the hopes of improving their chances of securing productive employment (Akoojee, 2012; Kraak, 2008).

In low socioeconomic environments, TVET uptake is necessitated by family circumstances and the allure of immediate entry into the world of work and earning an income (Hartl, 2009; Nyerere, 2009). These diverse impacts render TVET provision not only about responding to economic pressures but also as being an important contributor to social inclusion. Papier et al. (2012) therefore argue that vocational education must be centralised within a formal setting to produce the skills required for inclusive national development.

Students in different countries experience TVET differently depending on the national perception of vocational education. In Ghana, where TVET provisioning is both formal and informal, it has very low priority and is considered the educational destination of people who cannot make it in the academic stream (Palmer, 2007). In Germany, on the other hand, vocational education enjoys very high status as a stepping stone to technical careers that lead to productive employment and, ultimately, research degrees for learners who are so inclined (Brockmann, Clarke, & Winch, 2008; Hirche, 2012). In South Africa, the historical exclusion of Africans from

artisanal and professional careers has resulted in poor societal perceptions of vocational education (Papier et al., 2012).

Where TVET has a low profile, it is generally regarded as a solution to youth unemployment and a way of getting unemployed youth off the streets while equipping them with skills that may be required for economic revival (Oketch, 2007). McGrath (2000) posits that, internationally, vocational education is used to solve the problems of disaffected youth, reduce youth unemployment and solve crime. This view is endorsed by Baraki and Kemenade (2013), who argue that vocational education is used as a solution to the "educated unemployment" youth problem. They describe technical vocational education as an avenue to keep youth off the streets and make them available for employment when the opportunities arise. Kraak (1991) describes students' experiences of vocational education as a "training without jobs" situation that camouflages the problem of youth unemployment during periods of economic downturn. He argues for a more inclusive vocational system that provides the skills needed by industry.

There are various models of TVET provision and some of these are not necessarily aimed at low academic achievers or to solve youth unemployment issues. In some countries, TVET is an integral part of both the educational and economic development structures and attracts good candidates wishing to bring about change in society through technological innovation and productive employment.

The following section will look at the various models of TVET provision used in Germany, England and Ghana to indicate the potential contribution of TVET to national education and economic development.

2.4 The German dual model

Some countries have successfully integrated vocational education and the provision of high-level skills into their national educational systems. The German and Swiss model of TVET education is an example of an employer-led dual-based system that affords young people the potential of upward mobility into higher education and careers while avoiding academic dead-ends. It comprises a fulltime two-year school-based programme and the traditional employer-led part-time four-year programme,

which places specific emphasis on training and employment progression post qualification (Berger & D'Ascoli, 2012).

In Germany, vocational education is employer led with components of school-based education that take place at a technical school and practical training at a workplace (Hyslop, 2012). German technical and vocational schools are populated with young people in fulltime employment undergoing concurrent vocational and academic education (Chan & Moehler, 2008), the so-called “dual model” (Barabasch, 2012).

According to Euler (2013), there are core principles and elements that make the German system successful and these include the following:

- The value that the German society places on vocational education and its potential to result in social, economic and individual empowerment. This motivates employers to make their workplace available as training sites to give learners exposure to workplace learning opportunities. The German dual system is thus a complementary system with alternate teaching blocks being offered by both the VET schools and industry partners. Society as a whole accepts and values vocational training. Because of the value placed on vocations by German society, training positions for the learners are provided by industry and learners actively compete for these positions.
- The capability of the VET system to produce skilled, mobile and capable graduates who can relocate and work in any area of their chosen field. The general educational content and flexibility of options allows graduates to fit very well into their areas of specialisation.
- The German VET system is a partnership between government and industry with both parties taking responsibility for curriculum development and financing for the programmes. The joint funding means both parties are invested in the success of the educational system, with government looking for increased employability for graduates and industry being interested in the quality of training and the work-readiness of the graduates.
- Government involvement in training and curriculum development leads to training standards that are codified and applied across the country to ensure quality of output. In this system the trainer is not responsible for the exit level assessments as these are the responsibility of regional chambers of

commerce. This further ensures the sustained quality and employability of the graduates.

- The teachers at colleges and trainers in the workplace are well trained and qualified in the vocational skills they are teaching to ensure the relevance of output. Industry also ensures that whenever there are new innovations, the college teachers are retrained to keep abreast of developments and to produce relevant skills for industry.
- To maintain the employability of TVET graduates, the German system is designed to maintain a balance between standardisation across the country and flexibility to accommodate regional and industry differences and technological development as the vocational fields advance. German VET education provides a balance between design and decision-making elements, leading to the production of a well-rounded graduate ready to be absorbed into the workplace.

The “dual model” in Germany has also been expanded to include programmes that integrate apprenticeship training at artisanal level and academic studies at universities up to engineering level. Entrants to this dual study system have to be in possession of a university admission qualification – a high school level education with at least 12 years of schooling. The “dual study system” student follows the apprenticeship training programme at a technical school to become an artisan, together with an academic programme at a technical university to become an engineer. The system provides for an overlap of the vocational and academic education that enables the student to complete both the apprenticeship and engineering training in four and half years, and to exit with two qualifications, a vocational qualification and an academic degree.

The advantages of the dual study programme for engineers are that they graduate with a good understanding and appreciation of the trades and are therefore better suited to interact with the vocational trades in the workplace. The curriculum development is employer led and therefore results in high employability for the graduates. The major disadvantage of this training model is that all candidates have to have fulltime apprenticeship contracts which limit the number of training opportunities to those candidates who are able to secure fulltime employment.

2.5 The English model

Historically, the British vocational education and training system was developed as a liberal system with limited government intervention. Training took place in workplaces and vocational schools using a curriculum that was defined by employers, labour and union representatives. This system placed employers at the core of the vocational education and training in that curriculum changes and training outcomes were determined by the job market or the needs of individual companies. The curriculum content was very flexible as it was determined by companies to meet their immediate needs but had a major limitation in that it was non-portable, and graduates were therefore not able to use it in industries that had production deviations from where the qualification was developed. Training was financed by companies that were producing skills for their own consumption with learners sometimes having to pay for their own training to secure employment. There was, historically, very limited if any governmental involvement in vocational skills development.

The current English model of vocational education is college-based with the educational component provided at schools and colleges, and workplace training offered by companies. A significant change from the historic model is the involvement of government in vocational training which extends from the funding of vocational programmes to the setting and standardisation of vocational curriculum. The focus of the system is on increasing the learners' chances of competition for scarce jobs while at the same time minimising the cost of training for companies, and the possibility of trainees not completing their training programme.

The emphasis of the current English system is on transferable skills that facilitate mobility across economic sectors, and international competitiveness (Fisher & Simmons, 2012). The educational offerings are centrally accredited to facilitate validity and currency across different economic markets and employers. It is a system premised on increasing social inclusion and economic prosperity for learners, especially minority groups and low ability learners. The average age of learners in English vocational colleges ranges from fourteen years of age to post retirement with most enrolled in fulltime public-funded programmes (Chan & Moehler, 2008).

Government involvement in vocational education and training has been criticised because government emphasises the development of standardised qualifications. Government is also considered as having failed to adequately enforce the employer contribution to skills development through mechanisms such as work placement, with such efforts being limited to setting targets that are not honoured by employers. Gleeson and Keep (2004) assert that some of these TVET qualifications are not necessarily valued by employers who perceive them as having limited impact on productivity. UK employers have been reluctant to offer workplace learning and do not contribute to skills development as they consider low-skilled employees still capable of producing the requisite quality of products.

Another major concern with TVET provision in the UK is that it perpetuates social exclusion and economic inequalities by enrolling mainly children from low socioeconomic classes and minority groups (Gleeson & Keep, 2004). TVET education also suffers from limited employer support with students struggling to secure places for experiential learning and employment upon completion of their studies (Belt, Drake, & Chapman, 2010).

As the South African vocational education system is mainly organised in the same way as the English model, it may be assumed to suffer from similar challenges. The set-up of the African and South African vocational education system and its challenges will be discussed in the following section.

2.6 An African perspective on TVET

There has been a resurgence of interest in vocational education in African countries, especially with the attainment of high levels of secondary education and a proliferation of unemployable youth. Vocational education in Africa was historically associated with colonial subjugation and, consequently, regarded as inferior, terminal occupational education that led to dead-end jobs (McGrath, 2012; Oketch, 2007). It has, however, been shown that TVET education can result in learning experiences relevant to the world of work which generally lead to direct labour market entry (Adams, 2011; Baraki & Kemenade, 2013; Brewer, 2013; Hughes, 2005; Kraak, 1991; McGrath, 2012; Oketch, 2007; Pongo et al., 2014). TVET education gives youth who failed to complete basic education a second chance and

is getting support within national educational systems (Lamb, 2011; McGrath, 2012). The following section will discuss the organisation of technical and vocational education on the African continent, using Ghana as an example.

2.7 Vocational education in Ghana

In Ghana, vocational education and training is characterised as formal, non-formal and informal. The formal system comprises education that takes place within the formal education system and results in a recognised qualification; the non-formal takes place between friends and families and results in “significant learning” and the acquisition of skills (McGrath, 2005; Oketch, 2007). However, non-formal training is not accredited through either work experience or on-the-job training, and therefore limits the mobility of trainees to the informal economy. Informal vocational training, on the other hand, is offered on the basis of family ties, with operations showing creativity but lacking the necessary technical knowledge related to the skills and capital required to expand enterprises. Nevertheless, informal vocational training provides the skills and competencies required for self-employment in the informal sector; it is widespread in the informal economy and is used to pass skills informally from experienced workers to new entrants. In poor societies these apprenticeships are purely workplace based with no access to educational institutions (Brewer, 2013). However, this type of training could be formalised by taking government sanctioned standardised tests that result in certification and the formalisation of the skills and knowledge (Oketch, 2007).

Vocational education and training in Ghana is plagued by significant challenges such as a mismatch between acquired skills and market needs, concerns over the quality of training, the training environment, and negative attitudes of learners to the training, as well as public perceptions of the TVET system (Palmer, 2007).

The Ghanaian TVET system is mainly demand driven with large numbers of learners enrolled in the system without any prospects for employment or careers (Aryeetey, Doh, & Andoh, 2011; Palmer, 2007). Some authors also submit that the system is irrelevant because no needs assessments are undertaken before the inception of programmes, resulting in programmes that are not based on labour market needs, and therefore do not relate to any available employment opportunities (Kraak, 2014).

Palmer (2007) also asserts that TVET courses in Ghana are mostly based on out-dated curricula with skills being poorly adapted to current market needs, and further contends that many young people in Ghana enrol into TVET programmes for the wrong reasons. He has found that learners enrol in TVET colleges when they fail to meet the requirements for academic education, as TVET colleges have low entry barriers (Palmer, 2007).

2.8 TVET training in South Africa

TVET college enrolments have been growing in South Africa despite evidence of difficulties in securing employment. This section will present an overview of the technical and vocational education and training landscape in South Africa, narrating the developments that led to the current state. The section will commence with a historical overview of technical training from the apprenticeship system that was mainly workplace based, and strongly supported by technical colleges, through the evolution of the technical colleges into further education and training colleges (FET), and the advent of fulltime college-based training programmes, through to the current fulltime National Certificate Vocational [NC(V)] offered by Technical and Vocational Education and Training (TVET) Colleges.

The section will then introduce the organisation of training in the South African construction industry, and the industry changes that resulted in the breakdown of the provision of workplace-based learning, a core component of technical training. To contextualise issues of career aspirations and how they are met by industry, the chapter will conclude by commenting on the employability of learners coming out of these various training systems, and their potential career progression in industry.

2.8.1 Apprenticeship training in South Africa

Historically, technical training was offered through employer-led apprenticeships, both formal and informal. Apprenticeships enable learners to acquire a range of skills required in the modern world of work by combining in-class and workplace training (Brewer, 2013). Formal apprenticeships are a structured and regulated national training pathway – usually regulated by national legislation – which comprises a training contract that specifies the duration of the training, the type of training

programme including core skills, entitlement to on-the-job training and assessment procedures, as well as the final exit-level certification.

In the formal apprenticeship (Section 13) system, the apprentice was indentured/contracted to an employer for a period of time and received practical skills training in the workplace. The educational components were historically covered by technical colleges in block release sessions. The apprentice registered with a technical college and attended part-time classes at a college, as either evening lectures or block release every three months. A significant part of the theoretical training took place in public technical colleges, the predecessors of the current TVET colleges.

The apprenticeship contract was usually of three years' duration and on completion of the training contract the apprentice undertook a national trade test at the Institute for National Development of Learnerships Employment Skills and Labour Assessments (INDLELA) to become an artisan. In the past, the curriculum for formal apprenticeships was influenced by employers, who had a significant influence on what was taught at college, the workplace training component, as well as the quality and content of the trade test. Admittance to an apprenticeship programme was dependent on learners securing fulltime employment for the duration of the apprenticeship contract to facilitate access to workplace training. However, this apprenticeship training system could only be sustained in industries where employers had continuous work streams that enabled them to employ apprentices on a fulltime basis for the duration of the apprenticeship.

The informal Section 28 apprenticeships, differs from the formal ones in that, a Section 28 apprentice does not sign a training agreement. They undertake their training with an employer and when they consider it appropriate, present to INDLELA or a trade test centre for a formal trade test. In these cases the learner writes a pre-qualification test and on successful completion of the written test, is deemed competent to take a practical trade test. The contribution of these informal apprenticeships to the national skills development strategy was recognised in the review of the NSDS III, where it is stated that

"… many of the employed will not register for an apprenticeship programme but will apply to write the trade test as a section 28 apprentice based on sufficient prior learning and work experience." Kruss et al, (2012; Page 12).

Apprenticeships are considered an effective means of providing skills in parallel to schools (Adams, 2011). They are also widespread in the informal economy where they are used as a way of passing on skills informally from experienced workers to new entrants. In poorer societies, and among informal traders, these apprenticeships are purely workplace based with no access to educational institutions (Adams, 2011; Pongo et al., 2014). The apprentice learns by looking over the shoulder of the more experienced worker, imitating what they do and acquiring the skills of the trade in this fashion. The apprentice is also inducted into the values (Fien & Wilson, 2005), norms and culture of the occupation through imitation and by keeping the company of experienced workers (Adams, 2011; Brewer, 2013). In these settings, the apprenticeship agreements are oral and embedded in societal norms and values (Brewer, 2013), and are a very significant contributor to obtaining employment and job-specific skills (Oketch, 2007). The successful implementation of apprenticeships is, according to Glover and Bilginsoy (2005), dependent on the inclusion of unions in the training, especially for marginalised communities where there is greater competition for employment opportunities.

In 2009, Hartl reported that some African governments were trying to formalise the traditional apprenticeship skills development model into national qualification frameworks with the support of the donor community, for example the International Labour Organisation (ILO), Danida and the European Commission. Despite these interventions, the most cited problems with informal apprenticeships, as presented by Brewer (2013), are long working hours, unsafe and unregulated working conditions, low or no allowances or wages, little or no social protection in the case of accidents or illnesses, and strong gender imbalances. Despite the reported success of apprenticeships, McGrath (2012) observes that national systems for measuring vocational education and training have only concentrated on the formal, institution-based learning programmes to the exclusion of informal apprenticeships, which is, sadly, where most learning takes place. It is argued that, globally, by excluding

informal apprenticeships, vocational education and training measurement data ignore the reality of vocational learning (McGrath, 2012).

2.8.2 Construction apprenticeships in South Africa

The construction industry is comprised of two distinct sectors, namely, civil engineering and building construction, both sector with their own specific trades and training pathways. Apprenticeship training was regarded as most suited to the building trades of bricklaying, electrician, plumbers, and so forth, as it produced all-round skills for the industry. In the construction industry apprenticeships were used to develop artisanal skills while the development of semi-skilled workers was conducted informally by skilled workers imparting skills to their employees through direct observation. This form of training was mostly based on personal relationships.

Increasing infrastructure investments and the need to provide employment beyond immediate social relationship resulted in the formalisation of training contracts and the introduction of formal trade qualifications. The apprentice was historically contracted to an employer on a fulltime basis and received workplace training under the supervision of a qualified tradesman by “looking over their shoulder” while learning the tricks of the trade. Trade theory was taught on a part-time basis with the apprentices attending college after work or block release with the employers’ permission. The trade theory was organised into trimester National Accredited Technical Education Diploma (NATED) (N – courses), which were offered by technical colleges managed by the different departments of education or Manpower Training in the historical South African homelands (Department of Education, n.d.).

Changes in economic conditions and decreased investments in infrastructure led to a decline in the number of fulltime apprenticeship opportunities offered by employers. These adverse economic conditions were further compounded by changes in the structure of work organisation in the construction and building industries to a construction management system of delivery, and the proliferation of labour only subcontractors (Choudhry et al., 2012; Ting-Ya Hsieh (1998); Yoke-Lian et al., 2012). South Africa was also affected by the same trends, with major construction companies only retaining a core of highly specialised supervisory skills

and subcontracting all the trades to small- scale, specialist subcontractors (cidb, 2015).

The changes in the South African construction contracting model from traditional forms to the predominant use of labour only subcontractors and project-based employment reduced the number of positions available for fulltime indentured apprentices (McGrath, 2010). This influenced the provision and quality of training in the industry, leading to the proliferation of non-indentured (private candidates) joining apprenticeship training schemes. The growth in these fulltime, private candidates not attached to specific employers saw the emergence of a mismatch between college offerings and industry needs (McGrath, 2010), as well as a drop in the quality of training and employment readiness within the construction industry. The skills mismatch resulted in an increase in college-educated learners who could not get workplace training in order to meet their compulsory training requirements and undergo their trade test. This was further compounded by an increase in the number of youth demanding post-school education opportunities that would enable them to take up intermediate skills positions in industry. The government responded by revising the vocational education and training policy to enable increased enrolments together with better participation by employers.

The technical and vocational training system, including the provision of apprenticeships, was then radically changed by the introduction of the Skills Development Act (Act no 97 of 1998). The Act provided for the establishment of the Sector Education and Training Authorities (SETAs) and the introduction of the learnership training system. The implementation and consequences of the learnership training system in the construction industry and its impact on learners aspiring to join the industry are described below.

2.8.3 The SETA learnerships

In 1998, the newly elected democratic government of South Africa promulgated the Skills Development Act (Act no 97 of 1998) to respond to the increased numbers of apprenticeship candidates who lacked workplace experience and the low levels of training in all industries, as well as to attempt to bring small and medium enterprises into the training pipeline. The Act introduced the SETAs, as well as the learnership

system for the training of artisans. Under this Act artisan, training took place through a tripartite agreement between trainees, called learners, a training provider – responsible for the theoretical input – and employers, who provided workplace training. The learnership still retained the workplace learning component from the traditional apprenticeship with refinements that included a cooperative curriculum development process between industry and training providers, as well as the stipulated notional hours required for each component of the programme. The learner would then be expected to undergo at least three years of continuous post-qualification work experience in their respective trades before they could take a trade test and qualify as artisans (Department of Labour, 1998).

In terms of the Skills Development Act, employers with an annual payroll of more than five hundred thousand rand (R500 000) are required to pay 1% (one percent) of their payroll as a skills development levy. The skills levies are collected by the South African Revenue Services (SARS) and paid over to the SETAs and the National Skills Fund to support training and skills development. According to the provisions of the Act, levy-paying companies register with their respective SETAs and can access grants to facilitate training in their companies (DoL, 1998).

Learnerships were designed to integrate trade theory with workplace-based components to produce work-ready learners. They were also intended to provide training and skills development opportunities for employed workers to grow their theoretical and practical capabilities and thus deepen the skills base of the South African economy, as well as providing a pool of skilled personnel by training unemployed learners and preparing them to join the workforce (Smith, Jennings, & Solanki, 2005).

The learnership contract was a tripartite partnership between the learner, employer and a training provider. It was further meant to facilitate industry involvement in curriculum and skills development in general. Learnerships were further planned to support the provision of intermediate, vocational skills and competencies for those in employment while at the same time meeting the training needs of vulnerable groups such as the youth, women and those employed in the informal sector (DoL, 1999). The learnership training method was regarded as an alternative pathway for

providing industry with skilled personnel at the intermediate levels that was more inclusive than the outdated apprenticeships (DoL, 1999).

SETA-driven training has been shown to be an important route for upgrading the skills of employed people and improving the employability of the unemployed (Smith et al., 2005), as well as for increasing productivity and competitiveness between employers (Grewe, Ukpere & Rust 2012). The promise of fulltime employment with the host employer is seen as a strong motivator for unemployed learners to participate in learnerships (Grewe et al., 2012). However, critics of the learnerships maintain that the system is biased towards employment creation to meet the needs of the vulnerable and therefore concentrated on programmes offering low-level skills at NQF level 4 or below (Visser & Kruss, 2009). This, therefore, means the learnerships' contribution to the development of high-level intermediate skills has been found to be deficient.

In the construction industry, the core of the technical work is undertaken by small, micro and medium enterprise (SMME) subcontractors. Unfortunately, the annual turnover of these SMME is too low to meet the skills levy payment threshold, and they are therefore not empowered to apply for the skills development grants from the SETA. This constrains vocational training, as these are the very companies that utilise the vocational skills and have the workplaces to provide the comprehensive practical workplace components of the training programmes.

The essential subcontracting nature of the construction industry presented further problems to the implementation of the SETA learnerships. The biggest challenge was the requirement that learners contract with an employer for the duration of the learning contract in order to access workplace training, and the requirement for completion of the workplace learning programme before awarding a certificate of completion. According to the learnership training contract (DoL, 2003), the SETA has to accredit workplaces deemed suitable for training purposes before learners can be placed on the site for practical workplace training. This is not always feasible in construction as construction workplaces are projects that are only available for the duration of the work package, and in most cases, by the time the SETA conducts the training site accreditation visit, the contractor has completed the work package relevant to the learnership programme.

Additionally, the subcontractor is only contracted for the duration of his work package and, even where desirable, cannot contract with a learner for the full duration of the learnership. Furthermore, contractors recruit and employ workers on limited duration contracts as and when they are needed on the project. This complicates construction learnership training as it is difficult for contractors to identify the employed or unemployed learners in their training applications to the SETA, an important precondition in the learnership training system. These shortcomings of the system left many learners in the pipeline, unable to complete their training requirements (CETA, personal communication).

Badat (2010) also attributes the breakdown of the artisan training system to poor coordination at government level. Until 2009, the theoretical component of training was a competence of the Department of Education through the colleges, with the practical workplace training being governed by the Department of Labour. It has been argued that this dual responsibility resulted in wastage in skills development because of poor coordination between the theory developed at the Department of Education and the workplace requirements that were a Department of Labour competence – this at a time when there was an increase in the number of young people completing the National Senior Certificate and not having adequate post-school options (Akoojee, 2009; Badat, 2010; Marock, 2010; McGrath, 2012).

To address the challenges that had been experienced, and to facilitate a more structured training pipeline, the government made significant changes to the organisation of the technical and vocational training system. In 2009, skills development was relocated from the Department of Labour to the newly established Department of Higher Education and Training (DHET). The implication of these changes and its impact on construction skills provision is discussed in the next section.

2.8.4 The National Certificate Vocational [NC(V)]

The National Certificate Vocational [NC(V)] programme was established in terms of the Continuing Education and Training Act 16 of 2006. It is a qualification which provides technical and vocational education to learners who have completed Grade 9 of the basic education level. It is composed of three autonomous educational levels

that lead to the full qualifications, namely, the NC(V) Levels 2, 3 and 4, which are on the National Qualification Framework (NQF) levels 2, 3 and 4 and equivalent to the school level Grades 10, 11 and 12 respectively. The NC(V) qualification is provided as a vocational alternative to the academic school curriculum, or to prepare learners for immediate transition to the workplace.

2.9 Introduction of Technical Vocational and Education (TVET) Colleges

Prior to 2009, the Department of Education (DoE) offered supply side educational programmes to support employer-led Sector Education and Training Authorities (SETAs) that were reporting to the Department of Labour (DoL). The TVET delivery model was based on very weak institutional arrangements between the Department of Education (DoE) and Department of Labour (DoL) which had a significant effect on the governance of the colleges and the employability of college graduates.

In 2009, the government responded to the failure of skills development by merging the technical and vocational training units of the Departments of Education and Labour under the newly proclaimed Department of Higher Education and Training (DHET). Within DHET, artisan training was placed in a newly formed directorate of Technical and Vocational Education and Training Colleges branch, which was responsible for the SETAs and the TVET colleges. The new skills branch was responsible for the implementation of a revamped National Certificate Vocational [NC(V)] qualification at NQF levels 2 to 4 to replace the old NATED (N) courses that were used in apprenticeships. TVET colleges were formed as a result of the reorganisation and mergers of further education and training (FET) colleges. These colleges mainly offer qualifications at the National Qualification Framework (NQF) levels 2 to 4, with very few offering NQF level 5 programmes.

The TVET colleges were designed with a dual mandate, namely, to provide post-school youth with foundational knowledge in vocational disciplines that will enable them to enter higher education and access an academic qualification, or to enter the workplace to be trained to higher levels of specialisation through learning pathways such as apprenticeships and learnerships. The TVET curriculum was meant to accommodate learners who could not immediately proceed to higher education, by offering a technical component to the NQF level 4 National Senior Certificate (NSC).

Additionally, TVET colleges can offer school leavers theoretical components of occupational qualifications and prepare them for trade testing in recognised trades and occupations (DHET, 2013).

The FET Act promulgated in 1998 prepared the ground for the transformation of the FET college landscape that began in earnest in 2000. This transformation resulted in the merger of the FET colleges from 152 autonomous colleges to fifty (50) TVET colleges with multiple campus and about 264 learning sites (DHET 2006). This was followed by an extensive period of recapitalisation and curriculum development. The new curriculum resulted in the national certificate vocational NC(V) qualification in 2006. The NC(V) was developed to address issues of relevance and quality of training in the TVET colleges, and focuses on fourteen subfields that are regarded as priority skills areas in the national economy, such as business, engineering and leisure studies. The NC(V) civil engineering and building construction qualification forms part of the new TVET qualifications that were introduced to the market in 2007.

2.9.1 TVET college governance

The FET College Act No 16 of 2006 gives colleges governance autonomy which includes the powers to set-up governing councils and directly employ staff. The appointment of senior management staff is, however, still the responsibility of the Department of Higher Education and Training (DHET). In many colleges, the post re-structuring period was followed by a phase of institutional stabilisation, including the appointment of staff and the implementation of the new NC(V) curriculum.

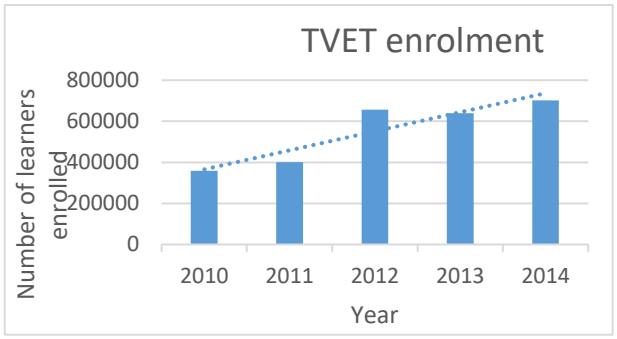


Figure 2.1: Number of learners enrolled in public TVET colleges

Source: DHET (2017)

TVET colleges are funded by the public with the Minister of Higher Education and Training responsible for the norms and standards for funding. According to these funding norms and standards, college funding is dependent on learner performance and class attendance and, by controlling the funding stream, DHET effectively controls the colleges. Following these changes, enrolments in colleges expanded from a very low base to just under 800 000 learners in 2014 (Figure 2.1).

As already mentioned, TVET student funding is based on the norms and standards developed by the DHET. Overall, funding is dependent on the types of programme offered at a college, student enrolments, the cost of programme delivery, including the entire infrastructure required for delivering the programme, as well as an assessment of how efficient the college is in resource utilisation.

The DHET provides subsidies to all post-school institutions with higher education (universities and universities of technology) receiving the bulk of the funding (75.7%), while TVET colleges get 18.2% in the 2014/15 financial year (DHET 2017). DHET is also responsible for the administration of the National Student Financial Aid Scheme (NSFAS) that was established in terms of the National Student Financial Aid Scheme Act 56 of 1999 to provide loans and bursaries to eligible learners in public institutions. According to the Act, eligible is defined as an inability to self-finance studies. Learners studying at higher education and TVET colleges therefore receive government supported loans and bursaries to undertake their studies in public institutions.

The extension of the NSFAS scheme to the TVET college sector, together with the introduction of the NC(V) qualification, has resulted in significant growth in enrolments at TVET colleges (Figure 2.1). It is also important to note that the proportion of TVET learners benefiting from the NSFAS bursary has seen a significant increase from a low base of 115 000 learners in 2011 to more than 228 000 in 2014.

Table 65: Number of students who have received loans/bursaries from the NSFAS and the amount provided, by sub-sector, from 2011 to 2014

Year	Public HEIs		TVET Colleges		Total		Percentage change on amount provided
	Number of students	Amount provided	Number of students	Amount provided	Number of students	Amount provided	
2011	173 927	4 561 359 562	114 971	1 116 767 169	288 898	5 678 126 731	55
2012	194 504	5 871 489 880	188 182	1 822 497 265	382 686	7 693 987 145	35.5
2013	194 923	6 729 069 970	220 978	1 953 253 361	415 901	8 682 323 331	12.8
2014	186 150	6 969 940 822	228 642	1 991 487 809	414 792	8 961 428 631	3.2

Sources:
Statistics on Post-School Education and Training in South Africa (2011, 2012, 2013).
NSFAS Annual Reports (2012/13; 2013/14; 2014/15).
Note 1: The term "loans" refers to a loan granted to a person by the NSFAS to enable the person to defray the costs connected with his or her education at a designated HEI, and those connected with the board and lodging of that person for purposes of attending the institution.
Note 2: The term "bursaries" refers to that part of the loan granted to a person by the NSFAS, which the person is not required to pay back on compliance with the criteria and conditions set in the written agreement.

Figure 2.2: NSFAS beneficiaries enrolled in HEI and TVET colleges

Source: DHET (2017)

Figure 2.2 above shows that despite the rapid growth in the number of TVET learners receiving NSFAS bursaries, the financial contribution to this sector is still significantly lower than that to universities (R1.99 bn vs. R6.97 bn).

In view of the growth in government funding to post-school institutions, it is therefore important to understand the impact of the bursary on learners' decisions to enrol at post-school institutions, especially those learners who have successfully completed the NSC and qualify to enter degree and diploma programmes.

2.9.2 Problems in the TVET college sector

The high numbers of youth not in employment, education or training (NEET) in the country create a pressure point for the college system. Efforts are underway to increase TVET college enrolment by attracting NEET youth who have at least completed Grade 9 of the schooling system. Judging from the dual mandate of the NC(V), which is to provide continuing education for learners wishing to continue to higher education and to prepare youth for employability, this then begs the question of what the focus of TVET education should be. It is also important to question the relationship between TVET colleges and the world of work, the capacity of the colleges to increase enrolments while at the same time maintaining the required quality and throughput, and, the capacity of the TVET colleges to achieve all these objectives (Gewer 2010).

The TVET college sector is also fraught with capacity problems. Studies have shown a lack of lecturing capacity, as well as a skills mismatch between the lecturers and what they are supposed to teach (Adams, 2011). NC(V) lecturers were also not prepared for the many learners who joined the NC(V) programme because of a failure to cope with academic programmes at school (Papier et al., 2012). For a number of reasons, The NC(V) colleges have high dropout and failure rates (DHET, 2017) including, but not limited to, the high cognitive and assessment demands of the programme (Papier et al., 2012).

Further problems identified with TVET colleges is that because of the flexible enrolment requirements that range from Grade 9 to Grade 12, lecturers have to deal with learners with greatly varying levels of maturity, aptitude and knowledge. This is compounded by the fact that the learners have different learning challenges that require individual attention; however, because of the large class sizes and capacity of the lecturers, they “fall between the cracks”.

Mabale (2013) has further shown that NC(V) lecturers have shortcomings regarding teaching methodologies, are not trained to facilitate adult and multicultural learning, have poor student and classroom management, and do not have adequate leadership capabilities. This exacerbates the problem of dealing with learners with multiple levels of maturity and learning capabilities.

Adams (2011) counsels that the relevance of programme offerings can be improved by introducing short-term industry placements for college lecturers to learn the latest industrial practices and getting industry representatives to give guest lectures at colleges. This, he argues, would give college lecturers the capacity required to offer better quality teaching that is responsive to industry needs. Papier et al. (2012) contend that the South African college educator development system is very weak and small, and that policies on lecturer development within the system are required. They also suggest that universities should play a more significant role in the development of college lecturers.

2.9.3 The NC(V) curriculum

The role of the NC(V) in preparing learners for the world of work has been an issue of contention since it was first launched in 2006. The NC(V) is an NQF level 4

qualification that is regarded as an alternative route to the national senior certificate (NSC), the exit-level examination that learners take on completion of 12 compulsory years of schooling. The NC(V), on the other hand, is offered at TVET colleges where, in alignment with the mission of the colleges, it is expected to either enable students to acquire the necessary knowledge and skills, applied competence and understanding required for employment in a particular occupation, trade, or class of occupations and trades, or to provide entrance to higher education (DHET, 2013).

There are different views on the usefulness of the NC(V) qualification in different economic sectors. Some sectors regard it as capable of providing adequate knowledge but with practical components needing to be reinforced in the workplace, whereas other sectors such as construction, are totally dissatisfied with the quality of NC(V) graduates (Gewer, 2010). To respond to this dissatisfaction, employer bodies in the civil engineering industry financed the realignment of the NC(V) curriculum with industry needs and practice through the National Business Initiative (NBI).

The construction industry contends that NC(V) programme is not aligned to industry skills requirements and therefore many graduates fail to get work placement (Gewer 2010). Despite these industry concerns enrolments in the NC(V) have grown from 26 000 in 2007 to more than 150 000 in 2014 (DHET, 2017).

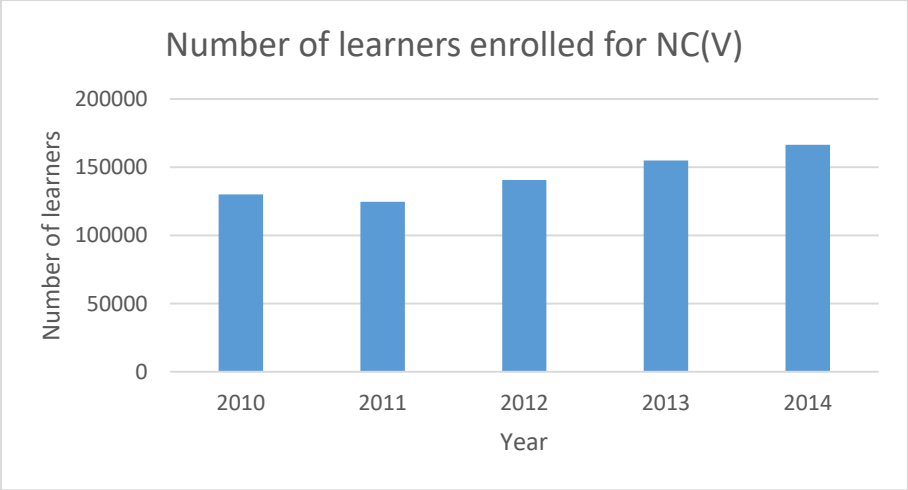


Figure 2.3: Number of learners enrolled in the NC(V) programme at public TVET colleges

Source: DHET (2017)

Despite the high enrolments very few learners manage to complete the programme in the regulated three years. For example, of the 26 000 enrolled on level 2 in 2007

only 4 991 enrolled for level 4 examinations in 2009. Moreover, the NC(V) programme has a very poor pass rate with only 30.57% of the learners passing the exams in 2014. The performance of NC (V) learners enrolled in the civil engineering and building construction programme in TVET colleges is shown in figure 2.4 below[1].

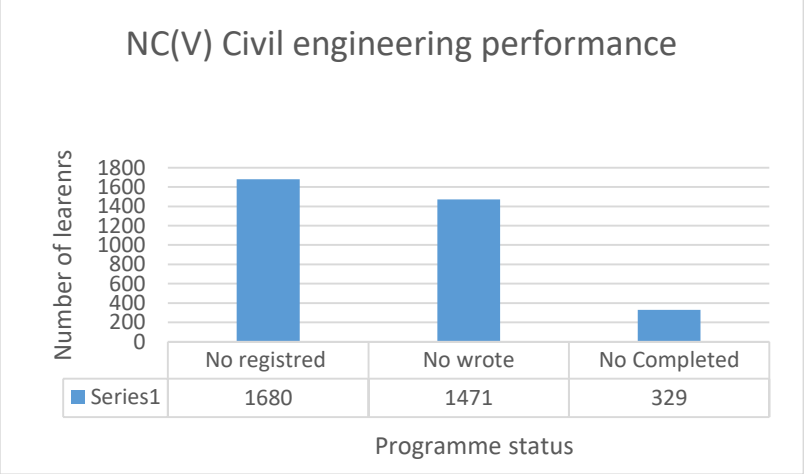


Figure 2.4: NC(V) civil engineering learners' performance 2014

Figure 2.4 above presents the pass rate of the NC(V) civil engineering and building construction programme, which shows that only 19.58% of the 1, 680 learners who enrolled for the NC(V) Level 4 civil engineering and building construction qualification in 2014 successfully completed their programme (329 learners).

When commenting on efforts to assess the impact and effectiveness of NC(V) programmes, Gewer (2010) advocates a multi-level framework. He suggests investigating and documenting factors relating to college governance, enrolment in the college programme, including learner recruitment and entry requirements, output measures in terms of pass rates, and throughputs and outcomes as defined by the absorption rate of graduates in the industry. He further recommends that programme impact can be defined in terms of the placement of learners in industry, increased enrolments of TVET graduates in higher education and the quality of TVET-produced skilled people entering the market. He concludes that the lack of data on each of these factors restricts empirically based policy development and planning in the TVET sector.

[1] Source: Statistics on Post-School Education and Training in South Africa (2010 - 2014)

With the decline in the provision of apprenticeships, college–industry relationships started to change. As outlined in a previous section, traditional apprenticeships involved learners attending theory training at colleges on a block-release basis. This provided for close working relationships between industry and colleges, with colleges influencing the content of what was taught at colleges. The decrease in apprenticeship enrolments resulted from the introduction of the SETA learnerships and the privatisation of major state enterprises such as ESKOM,[2] ISCOR[3] and TRANSNET,[4] that employed the majority of artisans in the engineering sector. The drive to re-establish functional college–industry partnerships has had limited success; moreover, limited data availability limits the assessment of the impact of these partnerships.

College–industry partnerships are further constrained by industry's negative perceptions of the college's ability to produce good graduates, as well as the lack of appropriately qualified staff at the colleges who are both credible and capable enough to interact with industry on equal terms (Gewer 2010). There have been intermediaries that have stepped in to facilitate these interactions, for example in the construction industry the Construction Industry Partnership Programme of the National Business Initiative (NBI)[5] and the Swiss South African Cooperative Initiative (SSACI),[6] as well as the Construction Industry Development Board (cidb) in partnership with the Skills Development unit of DHET.[7]

Although the NC(V) programme was designed to include extensive practical components, these are not always implemented in colleges that lack competent staff or facilities, resulting in learners exiting colleges without the requisite practical skills (Altman & Marock, 2011). Upon graduation learners who aspire to become

[2] ESKOM – South Africa's state owned national electricity company.
[3] ISKOR – Former South African state-owned steel company that was privatized and sold to ArcelorMittal.
[4] TRANSNET – South African state-owned rail, port and pipeline company.
[5] The National Business Initiative is a private sector initiative to support government–industry partnerships. It has a work stream dedicated to skills development in the construction industry.
[6] SSACI is a Swiss government funded partnership to support the development of artisans in South Africa through, among other things, curriculum improvement and the introduction of the dual apprenticeship model.
[7] DHET launched a Special Projects Unit (SPU) to develop and implement skills plan which would help skill South Africans for and through the Strategic Infrastructure Programmes. This unit works in partnership with infrastructure departments to leverage skills development during the implementation of major infrastructure projects.

construction trade artisans are expected to undertake at least 18 months of practical workplace experience before they qualify to register for a trade test.

The NC(V) was also considered as a catch-all qualification that would facilitate an articulation pathway to higher education for learners who had completed a vocational stream and wanted to articulate into academic studies. This has, however, not proven able to assist learners, as universities and universities of technology still require an NSC pass equivalent for learners admitted through the NC(V) route.[8]

It has, however, been shown that learners who have completed the NC(V) programme in the construction trades find it very difficult to find employment in the industry for a number of reasons which, according to Kraak (2014), Altman & Marock (2011) and Papier et al. (2012) include, a lack of understanding of the new qualification by employers who were more familiar with the NATED programme; the low level of practical training offered by the programme that renders them employment ready; poor curriculum content of the NC(V) programme which leads to graduates not meeting the immediate production needs of the industry; lack of marketing of the NC(V) programme by the government resulting in learners not being aware of their competitive advantage over other technically trained cadres; industry not being aware of the competencies and capabilities of NC(V) graduates; and lastly the perception of poor quality of the NC(V) programme by employers.

Papier et al. (2012) contend that the NC(V) should be more strongly aligned with the vocational and skills development mandate of the DHET, and not concentrate of offering general education for articulation into higher education. This in contrast to Oketch's (2007) proposition that Francophone Africa provide vocational training with a high general education content to facilitate articulation into academic education. Papier et al. (2012) suggest that one of the shortcomings of the NC(V) programme is its lack of emphasis on work-readiness and its greater focus on academic progression. The shortcomings of the NC(V) will be discussed in detail in the next section.

[8] Admission requirements to engineering programmes at the Nelson Mandela Metropolitan University. These pertain to most universities, even though there are differences between universities.

In the past, employers, especially construction industry employers, were used to the old qualifications that catered specifically for industry needs and trained workers to be the best-fit for workplaces. This was compounded by longstanding relationships between employer associations and specific colleges and training providers. Traditionally, there were close relationships between the employer and the training institution with employers in most cases dictating the type and intensity of training offered by the institution, and institutions training for target employers.

The introduction of the construction NC(V) qualification was expected to produce large numbers of technically competent youth, with a significant supervisory component. It has, however, been shown that without the necessary workplace experience, this qualification does not meet industry requirements and graduates are therefore not employable. Industry has also criticised the limited industry involvement in the development of the NC(V) curricula and has stated that it does not meet their operational needs (Kruss & Kraak, 2002; McGrath, 2010). This has resulted in many young people, after having successfully completed the NC(V) qualification, being unable to find employment in the industry, or to articulate to higher education to continue with construction-related studies.

2.9.4 Conclusion

South African employers continue to complain about the lack of intermediate skills and the quality of TVET college education. In spite of this, very little research had been undertaken to study the career aspirations and destinations of learners enrolling at TVET colleges. The few studies that have been undertaken in construction education were conducted from the perspective of the employers to characterise scarce and critical skills in the industry (Lawless, 2007). There are no studies that have specifically looked at the career aspirations of TVET construction learners.

The NC(V) qualification was intended as a catch-all qualification for the provision of technical and vocational skills, and to facilitate the articulation of learners into higher education. It has, however, proven to be very difficult for the construction industry to absorb learners graduating from NC(V) programmes, with most employers indicating that they do not know what the learners are capable of doing and that the learners'

broad scope of education does not lead to a single focus within the industry. Consequently, many NC(V) graduates end up redirecting their studies to other programmes, or those who do stay in the construction industry undergo further retraining in learnerships or company-specific skills programmes.

The poor absorption of construction TVET college graduates by the industry, despite the expressed need for intermediate skills, motivated me to study the career aspirations of learners who enter the NC(V) programme at TVET colleges. This study seeks to investigate the learners' career aspirations and how they are developed at TVET colleges, as well as the reasons they struggle to get employment after exiting from the colleges. The study will contribute to a better understanding of construction learners' aspirations and expectations and how TVET colleges can better prepare them for entry-level positions in the construction industry.

3. CHAPTER 3 CONCEPTUAL FRAMEWORK

3.1 Introduction

Career guidance and development deals with issues of the search for life purpose and meaning. Research on career guidance has looked at how individuals investigate life and work roles, and attempts by nation states to address the problems of unemployment and employability. There are many theories that have been formulated to address issues of career guidance and development and these have not acquired universal validity and applicability as career development is shaped by both cultural issues and local conditions. The five main theories that have been used globally to study career guidance and development are the Theory of Work Adjustment, Super's Theory of Self-concept and Career Development, Holland's Theory of Vocational Personalities in Work Environment's, the Social Cognitive Careers Theory and Gottfredson's Theory of Circumscription and Compromise (Leung, 2008). This chapter provides a brief description of each of the major theories of career guidance to contextualise the choice of the theory used in this study.

3.1.1 The Theory of Work Adjustment

The Theory 0f Work Adjustments (TWA) describes the relationship of an individual to his or her work environment. It seeks to explain career development and satisfaction in terms of person-environment interactions, and it offers career guidance professionals a mechanism to assist individuals with career choice and adjustment concerns. TWA is concerned with an individual's ability to do the work well once an occupation has been chosen. It further suggests that helping individuals choose a career is as important as helping them succeed in the chosen career.

Work adjustments are assessed using a battery of tests that evaluate an individual's abilities, values, personality traits and interests to determine their potential suitability for given careers and environments. This theory is applicable to adults wishing to make career changes, those struggling with adjustments in current occupations and pensioners wishing to investigate new careers after retirement.

3.1.2 Super's theory of self-concept and career development

Super's Theory of Self-concept and Career Development (Super, 1983) places emphasis on career development as a process of self-concept implementation and that in making career decision, people are expressing their self-concept. Super argues that occupational preferences and competencies, along with an individual's life situations, all change with time and experience. As such, career development is lifelong. He describes five stages of career development that correspond with different life stages namely, growth between birth to 14 years of age, exploration between 15 and 24 years of age, the establishment stage between 25 and 44 years of age, followed by career maintenance at ages 45 to 64 and finally career decline beyond 65 years of age. Super's theory does not include an emphasis of the influence of individual interests, personality type and individual needs on career development and decision making.

3.1.3 Holland's theory of vocational personalities in work environments

Holland's Theory of Vocational Personalities in Work Environments characterises people and work environments into six different types namely, Realistic, Investigative, Artistic, Social, Enterprising and Conventional (RIASEC). Holland posits that people's vocational identity comprises of two or more of these vocational personalities. Further where there is a correspondence between the work environment and the individual vocational identity then there is a greater chance of job satisfaction.

3.1.4 Social cognitive career theory

Lent, Brown and Hackett's (1994) Social Cognitive Career Theory (SCCT) was developed to explain how individuals form career interests, set vocational goals, persist in work environments, and attain job satisfaction. It is grounded in Bandura's (1986) social cognitive theory and explores how career and academic interests mature, how career choices are developed, and how these choices are turned into action through a focus on self-efficacy, outcome expectations, and goals (Lent et al.,

1994). SCCT suggests that career interests are regulated by self-efficacy and outcome expectations. This implies that people sustain activities that give them a sense of personal competence and positive outcomes

In SCCT factors such as gender, ethnicity, age, socioeconomic status, or family constraints are perceived to create negative outcome expectations, even when people have had previous success in the given area (Lent et al., 1994). Both SCCT and TWA have been shown to apply to working adults, especially where they are used to assess work satisfaction (Foley and Lytle, 2015).

This study investigated the career aspirations of learners enrolling for the national certificate vocational [NC(V)] programme at technical and vocational education and training (TVET) colleges. The study uses a conceptual model derived from Gottfredson's theory of circumscription and compromise (1981). This chapter explores the theory and delineates its applicability to my study population. In this chapter, I will describe the theory and how it defines the stages of career development leading up to career decision making in adolescence. To conceptualise career decision making in adolescent learners about to enrol for post-school education, I will describe career aspirations and how they are developed and expressed in children. This will involve discussing the career compromise process and exploring the factors that have an impact on learners enrolling in post-school education, such as construction programmes at TVET colleges. I investigate the effect of environment and socioeconomic status on the development of career aspirations, as well as the way these aspirations are expressed in decision making and how they are maintained during the learners' stay at the college.

3.2 What are career aspirations?

Career aspirations have been described as vocational possibilities or work preferences given ideal conditions (Metz, Fouad, & Ihle-Helledy, 2009). They are what one would ideally like one's career to be. Hou and Leung (2011) define career aspirations as one's evolving goals, ideals and intentions towards the future that serve as a guide to better behaviour. They are an indication of what a person would like to do, without necessarily reflecting subsequent career destination (Metz et al.,

2009). Career aspirations, also referred to as occupational aspirations by Howard et al. (2011), and are further described as an expression of individual ideals and occupational expectations, realistic or likely career goals.

McCracken and Barcinas (1991) expand on the definition of occupational aspirations by including occupational factors such as the levels of job expectations (the position one expects to occupy), job aspirations (what one aspires to), expected income, surety of employment, age of occupational choice and choice of military service plans. They state that occupational aspirations are dependent on the student's life experience and in turn influence the student's educational aspirations. MacBrayne (1987) sees the concept as broader; he defines career aspirations as an individual's desire to obtain a status object or goal such as a particular occupation or level of education.

Career aspirations are not static. They are developed through a process of circumscription where one eliminates career choices that are not congruent with one's self-image and requirements (Gottfredson, 1981). Gottfredson further shows that career aspirations are jointly dependent on learners' interests and self-concept and their accessibility of the chosen career. She concludes that students aspire to occupations that correlate strongly to their concept of self, such as who they are, what they value and what they wish to be in the world (Gottfredson, 1981).

According to McCracken and Barcinas (1991), educational aspirations involve a desire to undertake advanced education, the type of advanced education planned, and the planned time when the education commences. They have been shown to be intricately linked to occupational aspirations, with learners with higher occupational aspirations staying longer in school (Benheke, Piercy, & Divesi, 2004), and performing better that those with lower aspirations (Hou & Leung, 2011). Career or occupational aspirations influence educational aspirations and make adolescents appreciate the relationship between their desired occupation and the educational path required to reach the occupation. Kroon and Meyer (2001) defines occupational aspirations as careers that students expect to achieve in the future, while McNulty and Borgen (1998) describe them as the occupations that people are most likely to enter. They are a realistic assessment of likely career goals that young people are most likely to reach. Howard et al. (2011) describe career expectations as planned

occupational trajectories as opposed to occupational aspirations that are desired but not necessarily planned for.

In differentiating between occupational aspirations and expectations, Jacobs and McClelland (1996) define occupational aspirations as the occupations to enter in the absence of any limitations, whereas expectations are circumscribed by external factors. The external factors that influence expectations are, for Howard et al. (2011), financial pressures, institutional racism and socialisation pressures, especially for first time college attending generations.

The occupational aspiration landscape is further differentiated by Jacobs and McClelland (1996) when they introduce the concept of occupational attainment as reflecting the occupations that people end up engaging in life. Career and occupational attainment is shown to be dependent on educational attainment, with children with higher occupational aspirations staying in school longer and being more likely to enrol in post-secondary programmes (Benheke et al., 2004). Educational attainment has been shown to be a good predictor of occupational attainment, with higher occupational attainment being observed for those with the requisite education independent of race or social class (Jacobs & McClelland, 1991)

Educational attainment has also been shown by Auger, Blackhurst, and Wahl (2005) to impact on career choice where elementary school children were seen to eliminate careers which they perceived to require more ability and longer periods of educational attainment. These authors conclude that although children tend to aspire to higher prestige careers, they would settle for a lower prestige career if the higher prestige one requires higher levels of educational attainment. This is a finding which had already been tested by Gottfredson (1996).

The above discussion shows that there is a hierarchical relationship between career aspirations, with adolescents aspiring to one occupation while maybe expecting to attain a different one. Career aspirations have been shown to affect educational aspirations, with children's education progressively being steered to educational endeavours that enable them to reach their expected rather than their aspired to occupation. The following section will give a detailed description of Gottfredson's theory of circumscription and compromise. This theory has a bearing on how careers

are developed through the different life stages. I use this theory to position the process of career aspirations and to build a conceptual framework that I use in this study. The conceptual framework is presented diagrammatically (see Figure 3.1 on page 59). The framework shows the factors which manifest in adolescents during the compromise stage and how they influence adolescents in accessing post-school education. Finally, the chapter will discuss the factors that influence career aspirations, their degree of influence and how these manifest in decision making.

3.3 Gottfredson's theory of circumscription and compromise

Gottfredson's theory of circumscription and compromise (1981) describes the way in which occupational aspirations are developed, expressed and refined in progressive developmental stages from a young age to adolescence. It further suggests that career aspirations affect educational aspirations and achievement and decisions to continue with further education. Gottfredson (1981) advocates that in adolescence occupational aspirations are a reflection of one's self concept and that people seek occupations that are congruent with their self-image and reflect their knowledge of different occupations. The theory defines self-concept as the beliefs that people hold about themselves including personality, interests and perceived place in society.

Occupational circumscription and compromise is shown to progress through four stages of growth and development, which are, according to Gottfredson (1981), associated with the elimination of a large number of inappropriate career alternatives. The four stages of occupational circumscription from early childhood to adolescence are described in the following sections.

3.3.1 Stage 1: Orientation to size and power

This stage occurs between the ages of 3 and 5 and is primarily focused on "size and power", where children view occupations as adult roles. During this stage their aspirations are to be the biggest and most powerful person around as influenced by observations in their immediate world.

3.3.2 Stage 2: Orientation to sex roles

Stage 2 of career circumscription occurs between the ages of 6 and 8 and is characterised by gender stereotyping. It is a stage where children begin to associate with different career-related gender stereotypes. Their career aspirations are expressed in terms of gender identity, and they have a dichotomous view of the world where cross-gender occupational choices are frowned upon. Children consequently become aware of gender and choose careers consistent with their gender (Gottfredson, 1978; Miller & Budd, 1999; Rentzou, 2013). This stage is characterised by personal interest where children start to show interest in some careers, albeit with very limited knowledge and understanding of the career content. Some of the gender stereotyping is taken into the adult world where some occupations are regarded as unacceptable by male adolescents. The latter is documented by Schuette et al. (2012), who show that more male students chose male-dominated occupations that were the same as those of the majority of males in their families.

3.3.3 Stage 3: Orientation to social valuation

The social valuation of occupations occurs during stage 3 of the circumscription process, at ages 9 to 13. During this stage, career choices are defined in terms of their societal value and prestige. This stage is associated with the differentiation of people's socioeconomic roles and position, as well as adolescents' attempts to identify their place in the social order. During this stage, career choices are narrowed down to acceptable levels of prestige. At this stage, young people have a perception of their general level of ability (intelligence) and of occupations which would be looked down upon in their immediate communities.

Prestige at this stage is additionally related to the educational attainments required to perform certain job roles and therefore academic and educational aspirations begin to take shape (Gottfredson & Richards, 1999). Adolescents' choices are, at this stage, influenced by social conditioning and fulfil a sense of belonging, social respect and the perceived ability to provide for a comfortable life, as compared to the adolescent's current circumstances. This explains the assertion by Creed, Conlon,

and Zimmer-Gembeck (2007) that career aspirations are shaped by young people's social background.

Adolescents begin to develop a sense of a higher limit "ceiling" and lower limit "floor" alternatives in occupational choices and reject those occupations regarded as having low prestige. Gottfredson has shown that youngsters from higher social classes with wealthier, better educated parents aspire to higher prestige occupations than their counterparts from lower social classes. According to Gottfredson, high social class background and high ability elevate aspirations by raising the floor and ceiling of possibilities, while children from low social classes are subjected to the reverse effects of lowered floor and lowered ceiling respectively (Gottfredson, 1996).

According to Gottfredson's theory, during adolescence learners have already completed the process of career circumscription and have determined the major career options to follow. As they make decisions about what institutions to enrol in they start to apply environmental factors to circumscribe careers that were decided on earlier.

3.3.4 Stage 4: Orientation to unique self

Stage 4, which occurs at age 14 and beyond, is an orientation to individual characteristics such as motivation, values and ability. By this stage, adolescents have a more developed sense of self-worth and start investigating careers consistent with their self-interest and self-concept. This stage is characterised by considerations of, among others, personal goals, social ambitions and the need for security. Accordingly, adolescents begin to make choices between idealistic and realistic aspirations, taking into account the accessibility of the occupation (Gottfredson & Johnstun, 2009). Once ability and other societal factors have been considered, adolescents then begin a process of eliminating "unrealistic" choices before finally expressing their career decision through enrolment in post-school education or joining the world of work. According to Gottfredson (1981), compromise is influenced by external factors that include gender, parental socioeconomic status, gender, role models and access to resources.

At ages 17 to 18, a unique level of career decision making has been fully developed and adolescents are entering a space of expressing choices that are congruent with

their self-concept. This is the age at which most countries expect adolescents to make choices about their future careers: that is, age 16 in the UK (Swift & Fisher, 2012), 18 in Germany and 18 in South Africa (DHET, 2013), and to enrol in post school education.

3.4 Factors affecting career aspirations

Career aspirations are affected by many factors and in turn influence the choice and access to the career of choice. Some of these factors are ethnicity, gender and parental socioeconomic status (Cochran et al., 2011; Hill, Ramirez, & Dumka, 2003), disability and gender socialisation (Hernandez, 1993), and educational achievement (Curtis, Drummond, Halsey, & Lawson, 2012; Mau & Bikos, 2000; Hou & Leung, 2011).

Gottfredson (1991) suggests that occupational aspirations are a reflection of one's self concept: people seek occupations that are congruent with their self-image and that reflect their knowledge of different occupations. This view is supported by Auger et al. (2005) who showed that elementary school children realistically begin to appraise their chance of attaining career options very early in life and later circumscribe these choices based on sex-type and social prestige.

Gottfredson (1996) further argues that since self-concept is determined by socioeconomic status, ability, gender, role socialisation and individual values and interests, these factors have a direct influence on career aspirations. To highlight the influence of self-concept on career aspirations, McCracken and Barcinas (1991) established that students' aspirations are dependent on the students' life experiences, which are in turn determined by family background, the communities they live in and the schools they attend. Children's career aspirations have also been shown by Auger et al., (2005) to be shaped by social influences such as gender expectations, social prestige and the perceived difficulty of the career, as well as the careers of parents and of other close adults around them.

3.4.1 Socioeconomic status

Socioeconomic status influences career aspirations by affecting aspirations for post-school study and professional careers (Curtis et al., 2012). Studies have shown that

young people from low socioeconomic backgrounds mainly choose careers consistent with their status (Creed et al., 2007; Howard et al., 2010; Metz et al., 2009; Middleton & Loughhead 1993). Research has also found that, for similar academic achievements, lower socioeconomic status is associated with lower career aspirations compared to those from higher socioeconomic backgrounds (Schoon & Polek, 2011). According to Jacobs, Karen, and McClelland (1991), individuals from disadvantaged backgrounds are less likely to have high aspirations and are more likely to persist with these aspirations than those from better background. Schoon and Polek (2011) have documented that the higher aspirations of children from more affluent families is due to access to better educational opportunities, finance, role models and better occupational knowledge from their informal networks.

Hernandez (1993) shows that youth from low socioeconomic status are at a greater risk of not reaching their occupational potential, as low socioeconomic status limits access to the type of information available and to quality educational opportunities and reduces the number of available role models and parental support, whilst promoting traditional gender socialisation. This observation is supported by Benheke et al. (2004), who found that Latino youth have lower occupational aspirations because of their parents' inability to help with school work. In South Africa, Robbins, Wallis and Dunston (2003) and Dass-Brailsford (2005) found that low socioeconomic status did not negatively affect career aspirations. They showed that South African youth from poor backgrounds had high aspirations, were highly resilient and succeeded in their academic studies despite their socioeconomic status. Gewer (2010) also contends that even without the requisite knowledge and informal networks, South African parents support their children's career and occupational aspirations by providing moral, emotional and financial support even when they do not have the tools to provide information and career guidance.

Rojewski and Yang, (1997), and Rojewski (2005) also notes that the support of family and friends is a significant factor in career decision making among youth. The importance of social support for careers and the educational achievements for these is illustrated by Coffman (2011), who found that social networks are very important for success in college and that first-generation college students have poor or no social networks to support their college careers. He further recommends that to

support these students, colleges should strengthen their college preparation and support networks and take into account students' desire to exceed their parents' economic status and find meaningful employment.

Children with low socioeconomic status need to be exposed to different educational opportunities. Current studies reveal that the impact of socioeconomic status on career aspirations is manifest in the higher TVET enrolments by learners from lower socioeconomic classes in different parts of the world (Howard et al., 2010; MacBrayne, 1987; McCracken & Barcinas, 1991).

Although support and interest in vocational education training (VET) careers differs in different parts of the world it remains more noticeable among the lower socioeconomic classes. In Australia, Curtis et al. (2012) found that children from low socioeconomic backgrounds were more likely to pursue VET than their higher socioeconomic status counterparts.

There are places where vocational education does not enjoy the same support among low socioeconomic populations. In Vietnam, for instance, it is not considered as socially acceptable and prestigious as higher education. Dormeier Freire and Giang (2012) report that Vietnamese parents perceive education as a high-risk investment with uncertain social returns and therefore are wary of supporting children attending the less prestigious VET. They found that students in VET receive less support than higher education students, as parents doubt that VET education can benefit their children. Parents perceive that children attending vocational education as bringing less familial prestige than the families of those attending higher educational institutions (Dormeier Freire & Giang, 2012).

High parental socioeconomic status provides learners with support structures for their decision-making process and the social networks to investigate their aspirations before engaging in further studies. This is supported by Davis (2013), who shows that children whose parents are educated and in occupations that require higher education tend to aspire to similar high value occupations, and therefore stay in education for longer (Benheke et al., 2004). This illustrates the effect of high socioeconomic status on the career aspirations and subsequent educational aspirations of children whose parents are also better educated.

Howard et al. (2011) also found that children from higher socioeconomic classes aspire to higher socioeconomic index occupations that require higher levels of education. The impact of socioeconomic status on decision making is shown by Ball, Reay, and David (2002); among UK students, they found that those with high social capital have access to better educational and occupational advice that is personal, specialist and first hand and not the impersonal second-hand information contained in career brochures.

Ball et al. (2002) describe as “embedded choosers” those who have supportive social networks and consider higher education as a “rite of passage”. They additionally report that for learners from high socioeconomic classes the choice of education is not constrained by practical considerations such as the cost of college fees and accommodation.

In contrast to the “embedded choosers” category, Ball et al. (2002) have described first-generation university students as “contingent choosers” who have little financial support from their parents, and low support in choice making or in funding higher education itself. They argue that even though these learners may enjoy parental support, such support is generic, unrealistic and weakly linked to real or imagined futures of the students. South African first-generation learners are also “contingent choosers” as, according to Robbins et al. (2003), they only receive generic, emotional support from their parents that does not influence their career choices or prospects of future employment.

High career aspirations have been shown to result in higher educational aspirations whereby young people who want to have a better chance in life use education as a stepping stone to attain their aspirations (Benheke et al. 2004; Gasser et al., 2004; Howard et al., 2010; Mau & Bikos, 2000). Educational achievements are further influenced by the socioeconomic status of families, which influences a young person’s access to resources such as information on available educational opportunities (Benheke et al., 2004; Dormeier Freire & Giang, 2012), role models (Hill et al., 2003; Hou & Leung, 2011; Schoon & Polek, 2011) and sources of funding and career counselling (Coffman, 2011).

Low family income levels also affect the support networks of students and their degree completion rates (Coffman, 2011). Morrison (2011) showed that in the UK students' horizons for decision making is affected by access to resources, where public school students with parents in managerial positions were seen to have lower aspirations, even when their school results would have enabled more ambitious choices. This confirms the assertion that by influencing access to resources socioeconomic status affects adolescents' career decision making.

To further illustrate the impact of socioeconomic status on occupational and educational aspiration, Gasser et al. (2004) reports that American minority students have low academic self-efficacy, as illustrated by their lack of confidence in negotiating the university system. This ultimately impacts on their educational choices and future occupational expectations, with many delaying the educational and career decision making.

According to Ball et al. (2002), first-generation applicants, most of whom come from low socioeconomic status families, make their educational choice after completing secondary school. These decisions are also mainly based on personal information gathered without the first-hand knowledge and support of a role model who has been through the process. Ball et al. (2002) report that because they lack role models, and their parents and the immediate social circle are not able to offer any support on higher and further education studies, these students source information independently.

In conclusion, it is noted that TVET education is accessed by learners with low socioeconomic status who do not have the social networks to provide expanded information on other career options. Because the learners' socioeconomic status determines the social networks that can be used in accessing information for career decision making, they are most commonly aspire to vocational careers prevalent among the low socioeconomic status population. The role of parental influence and social networks in career choices is discussed in the following section.

3.4.2 Parental influence

Parents have been shown to significantly influence their children's career aspirations (Coffman, 2011; Dormeier Freire & Giang, 2012; Hou & Leung, 2011). Creed et al. (2006) conclude that parents only want what is best for their children through what Morrison (2011) regards as a general framework of aspiration and hopes – a space within which "choices are made and validated".

Dubow et al. (2009) have reported a positive relationship between parental occupation and children's cognitive ability and concluded that parental education and occupational status affect children's cognitive ability, which in turn affects the level of education and subsequently predicts career success in midlife. Robbins et al. (2003) have, however, shown that parental education and occupational status do not have an impact on the aspirations of South African learners. They showed that these learners aspire to succeed irrespective of their poor background and having uneducated parents who cannot offer them material support in their career decision making.

Parental education is a predictor of family income, interest in children's education as well as the resources dedicated to education (Dormeier, Freire & Giang, 2012; Dubow et al. 2009). Parents can also act as role models, career advisors and consultants, and therefore the higher their educational level the better support they provide to their children (Hou & Leung, 2011). Coffman (2011) found a positive relationship between parental involvement and learner aspiration among first-generation American college attendees. This was credited to a boost in aspirations and support against the negative effects of an alien college culture (Coffman, 2011).

It has, however, been shown that parental influence can sometimes put children under undue stress when they are expected to pursue careers not suited to their capabilities or interests.

Chinese parents have been found to have the greatest influence on and highest expectations of their children's educational and career prospects (Hou & Leung, 2011). In describing the negative impact of parental influence, Middleton and Loughhead (1993) posit that parental encouragement is sometimes overzealous and pressurises the adolescent by having unrealistic expectations. They indicate that

parental influence has to take into account the adolescent's ability and attitude towards school (Middleton & Loughhead, 1993). For Hou and Leung (2011), parental influence on career aspirations is very strongly dependent on gender and the perceived prestige of the prospective career.

In the USA, Goyette and Xie (1999) classified parental expectation as hierarchical with Asian and white parents expecting the most of their children, while Latino and African American parents do not have such high expectations of their children's aspirations. A match has also been shown to exist between the low career and occupational aspirations of Latino youth and their parents' low educational status (Benheke et al., 2004).

To contextualise the power of parental influence on children's aspirations, Middleton and Loughhead (1993) describe old models of studying parental influence that looked at the relationship as unidirectional, linear and unilateral, with the parent always influencing a passive child. They contrast this with recent developmental models showing a complex dynamic relationship between parents and adolescents. This dynamic relationship is most likely to be manifest among children from low socioeconomic environments with low parental education and occupational levels who have to access and evaluate information on their own. Secure parental relationships are, according to Vignoli (2009), important in career decision making as they influence children's identity development and promote self-esteem by providing a base from which the child develops the self-confidence used in future decision making. This further emphasises the role and impact of parents in career decision making.

Parental influence can also be a motivator for academic performance (Udoukpong, Emah, & Umoren, 2012) and therefore a contributor to the attainment of occupational aspirations. Young people's decisions to enter college are strongly influenced by parental expectations (McCracken & Barcinas, 1991) and an understanding that higher educational achievements translate into better earnings and better quality of life. Youth with high occupational aspirations therefore persevere for longer and perform better in school.

In summary, parental influence could be a motivator for career aspirations. It is, however, noted that this influence may be destructive when it is not consistent with the adolescents' capabilities and interest. Parents are therefore not only enablers, but may at times dampen the aspirations of adolescents by exerting pressures not commensurate with the learner's capabilities.

3.4.3 Gender

Gender and gender socialisation are assumed to affect career aspirations with learners aspiring for careers consistent with their gender. Children aspire not only to follow in the careers of their parents, but also to conform to stereotypical gendered occupations within their sociocultural environment. It has, however, been shown that women are more likely to aspire to male-dominated careers than males to female-dominated ones (Davis, 2013). Females have further been found by Howard et al. (2011) to aspire to careers with a higher socioeconomic index and requiring higher levels of education than males (Howard et al. 2011). This results in female students spending longer in education than their male counterparts. Hill et al. (2003) further established that women have higher career maturity and a better understanding of the barriers to overcome to attain their career aspirations, a fact that makes their aspirations more realistic. Women are therefore more likely to incorporate issues of personal capability and educational attainment in their determination of career aspirations.

The influence of gender on occupational aspirations is also dependent on socioeconomic status where families have to make decisions related to the financing of further studies. Dormeier Freire and Giang, (2012) showed that Vietnamese families prefer to educate their male children who will contribute to the upliftment of the family rather than females who may get married and contribute to their families by marriage. These social dynamics and cultural family structures therefore support the perpetuation of gendered choices in educational investments.

According to Schuette, Ponton, and Charlton (2012), career aspirations are based on role models, with children aspiring for occupations that are prevalent in their immediate family and social circles. They suggest that males' attitudes towards female jobs may link to the perception that female jobs are low paying and of low

status. Trice and Knapp (1992), however, found that children's career aspirations are mostly influenced by the careers of their mothers, or that mothers have a greater influence than fathers on the career aspirations of their children. Girls have been shown by Schuette et al. (2012) to aspire for higher prestige occupations than their male counterparts irrespective of their family circumstances.

Career social status and rewards are gender sensitive, with most male-oriented occupations occupying higher social status than typically female occupations. Finally, females have been shown to be more likely to aspire for cross-gender occupations than males to aspire to female-dominated occupations.

The next section will discuss the impact of role models on career aspirations and how the availability of positive role models improves career information gathering and decision making.

3.4.4 Role models

Role models have an impact on the careers and educational aspirations of young people. As a concept, a "role model" is not just one who shows the "correct path", but rather meets the need for youth to believe in the possibility of attaining their desired goals because of the experiences of seeing others who have achieved the same level of success (Jacobs et al., 1991).

In a study of American college students, Gasser, Larson and Borgen (2004) showed that students in four-year colleges with more contact with the teaching staff were more likely to have higher educational aspirations than those in community colleges with limited staff contact. Creed et al. (2006) attributed the influence of role models to racial and ethnic background. This is supported by Coffman (2011), who showed that first-generation college students, who do not have educational role models in their immediate families, have lower aspirations than their second-generation counterparts with access to role models. Howard et al. (2011) further support this when they show low career aspirations among Native American learners who aspire to careers with the lowest educational requirements of all population groups. This further confirms the assertion that role models impact on both occupational and educational aspirations.

McCracken and Barcinas (1991) report that high prestige jobs are scarce in rural communities and therefore the occupational aspirations of rural children are consistent with their exposure and dependent on available role models. It is therefore expected therefore that rural students will have lower educational aspirations than their more urban counterparts. The lack of opportunity for rural students to interact with people from different backgrounds is also viewed as a limiting factor in their educational and sociological development, which further leads to their low occupational aspirations (McCracken & Barcinas, 1991).

According to Ball et al. (2002), first-generation college attendees do not have role models to provide them with “hot knowledge” about careers, rendering their choices superficially based on career guides, institutional prospectus and websites. Low socioeconomic status and lack of role models also limits students’ attendance at open days, resulting in choices that lack insight in some of the intricacies of the chosen careers. Their more informed second-generation students’ decisions are based on strong social capital, without the necessary intervention of parents. These learners make choices based on intrinsic factors – such as employability, prestige of the institutions, etc. – as well as on aesthetic factors (Ball et al., 2002).

The effect of role models on careers aspirations can be characterised as the presence of a partner with an understanding of the world of work and who provides realistic career-relevant information that can be used for decision making. Role models ease the adolescents’ decision-making processes and support the expression of their career aspirations. The presence of and access to role models is, however, shown to be both a socioeconomic and a geographic factor, with learners in more rural areas having limited access to role models.

3.4.5 Geographic location

The learners’ geographic location affects their career aspirations and subsequent choices through the school they attend, the exposure of the teachers, and the availability of role models. Urban schools are seen as environments that can facilitate social change while rural schools are mostly considered to be mechanisms of communal cohesion and continuity (McCracken & Barcinas, 1991). Rural and low socioeconomic status students do not pursue higher education as much as their

counterparts from metropolitan areas, and when they do they have lower aspirations (Curtis et al., 2012). Learners in urban schools are moreover perceived to attend school with the aim of contributing to human capital development and social change, whereas their more rural counterparts are not expected to achieve similar levels of social upliftment and achievement (McCracken & Barcinas, 1991).

Rural students face greater difficulties in terms of career development and employment (Ali & McWhirter, 2006). The problems for rural students are multiple and include financial disadvantage, unemployed parents, access to information, social networks, lack of role models, and so forth. Ali and McWhirter (2006) also found that rural students' lack of interest in further education is caused by the social expectations that children beyond a certain age have to contribute to the family income. It can therefore be concluded that rural family systems are not supportive of continuing education and higher occupational aspirations.

Dormeier Freire and Giang (2012) postulate that in developing countries there is a prevailing attitude that "VET is for the poor" and "HE for the rich", a mentality that is perpetuated by an observation that higher education enrolments are mainly urban, middle-class students. This supports the observation of McCracken and Barcinas (1991), who found that a higher percentage of urban than rural students planned to attend a four-year college, with rural students more likely than urban students to attend a technical college. Curtis et al. (2012) also reported that rural students had lower achievements and less favourable attitudes towards school and lower study and career aspirations. They further found that when rural students continue to pursue post-school education, they are more likely to enrol in vocational programmes than other students.

Geographic location affects career aspirations and access to educational opportunities to express those aspirations. Learners in rural communities do not have adequate access to career information, role models and educational opportunities. Consequently, more rural than urban youth enrol in vocational programmes because of their ease of access.

3.5 Concluding remarks

Several studies have been undertaken to test the applicability of Gottfredson's theory (Brott, 1993; Hesketh et al., 1990; Holt, 1989; Lapan & Jingeleski, 1992; Millward et al., 2006). In an evaluation of Gottfredson's theory among American adolescents, Brott (1993) described a concept of the "zone of acceptable alternative" as an area bounded by preferred prestige and sex-type. Brott (1993) showed that choices made during the circumscription stage are accompanied by the development of more rigid positions and less flexibility leading to the elimination of some potential careers and the circumscription of others where interest is sacrificed. This in turn leads to a reduction in the zone of acceptable alternative, which ultimately leads to more rigid positions.

Brott's evaluation was, however, not supported by Leung (1993), who found that Asian Americans' zone of acceptable alternative becomes bigger in adolescence rather than diminishing as proposed by Gottfredson. Brott (1993) postulates that during circumscription, interest is sacrificed first followed by prestige and preference, and finally sex-type, and during compromise all choices made through circumscription are implemented.

Commenting on the practical application of Gottfredson's theory to career counselling, Lapan and Jingeleski (1992) suggest that compromise is fundamental to understanding career decision making. Compromise thus has significant implications for career counselling. They argue that to offset the negative effects identified by Gottfredson, career counselling must be started early to facilitate an emphasis on careers that would otherwise be compromised during the early stages and never investigated further. Lapan and Jingeleski (1992) advocate that because children overemphasise sex-type, especially males who have been shown to be more rigid in their sex-type preferences and find it more difficult to compromise sex-type during periods of high unemployment, it is important for counselling to dispel myths and entrenched positions about prestige and sex-types and help support decisions that may result in productive employment

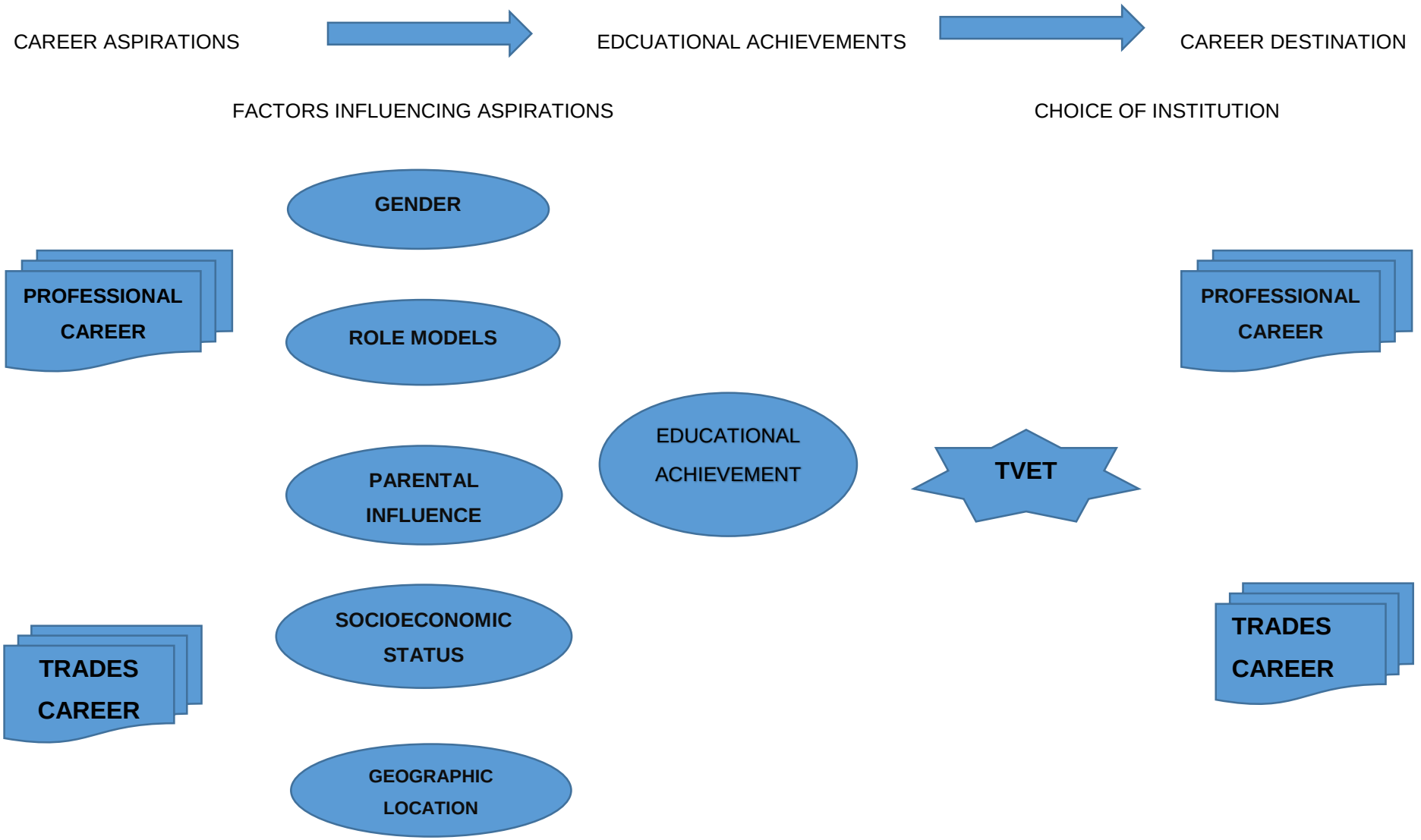
The applicability of Gottfredson's theory also been tested in the USA and Canada (Auger et al., 2005; Holt, 1989; Hou & Leung 2011) and in Australia (Henderson,

Hesketh & Tuffin, 1988; Hesketh, Durant, & Pryor, 1990). In studying career compromise among South African graduates, Portnoi (2009) reports that they choose careers based on their perception of self-concept, including compatibility with working conditions and environments. The validity of Gottfredson's theory in the South African context was demonstrated by McMahon and Watson (2005), who found that 14-year-olds choose careers based on social valuations that are dependent on the relationship between education, occupation and income. It has also been shown that South African youth regard gender discrimination as a career barrier and therefore choose to enter more traditional careers that are compatible with their gender (Stead, Els, & Fouad, 2004). This is an expression of Gottfredson's circumscription theory, which shows that potential careers are circumscribed due to fears of gender discrimination.

There are no documented studies which have applied and tested Gottfredson's theory to adolescents entering technical and vocational training colleges in South Africa. The participants in this study are adolescents entering the post-school educational stage and it is assumed that their career aspirations have already been circumscribed. Therefore, this study will only focus on the stage of career compromise. The present study will attempt to test the validity of the theory, especially the factors that have an impact on career compromise in adolescents following construction-related careers at technical and vocational education colleges.

The conceptual framework is presented diagrammatically in Figure 3.1 on page 59. The framework shows the factors which manifest during the compromise stage in adolescents and how they influence adolescents entering post-school education.

Figure 3.1: Conceptual framework for the study



4. CHAPTER 4 RESEARCH DESIGN

4.1 Introduction

Those who have researched career aspirations have relied on a variety of research methods ranging from quantitative surveys (Udoukpong, Emah & Umoren, 2012; Vignoli 2009; Hou & Leung 2011), to the meta-analysis of secondary data sets used by Howard et al. (2011) to investigate the effects of socioeconomic status, race and gender on careers aspirations, to the development and testing of new models or the validation of existing theories. In addition, there are studies that have used qualitative techniques to research the influence of family background on learners' aspirations and academic achievements (Robbins et al., 2003).

There is also a body of research that has used mixed methods research to investigate factors that influence occupational and educational aspirations in youth, especially youth from marginalised, non-white and rural communities (Ball et al., 2002; Benheke et al., 2004; Curtis et al., 2012; Hill et al., 2003). Few studies have been undertaken on learner aspirations in South Africa, and these were mainly quantitative studies looking at the impact of school-level career guidance on adolescents' aspirations (McMahon & Watson, 2005; Stead, Els, & Fouad, 2004).

Mixed methods reflect the data that are available, as well as the particular research objective of the researcher, on a relatively under-researched theme irrespective of the discipline within which the research is conducted. Noting this, to evaluate the validity of Gottfredson's theory of circumscription and compromise in adolescents exiting secondary school and entering construction education at TVET colleges, I considered mixed methods as the most suitable approach. Mixed methods offer both the flexibility of the qualitative approach and the structure and generalisability of the quantitative approach.

In this chapter, I will describe the rationale for the choice of a pragmatic approach to the study, then proceed to explain the questionnaire development process as well as the pilot study, the findings of the pilot study and how they were used to adjust the final research instruments, before finally detailing the process of survey data

collection at the colleges. I will then describe the data capture and analysis stage including the use of statistical tests and the rationale behind the choice of test. The chapter will then proceed to describe the qualitative phase of the study, including the rationalisation for the choice of a focus group discussion, the process of data collection, data handling and analysis. In addition, I will describe the data collection methodologies, including the location and characteristics of the colleges studied. Finally, I will describe the process of data validation and conclude by explaining the ethical concerns that were considered and how these were mitigated.

4.2 Pragmatic Research Paradigm

The objective of this study was to investigate the career aspirations of learners enrolled in the construction NC(V) programmes at TVET colleges. The research will use a pragmatic, explanatory sequential quantitative–qualitative mixed methods approach, as described by Cresswell and Plano Clark (2007). A pragmatic approach is best suited for answering the research question because it helps clarify research concepts and hypotheses by identifying the practical consequences of their expression (Rylander, 2012). It is also the approach best suited for the study of aspirations that are ultimately expressed as practical enrolment in colleges. As clearly explained by Mackenzie and Knipe (2006), the research problem has a central place in pragmatism with all research endeavours being undertaken in order to understand and address it.

Morgan (2007) describes research paradigms as the consensual set of beliefs and practices that guide a field, and a set of beliefs and practices that influence the way in which researchers select both the questions they study, and the methods used to study them. Pragmatism is problem-centred, pluralistic, real-world oriented and applies the use of mixed methods to understand the real-world practice orientation of the research problem (Mackenzie & Knipe, 2006). Pragmatism does not subscribe to any philosophical loyalty or methodological tradition but rather uses the methods best suited to answer and provide insights into the research question. It therefore supports the use of mixed methods design where, as is the case in this study, the choice of mixed methods is based on the research question and the purpose of the research (Hall, n.d.).

Pragmatism has further been described as a fusion of approaches that allows for a better exploration of the research question itself through simple methods. It is neither quantitative nor qualitative in essence; it can thus provide multiple ways of investigating a research phenomenon (see Mackenzie & Knipe, 2006). Specifically, I considered a research approach that is pragmatic as appropriate to investigate career aspirations, as it would allow the flexibility required to investigate the research question without fixed allegiances to any philosophical tradition (Descombe, 2008).

There are criticisms of pragmatism. Thus, Morgan (2007) contends that the socio-political leanings of pragmatic researchers not only shape their research questions but also influence the way researchers interpret findings and how they act on them. He suggests that a pragmatic approach builds on our worldviews by influencing the research we do, thereby allowing researchers to make decisions about what is an important and appropriate research problem. This choice is based on the researcher's personal history, their social background and their cultural assumptions. He further posits that pragmatism does not afford a hierarchy of importance in research design but rather treats all issues as equal, paying equal attention to the methodological, epistemological and technical aspects of research. He suggests a bi-directional relationship among the research philosophical components, as depicted in the diagram below:

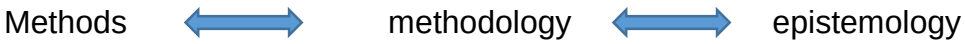


Figure 4.1: Bi-directional nature of pragmatic research

Source: Adapted from Morgan (2007).

It has, however, been noted that since pragmatism permits different worldviews, it allows for the matching of different research methods to specific questions and purpose of the research, and supports the use of tools from both the positivist and interpretivist paradigms (Mackenzie & Knipe, 2006). This flexibility empowers the researcher to interpret the results as they see fit to answer the research question. The flexibility of pragmatism is critical in this study because I am studying a subject that has not been researched among a similar population, or under similar conditions, and therefore need a research approach that offers the flexibility to adjust

the study as and when required to obtain maximum insight into the research question.

4.3 Methodology

The study uses an explanatory sequential mixed methods design (Creswell & Plano Clark, 2007) in which qualitative methodology is used to explain and provide a deeper understanding of the quantitative results. The data are collected in two distinct sequential phases with the quantitative data being collected first and then analysed and used to develop the criteria to be explained during the second qualitative phase. The quantitative phase comprised a survey of learners enrolled for the NC(V) programme at two local TVET colleges.

I used the quantitative research methodology to investigate the extent and reach of the phenomenon under study. Quantitative methods involve the collection of numerical data or the coding of text into numerical data to facilitate analysis using statistical techniques (Kelle, 2006). Quantitative techniques are deemed appropriate for an investigation of the learners' aspirations because they provide generalisability of results across populations with similar characteristics and therefore allow for making predictions in policy studies (Kelle, 2006).

In his evaluation of quantitative methodologies, Kelle (2006) however suggests that quantitative data miss the social context in which phenomena occur. This causes researcher bias, as the researcher positions the questionnaires to suit his/her point of view and experience. Kelle (2006) sees this as exerting research control over the dataset, leading to a narrowing of data collection and misinterpretations to suit the researcher's point of view. To minimise researcher bias in this study I used externally defined indicators, and I followed the criteria applied by Statistics South Africa (StatsSA, 2012) to determine the learners' socioeconomic status, as well as the adjusted criteria developed by the Human Sciences Research Council (HSRC) to study the educational history of learners in South Africa (Kruss et al., 2012).

In the next section I present a detailed description of the development of the survey questionnaire used in this study, and I also describe the pilot study that was used to validate the questionnaire.

4.3.1 Quantitative questionnaire survey

For the quantitative phase of the study I used a questionnaire to facilitate the rapid collection of information from large numbers of sources within a short space of time. Questionnaires were used to gather data on the personal and environmental factors that influence career aspirations, as described by Gottfredson's theory of circumscription and compromise (Gottfredson's 1981). The items included were the following:

- Demographic profile of the learners, including their age, gender and home province
- Educational performance, assessed by using the highest school leaving qualification and the national senior certificate (NSC) results for learners who have attained this level of education
- Access to career guidance and sources of information consulted about construction industry careers
- The learners' reasons for enrolling in TVET colleges
- Their career expectations on graduation from the college.

To determine the learners' socioeconomic status, I used parental educational level, occupational status, family income and type of house (StatsSA, 2012). I also used the number of siblings in post-school education to assess the family's potential to offer financial support to learners in a TVET College.

Respondents were asked about their knowledge of construction industry occupations, planned trade specialisation, favourite subjects and occupational choices in order to explore the consistency between their occupational aspirations, expectations and choice of specialisation. I further used the relationship between the learners' specialisation at college and their expected occupation after completing their studies to determine their knowledge of the construction industry.

To determine the learners' exposure to career guidance and their perception of its usefulness and quality I assessed their sources of information about the industry. To obtain a full understanding of the learners' knowledge and aspirations, I also

included questions about their exposure to people engaged in construction-related occupations.

Lastly, to investigate the impact of the TVET programme on the learners' aspirations I assessed the learners' planned activities beyond the college and whether the learners wanted to continue with academic studies or start work immediately.

I developed the questionnaire using criteria as identified in the literature and described in Chapter 3, as well as by adjusting questions used in other studies as indicated in section 4.3 above. I then validated the questionnaire by conducting a pilot study with learners enrolled for a construction programme at a different campus. The pilot study is described in detail in the following section and the findings are presented in Chapter 5.

4.3.2 Pilot study

A pilot study was used as part of the quantitative methodology to test the research instruments in terms of ease of administration, validity of the questions and the time required to complete the questionnaire. The pilot involved the administration of the research instrument to a small group of respondents with characteristics that were similar to the study population. I ran the pilot with a class of learners enrolled in the second trimester (N5) of the construction NATED programme at a different campus of the Pretoria based TVET College. I chose the NATED learners because their familiarity with the requirements of construction training would enable them to comprehend and respond appropriately to the questions. Although the pilot group was from the same college as the final respondents, the two groups did not have any contact before or during the conduct of the study. This is important as it ensured that the study respondents were not influenced by the pilot participants and that the responses were not biased or rehearsed responses.

Briefly, permission was requested to undertake the pilot study at the college. Once permission was granted arrangements were made to survey the N5 learners during their normal class period. The purpose of the study was explained to the class and they were informed of their right to decline to participate without any fear of reprisals. The questionnaires were distributed to the class, completed and collected.

The pilot results are subjected to the same treatment as planned for the main study, including statistical testing. The results of the pilot study were then used to determine the elements that were included in the final questionnaire and their sequence. The findings of the pilot study are presented in Chapter 5. I also made adjustments to the questionnaire following the pilot study.

4.3.3 Quantitative data handling

Once the questionnaires had been completed by the learners, I collected them and captured the data on a Microsoft Excel spreadsheet. I delivered the data capture sheet to the STATOMET unit at the University of Pretoria for data cleaning and analysis. The data were exported to SAS version 7 for analysis. The data were then tabulated to display the research criteria of interest and graphs were used for presentation and ease of interpretation.

Briefly, I categorised the data and performed descriptive statistics on categorical data such as demographic profile of the learners, their educational background, their reasons for choosing construction careers and intended specialisation, socioeconomic background, financial support at college, access to career guidance and their college experiences.

The categorical data was grouped to allow further statistical analysis and cross analysis to investigate relational statistics. Briefly, where data cells contain fewer than five responses they will be collapsed with the cells that reflect the closest categorical means to enable cross tabulation. The revised results are presented and used in the further analysis of the data to reflect the factors that influence learners' career aspirations and expectations.

4.3.4 Qualitative methodology

As described in section 4.2 above, this study used a sequential, exploratory quantitative-qualitative mixed methods approach. After collecting the quantitative data and undertaking a preliminary analysis, I proceeded to the qualitative phase of the study.

The second, qualitative phase comprised a focus group discussion that provided an in-depth understanding of the quantitative data. I chose to use a focus group discussion because focus groups provide a rich rubric of data through constant cross-questioning and validation from a group of participants. A focus group discussion uses a key question to illicit responses that initiate a discussion amongst the participants.

I carried out a preliminary analysis of the quantitative data to identify emerging themes that required further clarification using qualitative methodology. The emerging results that I felt required follow-up investigation included the reasons why learners enrolled in the NC(V) and not the NATED programme, as both provide training for careers in construction. I also needed to understand the impact of the bursary on the learners' decision to enrol at the TVET College. Finally, to assess the impact of the college experience on the learners' aspirations, I was interested in finding out what the learners planned to do when they graduated from the colleges. I identified the following key questions which I used to initiate the focus group discussions:

1. Why did you enrol for the NC(V) civil construction programme at the TVET College?
2. How important was the availability of bursaries to your decision to enrol at the college?
3. Where do you see yourself after graduating from the college?

Three focus group discussions were conducted with learners drawn from level 2 and level 4 at the Pretoria based college. Level 2 is the entry level in the NC(V) programme and I recruited the level 2 learners to investigate the reasons why learners choose to enrol in the TVET construction programme. At level 2 the learners have not yet been influenced by their college experiences and are therefore able to provide a good understanding of the reasons for enrolment, as well as the understanding of the construction industry that they bring into the college environment.

Level 4 learners have been at the college for a minimum of three years and have already been influenced by their time at the college. I used this cohort of learners to

understand the impact of college on learner aspirations and whether the college changes these aspirations. Level 4 learners also have an understanding of the college activities and how these can have an impact on learners and the employability of graduates.

I conducted the focus group discussions during September of 2016 which is the third term of the college calendar. The focus group discussions were conducted on the college campus. Briefly, I arranged with the head of the civil construction department to be on the college campus at a time when the learners were free. Focus group discussion participants were conveniently recruited from the learners who were present at the time. I subsequently held three discussions with groups of between eight and 12 learners. I explained the purpose of the discussion and requested permission to record it. The learners all volunteered to participate in the discussion and they were not compensated for doing so. We all sat in a semi-circle with the tape recorder placed in the middle of the group.

Following the focus group discussions, I transcribed the voice recordings verbatim. I then analysed the transcripts manually for content and emerging themes to identify trends which I used to cross-validate the findings from the questionnaire survey. Emergent themes from the focus group discussions include the profile of the construction industry and its employment prospects for career choices, the ease of access and availability of places at TVET colleges, as well as the importance of the bursary for further studies. These will be discussed in more detail in Chapter 5.

4.4 Population and sampling

This study sought to investigate the career aspirations of learners enrolled in the National Certificate Vocational [NC(V)] construction programme at technical and vocational education and training (TVET) colleges. I used convenience sampling in the study and approached colleges that were accessible and where permission to undertake the study was granted. Both colleges have a single stream of learners enrolled in the three levels of the NC(V) programme and all learners on these levels were recruited to participate in the study.

The study population comprised all learners enrolled in the civil engineering and building construction programmes from entry level 2 to NC(V) level 4. The NC(V)

level 2 learner population was included to study the reasons that motivate learners coming out of secondary school to enrol for the NC(V) programme, as well as to study the highest school leaving qualification of learners as they enter the NC(V) programme. The NC(V) level 3 and 4 learners were used to investigate whether learners' experiences at the college affect their aspirations to continue with construction careers, and how much college exposure impacts on their understanding of the industry as well as their plans after graduating from the college.

The learners were drawn from two colleges in the peri-urban parts of the metropolitan areas of Tshwane and Ekurhuleni. As described in Chapter 2, the TVET colleges are multi-campus institutions with the majority of campuses being situated in historically black areas where they were meant to facilitate ease of access to career-oriented education.

College A is based in the peri-urban area of Pretoria. It is part of a multi-campus college system that consists of four campuses, two of which are in historically black areas and two in the historical industrial zones of the City of Tshwane. The NC(V) civil engineering and building construction programme is offered at a campus in the black township, with the NATED construction programme being offered at another historically black campus.

College B is based in the east of Johannesburg within the Ekurhuleni Metropolitan Area. It has six campuses spread between the historically black townships and urban areas. The NC(V) civil engineering and building construction programme is offered at a campus in the black township and this college does not offer the construction NATED programme.

4.5 Data collection

Following the selection of my research approach and the development of the main instruments which I used to collect my data, I report on some basic aspects of data collection in this section. This subsection sets out the context of the results, which I subsequently present in Chapter 5. Quantitative data collection commenced during May and ended in September of 2015.

The data were collected in two phases as described above, a quantitative first phase and a qualitative second phase. Furthermore, the first phase comprised two key activities: the piloting of the questionnaire and a main phase during which the questionnaire was administered to the test populations. The pilot was undertaken by myself with the help of the college staff. Pilot data were captured on an Excel spreadsheet and submitted to the STATOMET[9] division at the University of Pretoria for data cleaning and validation. I subsequently made adjustments to the questionnaire to rephrase ambiguous questions and remove questions that learners were unable to respond to. The main data collection was carried out in September 2015 and it took one day to administer the questionnaires to learners at each college.

In College A, the questionnaires were distributed to learners during their normal class periods. This college had six different groups of learners enrolled in NC(V) levels 2 to 4. In College B, data collection took place during the official college test period. In this instance all the learners in NC(V) levels 2 to 4 gathered in the college hall after their exams to complete the questionnaires. A few learners in College A declined to participate in the study and were excused while all the learners in College B participated. At both colleges the learners were requested to provide their cell phone contacts if they wished to be contacted for follow-up interviews during a later stage of the study.

During the completion of the questionnaires, I was accompanied by the college lecturers who provided assistance when the learners did not understand questions or where questions were misinterpreted.

The study was originally meant to target NC(V) level 2 and 4 learners. Yet, it proved difficult to differentiate between the groups because many learners at level 3 carry some level 2 subject and level 4 learners carry some level 3 subjects. It was therefore decided to differentiate the learners based on the number of years they had been on the campus. Accordingly, level 2 learners refers to learners in the first

[9] STATOMET is a unit of the Department of the Statistics at the University of Pretoria that provides statistical support to graduate students.

year of registration, level 3 refers to those in the second year and level 4 are learners who have been at the college for at least three academic years.

Data collection proceeded in both colleges without any problems. The total number of students who participated in the quantitative phase of the study is shown in Table 4.1 below.

Table 4.1: Study population

	College A	College B	Total
NC(V) 2	63	26	**88**
NC(V) 3	28	42	**69**
NC(V) 4	20	41	**60**
Total	**111**	**109**	**220**

Table 4.1 shows that 220 learners across the two colleges were approached to participate in the study. Of these, 111 were from College A and 109 from College B. The focus group discussion was only conducted at College A. The table below presents the characteristics of the learners who participated in the focus group discussion.

Table 4.2: Focus group discussion participants

Group	Level of study	Gender		Total
		Male	Female	
1	2	7	5	**12**
2	4	6	2	**8**
3	4	4	8	**12**
Total		**17**	**15**	**32**

The three focus group discussions comprised between eight and 12 learners. I conducted one discussion with the 12 level 2 learners, comprising seven males and

five females. The objective of this group was to investigate the aspirations of learners when they enrol at the colleges before the college experiences have had an impact on their aspirations. The other two discussion groups were held with level 4 learners to investigate the impact of the college on the learners' aspirations.

4.6 Validity and reliability

Validity in research is concerned with ensuring that the research instrument measures what it is supposed to measure, whereas reliability is the assurance that the measurements would yield similar results when repeated or administered by a different person. Both validity and reliability enable consumers of research to determine its credibility and contribution to knowledge. Mixed methods studies have to contend with the challenges of validity related to the two methodological traditions used to conduct this study and find a way of fusing the two to develop credible findings. Triangulation has been shown to increase the validity of mixed methods research.

In this study I triangulated data collection by using both quantitative and qualitative data collection methods. The results of the quantitative questionnaire survey were validated using qualitative focus group discussions in a sequential manner. To ensure the construct validity of the instruments I used for the questionnaire survey, I adopted criteria that have been used by other researchers in the study of career aspirations (Kruss et al., 2012). I thus developed the questionnaire items drawing from similar studies from across the world, namely, determinants of socioeconomic status, role modelling and parental influence. As already noted (section 4.), I also used the criteria used by Statistic South Africa (StatsSA, 2012) to ensure the construct validity of the learners' socioeconomic status as well as the credibility of the results. To render the data collection tools reliable, a pilot was used to test the questionnaire with a learner population with very similar attributes to the study population.

The generalisability of quantitative findings is of great concern in the research community. To facilitate the transferability of the research results, I administered the questionnaire to the whole population of learners enrolled in the NC(V) programme without sampling. This I did to improve the credibility of the data collection and to

address issues of researcher bias. I also found the inclusion of the total learner population useful, as I did not have to develop a sampling frame for the focus group discussion, but conveniently enrolled learners who were present on the day of data collection.

In section 4.4 gave a detailed description of the college's geographic location and administrative structure. The description of the college setting permits the applicability of the research findings to learners in similar socioeconomic and geographic environments. This validity check is referred to as "thick description" by Lincoln and Guba (1985). To increase the validity of qualitative phase of the study, I tape recorded the focus group discussions, transcribed them verbatim and manually analysed them for emerging themes.

4.7 Research ethics

Ethical considerations in pragmatic research are related to the attempt to gather knowledge in the pursuit of the desired goals (Morgan, 2007). The British Educational Research Association (BERA, 2011) guidelines for educational research establishes ethical criteria that are important when conducting educational research.

A significant ethical issue that I had to content with during the conduct of this study is my role at my place of employment, which facilitates skills development partnerships between the construction industry and educational institutions. I had to make sure that industry perceptions of the relevance of the NC(V) programme and the quality of learners at TVET colleges, as well my desire to facilitate more active placement opportunities, did not affect my data collection plan and the interpretation of the findings. I was also very aware of the fact that I had to desist from making any promises to the college or the learners, as these would have compromised participation in the study. Consequently, no incentives were offered to either the college or the learners during the conduct of the study.

To mitigate any unethical practices during the research process, the study proposal was presented to the University of Pretoria Research Review Board where consent was granted to conduct the research as proposed. Briefly, an application was submitted to the University Ethics Committee on the prescribed application forms. The application comprised of a completed application form, countersigned by the

research supervisor and head of department, a letter of application to undertake research sent to the college principals, and an introductory letter to the learners as well as a learner's letter of consent. Permission was granted by the university before I approached the two colleges (see Appendix A).

Permission to conduct the study was then sought from both colleges. Briefly, a letter of introduction on the University of Pretoria letterhead co-signed by the study supervisor was sent to the colleges explaining the aims and objectives of the study. This included a request to conduct research, a sample of the research questionnaire (Appendix B) and the learner consent letter (Appendix C). At College A the letter was referred to the central administration office where permission was granted to undertake research at all campuses under College A jurisdiction. The request to College B was sent to the head of the campus on which the civil engineering and building construction department is situated, who immediately granted permission.

Once permission had been granted a meeting was arranged with the head of the civil engineering and building construction department to further explain the purpose of the research, and to design a data collection plan that would not disrupt the learning programmes in the college.

During data collection, the aims and objectives of the research were explained to the learners in the presence of their lecturers and the consent letter was read out to them. They were assured that all responses would be anonymous and that they did not have to disclose their names or any other information that might be used to identify them. They were further informed that participation was voluntary and that learners who did not wish to participate would be excused or given the option of returning a blank questionnaire. There were no incentives offered to either the college or the learners to ensure participation. A few learners at College A declined to participate in the study and were excused, while all the learners at College B participated.

4.8 Limitations of the study

The throughput rate of the NC(V) programme is very poor and learners simultaneously register for two academic levels. This may have an impact on the assessment of the learners' college experience as those who have been in the

system for a long time may have developed negative attitudes. The initial aspirations of learner in Level 4 is also based on a retrospective recollection of their aspirations as they entered the college and may have been affected by their time at the college. Lastly, study did not attempt to assess the curriculum content and throughput rate of the college learners, nor how these impact on their career aspirations. This study also does not attempt to evaluate variations in the quality of teaching and learning at the different colleges.

4.9 Conclusion

The data were collected in consecutive stages with a questionnaire used to collect quantitative data. These were subsequently analysed and used to develop areas for clarification during the qualitative phase. The qualitative data were collected through focus group discussions with learners from College A to clarify and validate the findings of the quantitative phase. The data from focus group discussions were transcribed and analysed for content and themes. The findings of both the quantitative and qualitative phases of the study will be presented in Chapter 5.

5. CHAPTER 5 FINDINGS

5.1 Introduction

This chapter presents the findings of the study. The first part of the chapter will present descriptive statistics to characterise the learners who enrol for the TVET construction programme. This will encompass the learners' demographic profile, including their home province, educational background, parental socioeconomic status and other information which help describe and characterise the types of learner who enrol in the TVET college construction programme. This will be followed by an analysis of the learners' career decision-making processes by looking at their exposure to career guidance, the age at which they received the guidance and their perceptions of the usefulness of the guidance, as judged by the level of information provided and the counsellor bias. Next, the reasons for choosing construction careers, the intended trade specialisation, and plans after completing the TVET programme and desired career destinations and expected work opportunities will be presented.

Lastly, to investigate the impact of the TVET programme on the learners' career aspirations, the results of the learners' experiences of the programme, their favourite learning activity and how the college has influenced their decision to continue with construction careers will be presented.

5.2 Learners' demographic profile

The study population comprised of 220 learners enrolled for the NC(V) levels 2 to 4 in two urban TVET colleges. The characteristics and location of the colleges have been described in section 4.4 of the methodology section. This section describes the characteristics of the learners enrolled in the study using age, gender, home province, highest school leaving qualification, as well as current level of study at the TVET college.

5.2.1 Gender

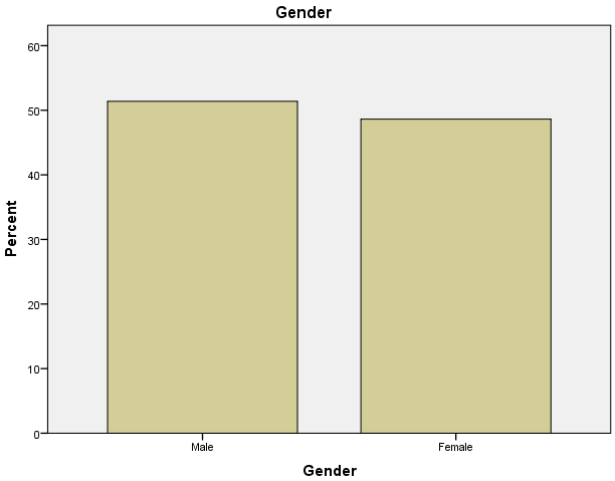


Figure 5.1 Learner gender

Figure 5.1 above shows that there were 113 (51.38%) male and 107 (48.62%) female learners. This is not consistent with the gender profile of the construction industry, which is significantly male dominated (Amaratunga, Haigh, Shanmugam, Lee, & Elvitigalage Dona, 2006; Jahn, 2009; NAWIC, 2014).

5.2.2 Learners' age and race profile

The average age of the learners was 22, with the youngest learners aged 17 and the oldest over 30 years of age.

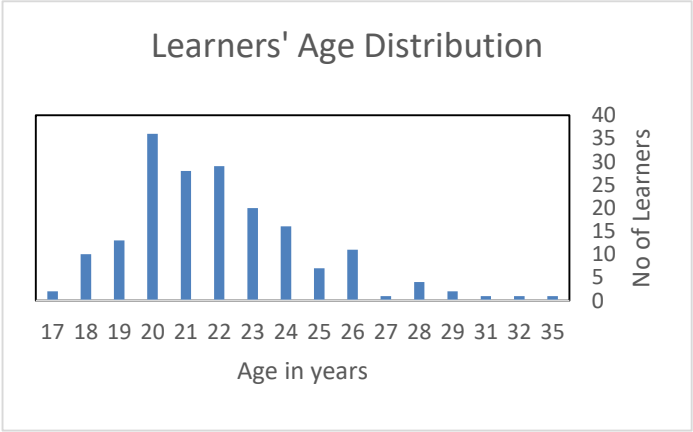


Figure 5.2 Age of learners

Most of the learners were between the ages of 18 and 24, the ages at which most young people complete their secondary schooling and enter tertiary education. There were a few learners older than the common school-going age, with the two oldest learners being 32 and 35 years respectively (Figure 5.2 above). Please note that for ethical reasons the findings relating to the two 17-year-olds were not used in further analysis.

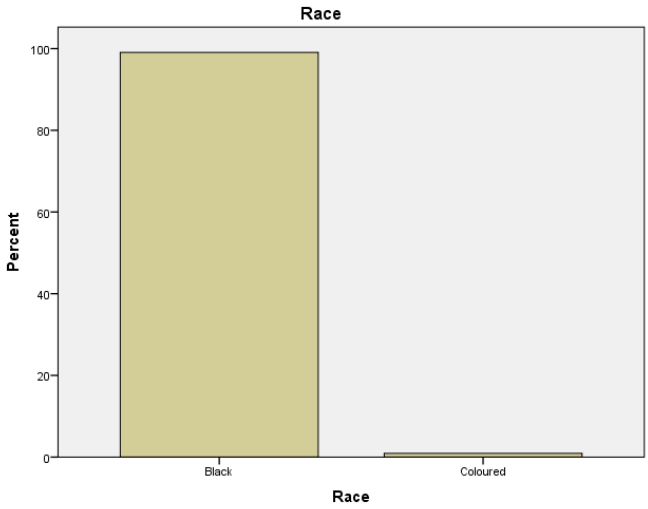


Figure 5.3: Learners' race

Consistent with the geographic location of the colleges and the historic spatial planning in South Africa, almost all the learners in the colleges (99.08%) were black African, with two (0.92%) classifying themselves as coloured. The colleges are located in black townships that were historically designed to cater for black learners from the surrounding areas.

5.3 Impact of gender on career aspirations

Gender has been shown to have a significant impact on career aspirations with youth choosing careers that are consistent with their gender socialisation (Auger et al., 2005) and therefore consistent with their gender. Females have, however, been shown to be more open to assuming cross-gender careers. Given the increased emphasis on the promotion of female participation in the construction industry, it was deemed important to investigate the impact of gender on the career aspirations of the learners.

5.3.1 School exit level by gender

The entry level for the NC(V) programme is a Grade 9 of the general education band. Studies have however shown that many learners only enrol at the TVET colleges after completing the national senior certificate (NSC) schooling level. The entry level on the NC(V) programme is also indicative of the length of time learners stay in school and their commitment to continue with their studies. The findings of the cross tabulation between the learners' school exit level by gender are presented in Table 5.1 below.

Table 5.1: Learners' school exit level by gender

	Entry qualification by gender			
	V7 Entry qualification	V1 Gender		
		Male	Female	Total
Frequency Percent Row % Col %	Grade 9	64 29.91 63.37 58.72	37 17.29 36.63 35.24	101 47.20
	Grade 12	45 21.03 39.82 41.28	68 31.78 60.18 64.76	113 52.80
	Total	109 50.93	105 49.07	214 100.00
	Frequency Missing = 4			

Statistic	DF	Value	Prob
Chi-square	1	11.8286	0.0006

In this study population, there were slightly more learners who had enrolled after Grade 12 than Grade 9 (52.8% and 47.2% respectively). In addition, more males than females (63.37% vs. 36.63%) had exited school at Grade 9 to enrol at the TVET college. Interestingly, Table 5.1 above shows that there were more females who had completed Grade 12 (60.18%) than males. The null hypothesis is thus rejected and a relationship between gender and exit level from school is established. This finding is consistent with the South African educational landscape where it has been reported

that female learners stay in school for longer than their male counterparts (Department of Education, Gauteng Province, 2017).

5.3.2 Learners' NSC results by gender

The learners' NSC results were cross tabulated by gender and the findings are displayed in Table 5.2 below. These show that female learners performed better than males in the NSC examinations.

Table 5.2: Learners' NSC results by gender

	Table of NSC results by gender			
	V8 NSC results	V1 Gender		
		Male	Female	Total
Frequency Percent Row % Col %	Batchelor pass	7 4.55 43.75 10.45	9 5.84 56.25 10.34	16 10.39
	Diploma pass	19 12.34 42.22 28.36	26 16.88 57.78 29.89	45 29.22
	Higher certificate pass	17 11.04 53.13 25.37	15 9.74 46.88 17.24	32 20.78
	Did not pass	24 15.58 39.34 35.82	37 24.03 60.66 42.53	61 39.61
	Total	67 43.51	87 56.49	154 100.00
	Frequency Missing = 64			

Statistic	DF	Value	Prob
Chi-square	3	1.6651	0.6447

The null hypothesis is supported and therefore there is no relationship between gender and the NSC pass rate. The findings show that slightly more females had completed Grade 12 of schooling (56.49% females and 43.51% males). The female learners also had better passes at the bachelor and diploma levels (56.25% bachelor and 57.78% diploma respectively). This is consistent with the South African statistics which report higher levels of achievement for female learners on the basic education level (Department of Education, Gauteng Province, 2017)

5.3.3 Level of study at college by gender

Table 5.3 below presents a cross tabulation of the learners' level of study by gender. Overall, there were slightly more males (51.61%) than females (48.39%) registered for the construction NC(V) programme, with more males being registered at both levels 2 and 3 (53.41% and 55.07% respectively). Only level 4 had a higher number of female learners (55%).

Table 5.3: Learners' level of study

	Level of study by gender			
	V12 Level of study	V1 Gender		
		Male	Female	Total
Frequency Percent Row % Col %	NC(V) 2	47 21.66 53.41 41.96	41 18.89 46.59 39.05	88 40.55
	NC(V) 3	38 17.51 55.07 33.93	31 14.29 44.93 29.52	69 31.80
	NC(V) 4	27 12.44 45.00 24.11	33 15.21 55.00 31.43	60 27.65
	Total	112 51.61	105 48.39	217 100.00
	Frequency Missing = 1			

Statistic	DF	Value	Prob
Chi-square	2	1.4950	0.4736

The null hypothesis is thus supported and there is no relationship between the learners' gender and level of study at the college.

5.3.4 Learner fees payments by gender

Access to financial assistance has been shown to be a significant factor in the decision to continue in education as well as the choice of study programme and institution. In some societies when there is financial pressure preference is given to educating male children (Dormeier Freire & Giang, 2012) as they are perceived to bring family prestige. The person responsible for the payment of learners' fees was investigated to determine whether there is a bias towards the education of female learners, and subsequent expression of their career aspirations.

Table 5.4: Person responsible for paying fees by gender

	Person responsible for paying learners' fees			
		V1 Gender		
	V21 Responsible person	Male	Female	Total
Frequency Percent Row % Col %	Father	10 4.67 62.50 9.09	6 2.80 37.50 5.77	16 7.48
	Mother	24 11.21 60.00 21.82	16 7.48 40.00 15.38	40 18.69
	Other	9 4.21 50.00 8.18	9 4.21 50.00 8.65	18 8.41
	I have a bursary	67 31.31 47.86 60.91	73 34.11 52.14 70.19	140 65.42
	Total	110 51.40	104 48.60	214 100.0
	Frequency Missing = 4			

Statistic	DF	Value	Prob
Chi-square	3	2.6910	0.4418

The null hypothesis is supported and therefore no relationship was found to exist between learners' gender and the person responsible for paying their fees.

Table 5.4 above shows that many learners had received a bursary for their studies, with 52.14% of the bursary recipients being female. The next most prevalent source of study financing was the learners' mothers, with 18.69% of the learners' fees paid by the mother. Interestingly, more males were supported by family, with mothers supporting 60% and 62.5% being supported by fathers. The significance of this is discussed in Chapter 6.

The null hypothesis is therefore supported and no relationship was found between the learners' gender and level of study.

5.3.5 Aspired for trade specialisation by gender

The NC(V) programme comprises four fundamental subjects and three technical subjects, and learners are expected to choose a trade specialisation very early in their enrolment, at NC(V) level 2. Table 5.5 below presents the learners' aspired to trade specialisation by gender.

Table 5.5: Learners' aspired trade specialisation by gender

	Learners' aspired to trade specialisation			
		Male	**Female**	**Total**
Frequency **Percent** **Row %** **Col %**	**Concrete structures**	17 8.06 58.62 15.45	12 5.69 41.38 11.88	29 13.74
	Carpentry and roofwork	38 18.01 60.32 34.55	25 11.85 39.68 24.75	63 29.86
	Bricklaying and masonry	31 14.69 41.33 28.18	44 20.85 58.67 43.56	75 35.55
	Plumbing	20 9.48 60.61 18.18	13 6.16 39.39 12.87	33 15.64
	(Roads / other)	4 1.90 36.36 3.64	7 3.32 63.64 6.93	11 5.21
	Total	110 52.13	101 47.87	211 100.00
	Frequency Missing = 7			

Statistic	DF	Value	Prob
Chi-square	4	7.7312	0.1019

The most popular trade overall was bricklaying followed by carpentry and roofwork, with concreting and road construction being the least popular. This trend is also reflected by the different genders with 58.67% (44/75) and 39.68% (25/63) of female learners indicating a preference for bricklaying and masonry, and carpentry and roofwork, respectively. Of interest is the fact that there were more females than males who indicated a preference for roadworks (63.64%; 7/11). It would be interesting to find out if this is indicative of the feminisation of the construction industry by studying the employment patterns and gender breakdown in the industry. The null hypothesis is thus supported, indicating that there is no relationship between the gender of the learners and their preferred trade specialisation.

5.4 Learners' home province

Table 5.6 below presents the learners' home provinces. It should be borne in mind that the two colleges are both in Gauteng province. The responses showed that the majority of learners, 41.12% and 42.06%, were from Limpopo and Gauteng provinces respectively, with the next highest learner enrolments coming from North West province (5.14%) and Mpumalanga (3.74%). The rest of the learners (7.94%) were from Eastern Cape, Free State, KwaZulu-Natal, Northern Cape and the Western Province.

Table 5.6: Learners' home province

rV5 – Home province	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Limpopo	88	41.12	88	41.12
Mpumalanga	8	3.74	96	44.86
Gauteng	90	42.06	186	86.92
Northwest Province	11	5.14	197	92.06
Other Provinces[10]	17	7.94	214	100.00
Frequency Missing = 4				

[10] Other provinces include Free State, Northern Cape, Western Cape, Eastern Cape and KwaZulu-Natal.

5.5 Impact of home province of career aspirations

Studies have shown that career aspirations are dependent on learners' geographic location, with urban learners being shown to have more ambitious aspirations and being more likely to act on them (Ali & McWhirter, 2006; Curtis et al., 2012; McCracken & Barcinas, 1991). The impact of geographic location on the career aspirations of this cohort of learners was thus assessed based on their home province.

5.5.1 Learners' home province and choice of trade specialisation

The learners' home province was ascertained to determine the influences of geographic location on the choice of trade specialisation. Table 5.7 shows that bricklaying was the learners' trade of choice, with 36.2% (75 learners) stating a preference for bricklaying. Bricklaying was also favoured by half the learners from Limpopo province (51.22%; 42). The second most popular choice of specialisation was carpentry and roofwork, which was chosen by 28.99% (60) learners. Of note is the observation that Gauteng learners' choices were balanced between all the four trades offered in the NC(V) programme, with 26.97% choosing carpentry and roofwork, 25.84% bricklaying and masonry, 21.35% concrete structures and 20.22% plumbing. The most popular choice for Mpumalanga learners was carpentry and roofwork at 62.50%. Concrete structures was the least favoured specialisation with learners from the other provinces, only chosen by learners in Gauteng (21.54%). There was very limited interest in roadworks with none of the learners from Mpumalanga and North West provinces indicating interest in this specialisation. The significance of these choices will be discussed in Chapter 6.

Table 5.7: Learner trade specialisation by home province

	Home province by trade specialisation						
		rV13 – Trade specialisation					
	rV5 – Home province	Concrete structures	Carpentry and roofwork	Bricklaying and masonry	Plumbing	(Roads / Other)	Total
Frequency Percent Row % Col %	Limpopo	3 1.45 3.66 10.71	23 11.11 28.05 38.33	42 20.29 51.22 56.00	8 3.86 9.76 24.24	6 2.90 7.32 54.55	82 39.61
	Mpumalanga	0 0.00 0.00 0.00	5 2.42 62.50 8.33	1 0.48 12.50 1.33	2 0.97 25.00 6.06	0 0.00 0.00 0.00	8 3.86
	Gauteng	19 9.18 21.35 67.86	24 11.59 26.97 40.00	23 11.11 25.84 30.67	18 8.70 20.22 54.55	5 2.42 5.62 45.45	89 43.00
	North West	3 1.45 27.27 10.71	2 0.97 18.18 3.33	4 1.93 36.36 5.33	2 0.97 18.18 6.06	0 0.00 0.00 0.00	11 5.31
	Other provinces	3 1.45 17.65 10.71	6 2.90 35.29 10.00	5 2.42 29.41 6.67	3 1.45 17.65 9.09	0 0.00 0.00 0.00	17 8.21
	Total	28 13.53	60 28.99	75 36.23	33 15.94	11 5.31	207 100.00
	Frequency Missing = 11						

5.5.2 Access to bursaries by province

A bursary has been shown to have a significant impact on learners' decisions to continue their studies. Table 5.8 below presents a cross tabulation of the learners' access to bursaries by home province.

Table 5.8: Access to bursaries by home province

	Home province and access to bursary			
		V31e Access to bursary		
	Home Province	.	Access to bursary	Total
Frequency Percent Row % Col %	.	2 0.92 50.00 2.17	2 0.92 50.00 1.59	4 1.83
	Limpopo	32 14.68 36.36 34.78	56 25.69 63.64 44.44	88 40.37
	Mpumalanga	3 1.38 37.50 3.26	5 2.29 62.50 3.97	8 3.67
	Gauteng	43 19.72 47.78 46.74	47 21.56 52.22 37.30	90 41.28
	Northwest Province	5 2.29 45.45 5.43	6 2.75 54.55 4.76	11 5.05
	Other Provinces	7 3.21 41.18 7.61	10 4.59 58.82 7.94	17 7.80
	Total	92 42.20	126 57.80	218 100.00

Table 5.8 above shows that 57.8% of the learners enrolled in the programme received a bursary from the college. The provinces with highest number of bursary recipients were Limpopo (63.64%) and Mpumalanga (62.50). Gauteng and North West had the lowest percentage of learners with bursaries at 54.55% and 52.22% respectively. The significance of this will be discussed in later sections.

5.5.3 Home province and school exit level

Enrolment in the NC(V) programme can take place either on completion of Grade 9 or Grade 12. As presented in Table 5.9 below, Limpopo province had the highest number of learners who had completed Grade 12, (77.01%; 67), whilst the majority of Gauteng and North West learners had enrolled in college after completing Grade 9, (71.91%; 64/89 and 70.00%; 7/10, respectively). The significance of the school exit level on the aspirations of learners enrolled in TVET programmes is discussed in Chapter 6.

Table 5.9: School exit level by home province

	Home province by level of exit from school			
		V7 Level of exit from school		
	rV5 – Home Province	Grade 9	Grade 12	Total
Frequency Percent Row % Col %	Limpopo	20 9.48 22.99 20.00	67 31.75 77.01 60.36	87 41.23
	Mpumalanga	4 1.90 50.00 4.00	4 1.90 50.00 3.60	8 3.79
	Gauteng	64 30.33 71.91 64.00	25 11.85 28.09 22.52	89 42.18
	North West 23	7 3.32 70.00 7.00	3 1.42 30.00 2.70	10 4.74
	Other provinces	5 2.37 29.41 5.00	12 5.69 70.59 10.81	17 8.06
	Total	100 47.39	111 52.61	211 100.00
	Frequency Missing = 7			

5.5.4 Access to career guidance by home province

The importance of career guidance for learners' aspirations is well documented (Gewer, 2009; Lapan & Jingeleski, 1992).

Table 5.10: Career guidance by home province

	Career guidance by home province				
	rV5 – Home Province	V25- Did you receive any career guidance while at school?			
		.	Yes	No	Total
Frequency Percent Row % Col %	.	0 0.00 0.00 0.00	4 1.83 100.00 2.22	0 0.00 0.00 0.00	4 1.83
	Limpopo	0 0.00 0.00 0.00	78 35.78 88.64 43.33	10 4.59 11.36 27.78	88 40.37
	Mpumalanga	0 0.00 0.00 0.00	7 3.21 87.50 3.89	1 0.46 12.50 2.78	8 3.67
	Gauteng	2 0.92 2.22 100.00	70 32.11 77.78 38.89	18 8.26 20.00 50.00	90 41.28
	North West	0 0.00 0.00 0.00	8 3.67 72.73 4.44	3 1.38 27.27 8.33	11 5.05
	Other provinces	0 0.00 0.00 0.00	13 5.96 76.47 7.22	4 1.83 23.53 11.11	17 7.80
	Total	2 0.92	180 82.57	36 16.51	218 100.00

Table 5.10 above shows that most schools offer career guidance, with 82.57% of the learners receiving career guidance while at school. The provinces with the least exposure to career guidance are Gauteng (77.78%) and North West (72.73%). The learners with the highest exposure to career counselling were from Limpopo and Mpumalanga, at 87.5% and 88.64% respectively.

5.5.5 Aspired to career by home province

To investigate the relationship between the home province and career aspirations, the learners were asked to indicate the careers they aspired to after exiting from college. The most popular activity was business owner, which was chosen by 51.52% of Limpopo and 33.33% of Gauteng learners. This was closely followed by quantity surveyor, which was chosen by 40% of Limpopo and 32% of Gauteng learners, and project manager and engineer which were popular with 50.00% and 46.88% of Gauteng learners respectively. At 25%, construction supervisor was the most popular choice for Mpumalanga learners, with the majority of North West learners (27.27%; 3/11) choosing quantity surveying.

General construction worker and qualified artisan, the most feasible career destinations for the NC(V) graduates, were the least popular career destinations with construction worker chosen by only five learners, while only 13.76% (30/218) learners chose qualified artisan. The impact of these findings on the career aspirations and expectations of the learners will be discussed in Chapter 6.

5.6 Learners' educational profile

Career aspirations have been shown to have a direct influence on educational achievement, with learners with higher aspirations performing better than their low aspiration counterparts (Coffman, 2011; MacBrayne, 1987). Aspirations also determine the learners' information-seeking behaviour, as well as their choice of subjects at school (McCracken & Barcinas, 1991; Piata & Pirtle, 2006). To investigate the impact of aspirations on this cohort of learners they were asked about their highest school exit level, the results they had obtained at school as well as the construction careers they aspired to.

5.6.1 Highest school qualification

The Post School Education and Training (PSET) policy states the entry level to the National Certificate Vocational programme in TVET colleges as a Grade 9 qualification in the General Education and Training (GET) band (DHET, 2013). Forty-seven percent (47%) of the learners in the study had Grade 9 as their highest school

qualification, with 53% having completed the National Senior Certificate (NSC), commonly referred to as Grade 12 (Figure 5.4 below).

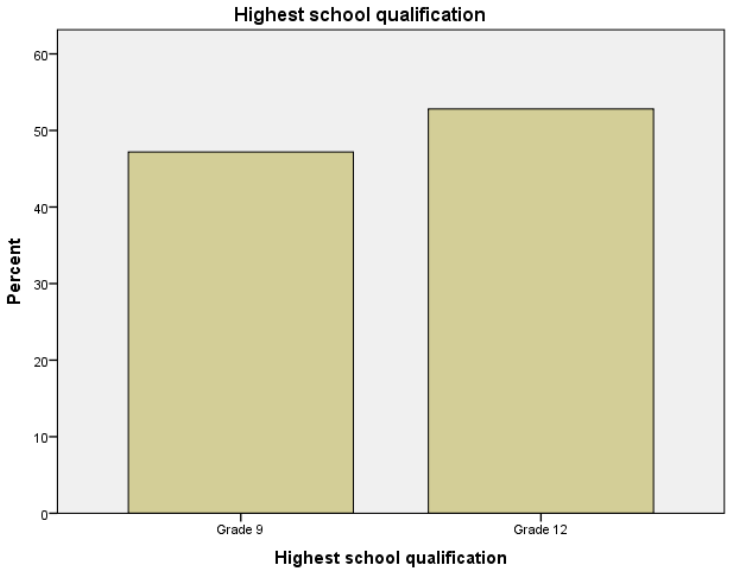


Figure 5.4: Learners' highest school qualification

The learners' level of study at the college was also determined and is presented in Figure 5.5 below.

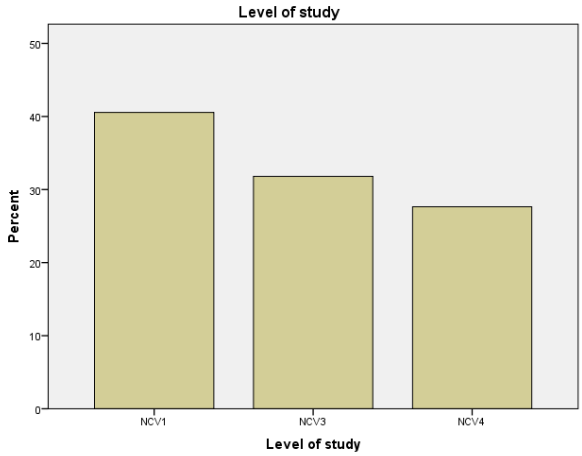


Figure 5.5: Learners' study level at college

The National Certificate Vocational [NC(V)] consists of three study levels, namely, levels 2, 3 and 4, all undertaken as fulltime, year-long programmes at college. The curriculum of each of the three levels is independent and provides for learners to exit college and enter the job market on completion. The study population consisted of

40% entry level 2, 32% level 3 and 28% level 4 that is, the final level (Figure 5.5 above).

5.6.2 Learners' NSC pass rate

The learners' NSC pass rate gives an indication of their performance in the school-leaving examination. This was used as a proxy for the learners' academic performance at school and is presented in Figure 5.6 below.

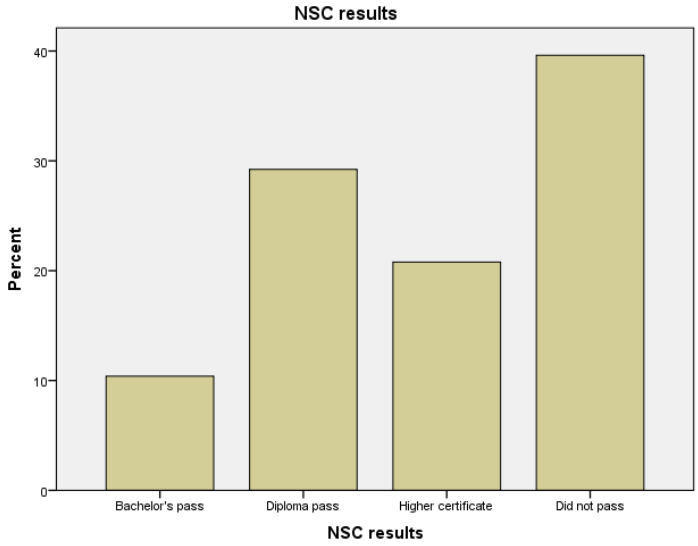


Figure 5.6: Learners' grade 12 (NSC) results

The Grade 12 results presented in Figure 5:6 show that 60% of the learners who had completed the NSC had attained a pass, which enabled them to continue to the higher education band. Of these, 10% had obtained bachelor passes which qualified them to enrol at universities, 29% had the diploma passes required for enrolment at universities of technology, 21% had the higher certificate passes required for entry into occupational training and certificate programmes in both universities and universities of technology, while 39% did not pass matric.

5.7 Impact of school exit level on learners' aspirations

The learners' school exit level has an impact on their career aspirations because it affects their exposure to career guidance, their choice of subjects as well as their results in the NSC examinations. The findings on the learners' exit level from school were cross tabulated with access to bursaries, planned trade specialisation and activities after college. The school exit level also influences access to information

including knowledge about bursaries. Consequently, the learners' school exit level was investigated, and the findings are presented below.

Table 5.11: Access to bursary by school exit level

	Access to bursary by level of school exit			
	V7 Level of school exit	V31e Access to bursary		
		.	Access to bursary	Total
Frequency	.	2	2	4
Percent		0.92	0.92	1.83
Row %		50.00	50.00	
Col %		2.17	1.59	
	Grade 9	54	47	101
		24.77	21.56	46.33
		53.47	46.53	
		58.70	37.30	
	Grade 12	36	77	113
		16.51	35.32	51.83
		31.86	68.14	
		39.13	61.11	
	Total	92	126	218
		42.20	57.80	100.00

Table 5.11 above shows that there were slightly more learners who exited school after Grade 12 (51.83%) than Grade 9 (46.33%). The findings further show that significantly more Grade 12 learners (68.14%) accessed the bursary provided by the college. The significance of the bursary for enrolling in the TVET college has been reported earlier and was supported by the focus group discussions. This will be discussed in more detail in Chapter 6.

The NC(V) programme is meant to prepare learners for immediate entry to the world of work or to provide articulation into higher education. To provide more information in this regard, the learners in this study were asked to comment on their plans after graduation from the college. Tables 5.12 to Table 5.30 below present the results of the learners' responses on their intended activities after graduating from college.

Table 5.12: Plans after graduation by school exit level

	Plans after graduation by school exit level			
	V7 Level of exit from school	Plans after graduating from college		
		.	Study further at university	Total
Frequency	.	0	4	4
Percent		0.00	1.83	1.83
Row %		0.00	100.00	
Col %		0.00	3.15	
	Grade 9	50	51	101
		22.94	23.39	46.33
		49.50	50.50	
		54.95	40.16	
	Grade 12	41	72	113
		18.81	33.03	51.83
		36.28	63.72	
		45.05	56.69	
	Total	91	127	218
		41.74	58.26	100.00

The most commonly cited plan after graduating from college was to continue with studies at university level (58.26% of the learners). Significantly, this intention was cited by both those learners who had exited at Grade 9 and those who had exited at Grade 12. However, there were significantly more Grade 12 (63.72%, 72/113) learners who mentioned the intention to continue with university level studies. This finding supports the hypothesis that Grade 12 learners enrol in TVET colleges as a stepping stone to higher education and may be attracted by the financial aid and ease of access offered by TVET colleges. In addition, an equal split was found between Grade 9 learners who wished to continue with university studies and those who did not wish to follow this route (51 vs. 50 learners).

Table 5.13: Plans after graduation by school exit level

	Plans after graduating by school exit level			
	V7 Level of exit from school	V37c Plans after graduating from college		
		.	Start work immediately	Total
Frequency	.	3	1	4
Percent		1.38	0.46	1.83
Row %		75.00	25.00	
Col %		1.94	1.59	
	Grade 9	68	33	101
		31.19	15.14	46.33
		67.33	32.67	
		43.87	52.38	
	Grade 12	84	29	113
		38.53	13.30	51.83
		74.34	25.66	
		54.19	46.03	
	Total	155	63	218
		71.10	28.90	100.00

Table 5.13 above shows that the next most cited activity after completion of college was starting work immediately (28.90%; 63 learners). Interestingly, more Grade 9 than Grade 12 learners indicated this preference. This is significant as the TVET qualification is intended to prepare young people for immediate entry to the world of work in intermediate level positions (Adams, 2011; Baraki & Kemenade, 2013; Lamb, 2011; McGrath, 2012; Oketch, 2007; Pongo et al., 2014).

Table 5.14: Plans after graduation by school exit level

	Plans after graduating by school exit level			
	V7 Level of exit from school	V37b Plans after graduating from college		
		.	Study at a university of technology	Total
Frequency Percent Row % Col %	.	4 1.83 100.00 2.52	0 0.00 0.00 0.00	4 1.83
	Grade 9	69 31.65 68.32 43.40	32 14.68 31.68 54.24	101 46.33
	Grade 12	86 39.45 76.11 54.09	27 12.39 23.89 45.76	113 51.83
	Total	159 72.94	59 27.06	218 100.00

The next most cited activity after completion of college was studying at universities of technology (27.06%; 59 learners), with slightly more Grade 9 learners (54.24%; 32/59) than Grade 12 learners favouring this option. Very few learners mentioned plans to open their own business (17.89%; 39 learners) or change careers and continue studying further (5.50%; 12 learners). The low number of learners wishing to start their own businesses is of concern as TVET programmes are meant to inculcate an entrepreneurial mindset and encourage youth to start their own businesses (Akoojee, 2009; McGrath, 2005; Oketch, 2007; Pongo et al., 2014).

5.7.1 Learners' favourite subjects

The learners' favourite subjects at college are an indication of their interests and can be used as a proxy for their intended careers beyond the college. Many learners

reported construction planning, and plant and equipment as their favourite subjects. The findings are presented in Tables 5.15 and 5.16 below.

Table 5.15: Learners' favourite subject by school exit level

	Learners' favourite subject by school exit level				
	V7 Level of exit from school	V39a - Learners' favourite subject			
		.	Construction planning	Materials	Total
Frequency	.	1	3	0	4
Percent		0.46	1.38	0.00	1.83
Row %		25.00	75.00	0.00	
Col %		0.88	2.91	0.00	
	Grade 9	57	44	0	101
		26.15	20.18	0.00	46.33
		56.44	43.56	0.00	
		50.00	42.72	0.00	
	Grade 12	56	56	1	113
		25.69	25.69	0.46	51.83
		49.56	49.56	0.88	
		49.12	54.37	100.00	
	Total	114	103	1	218
		52.29	47.25	0.46	100.00

Table 5.16: Learners' favourite subject by school exit level

	Learners' favourite subject by school exit level			
		V39c - Learners' favourite subject		
	V7 Level of exit from school	.	Plant and equipment	Total
Frequency	.	3	1	4
Percent		1.38	0.46	1.83
Row %		75.00	25.00	
Col %		2.10	1.33	
	Grade 9	71	30	101
		32.57	13.76	46.33
		70.30	29.70	
		49.65	40.00	
	Grade 12	69	44	113
		31.65	20.18	51.83
		61.06	38.94	
		48.25	58.67	
	Total	143	75	218
		65.60	34.40	100.00

5.8 Aspired to job by school exit level

The NC(V) programme is designed to prepare learners for entry to the world of work as construction supervisors in intermediate level positions and as qualified artisans. The programme can also be used as a stepping stone to higher education in universities and universities of technology. When asked to indicate their preferred or aspired to jobs on completion of the programme, many learners mentioned construction supervisor, business owner, artisan and quantity surveyor. The findings for aspired to careers were further analysed for level of exit from school.

Table 5.17: Learners' expected career by school exit level

		Learners expected career by school exit level		
	V7 Level of exit from school	V35b - Learners expected career		
		.	Qualified artisan	Total
Frequency	.	4	0	4
Percent		1.83	0.00	1.83
Row %		100.00	0.00	
Col %		2.13	0.00	
	Grade 9	84	17	101
		38.53	7.80	46.33
		83.17	16.83	
		44.68	56.67	
	Grade 12	100	13	113
		45.87	5.96	51.83
		88.50	11.50	
		53.19	43.33	
	Total	188	30	218
		86.24	13.76	100.00

Table 5.17 above shows that very few learners aspired to jobs as artisans, one of the major employment categories the NC(V) programme is planned to prepare them for. There was no significant difference in this regard between the learners who had exited school at either Grade 9 or Grade 12.

Table 5.18: Learners' expected career by school exit level

		Learners expected career by school exit level		
		V35c - Learners expected career		
	V7 Level of exit from school	.	Construction supervisor	Total
Frequency	.	4	0	4
Percent		1.83	0.00	1.83
Row %		100.00	0.00	
Col %		2.27	0.00	
	Grade 9	84	17	101
		38.53	7.80	46.33
		83.17	16.83	
		47.73	40.48	
	Grade 12	88	25	113
		40.37	11.47	51.83
		77.88	22.12	
		50.00	59.52	
	Total	176	42	218
		80.73	19.27	100.00

Construction supervisor, another career option for NC(V) learners, was only chosen by 19.27% of the learners. Interestingly, as presented in Table 5.18 above, slightly more Grade 12 learners expected to get positions as construction supervisors. In addition, more Grade 12 learners indicated a desire to take up careers in the world of work as quantity surveyors. It is important to note here that quantity surveying is a professional career which requires university-level studies, so it was noteworthy that the learners who expected quantity surveying careers had completed Grade 12 and could articulate to universities after completion of their TVET studies. This expectation of a professional career could also be an indication of the impact of the TVET programme on learners, as it had introduced them to career options they might not have been aware of before enrolling at the TVET colleges. Learners' socioeconomic status

Socioeconomic background influences occupational and educational aspirations (Creed et al., 2006; Hill et al., 2003; MacBrayne, 1987), with the learners' socioeconomic status being dependent on their primary caregiver.

5.8.1 Learners' primary caregiver

To assess the socioeconomic background of the learners enrolled in the study they were asked to indicate their primary caregiver. A majority of learners (41.6%) came from female-headed households and lived with their mother only, 26.2% lived with both a mother and a father, 5.6% with a father only, and 26.2% indicated they lived with others (Figure 5. 7). The "other" category included grandmothers, siblings, aunts and uncles, with the grandmother being the most common caregiver for learners who reported the "other" category.

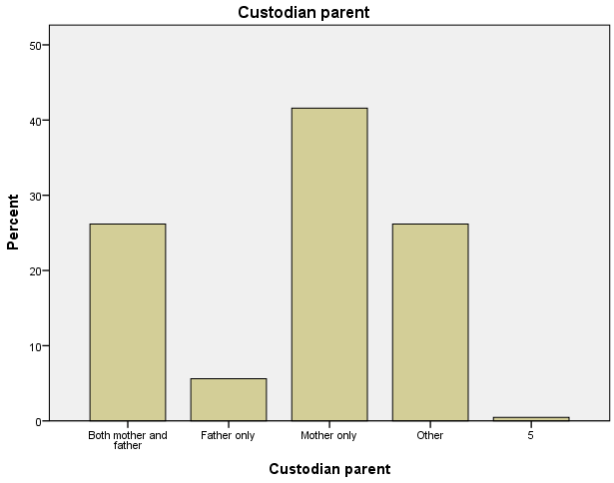


Figure 5.7: Learners' primary care giver

5.8.2 Parental educational level

To assess the educational levels of the learners' parents they were asked to state their father's and mother's highest qualifications. The numbers used for these analyses are the total reported cases irrespective of whether the learner lives with the parent concerned or not. The results are presented separately for fathers and mothers, but are combined in the discussion.

Table 5.19: Father's highest qualification

rV15 –Highest qualification	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Below Grade 9	35	38.89	35	38.89
Grade 12	32	35.56	67	74.44
Diploma level/Technical qualification	13	14.44	80	88.89
Degree/Postgraduate degree	10	11.11	90	100.00
Frequency Missing = 128				

Table 5.19 above shows that the majority of learners' fathers (38.89%) had an educational level below Grade 9, which is less than the nine years of compulsory schooling. The next highest proportion (36.56%) had 12 years of schooling, with very few having progressed beyond high school and obtained a diploma, degree or technical qualification (25.55%).

Table 5.20: Mother's highest qualification

rV16 – Highest qualification	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Below Grade 9	70	44.30	70	44.30
Grade 12	65	41.14	135	85.44
Diploma level/Technical qualification	14	8.86	149	94.30
Degree/Postgraduate degree	9	5.70	158	100.00
Frequency Missing = 60				

The educational level of the mothers in this study population was slightly lower than the fathers' levels, with 44.3% having less than a Grade 9 education (see Table 5.20 above) and 41.14% having completed Grade 12. There were also fewer mothers with post-secondary education at diploma, degree or technical levels (15.56%).

5.8.3 Parental employment

Parental employment is an indicator of the financial resources flowing to the family. Accordingly, the employment status of the learners' fathers and mothers was assessed and reported separately.

Table 5.21: Father's employment status

rV17 – Employment status	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Unemployed	38	38.78	38	38.78
Domestic worker/Manual labour	14	14.29	52	53.06
Self-employed	17	17.35	69	70.41
Administrative work/Managerial work/Sales work	6	6.12	75	76.53
Professional work/Technical work	13	13.27	88	89.80
Other	10	10.20	98	100.00
Frequency Missing = 120				

A majority of the learners' fathers were unemployed (38.78%), with the next highest category being self-employed (17.35%). The rest of the fathers were either employed as manual workers (14.29%), or employed in technical or professional positions (13.27%) (see Table 5.21 above).

Table 5.22: Mother's employment status

rV18 – Employment status	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Unemployed	94	54.34	94	54.34
Domestic worker/Manual labour	30	17.34	124	71.68
Self-employed	10	5.78	134	77.46
Administrative work/Managerial work/Sales work	19	10.98	153	88.44
Other	8	4.62	173	100.00
Frequency Missing = 45				

Table 5.22 above shows that a majority of the learners' mothers were unemployed (54.34%). This is significant as many learners come from female-headed households (Figure 5.7). Of the employed group, the most prevalent form of employment was domestic work and manual labour (17.34%). Of those in formal employment, about

seven percent (6.94%) was employed in professional and technical positions and the rest in administrative, managerial and sales positions (10.98%).

5.8.4 Parental income

Family income determines the family's socioeconomic status and the learners' capability to aspire to more prestigious careers. For this reason, the learners were asked to indicate their parents' income levels. The results are presented in Table 5.23 for the fathers and Table 5.24 for the mothers.

Table 5.23: Father's income level

rV19 - Income level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
No fixed income	25	27.78	25	27.78
R1 – R1400	9	10.00	34	37.78
R1400 – R3000	5	5.56	39	43.33
R3001 – R6400	4	4.44	43	47.78
R6401 – R12 800	10	11.11	53	58.89
Above R12 801	3	3.33	56	62.22
I don't know	33	36.67	89	98.89
10	1	1.11	90	100.00
Frequency Missing = 128				

The majority of learners (36.67%) indicated that they did not know their father's income level, with 27.78% reporting that their fathers did not have a fixed income. The next largest group of fathers (11.11%) had an income of between R6401 and R12 800, a level classified as lower middle class (StatsSA 2008).

Table 5.24: Mother's income level

rV20 – Income level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
No fixed income	65	42.48	65	42.48
R1 – R1400	18	11.76	83	54.25
R1400 – R3000	17	11.11	100	65.36
R3001 – R6400	7	4.58	107	69.93
R6401 – R12 800	5	3.27	112	73.20
Above R12 801	4	2.61	116	75.82
I don't know	36	23.53	152	99.35
10	1	0.65	153	100.00
Frequency Missing = 65				

Table 5.24 above shows that a majority of the learners' mothers, consistent with their employment status, did not have a fixed income (42.48%), with 11.76% indicating that their mothers' income was R1400 – the equivalent of the state subsidy for old age pensions and other government social grants. Twenty-five percent (23.53%) of the learners did not know their mothers' income levels. As most of the mothers were unemployed it is assumed that they did not have fixed incomes.

5.8.5 Type of family dwelling

The type of family dwelling was assessed to validate the socioeconomic status of the learners' families. Table 5.25 below shows that most (47.93%) of the learners' families had a solid brick house in their own yard, 27.65% lived in state-subsidised housing, 11.98% in informal structures and 5.07% in other types of dwelling, with very few (2.30%) living in flats or townhouses in towns. The significance of the family dwelling for the socioeconomic status will be discussed in a later section.

Table 5.25: Type of family dwelling

rV22 – Family dwelling	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Brick house in own yard	104	47.93	104	47.93
Traditional thatched house	11	5.07	115	53.00
Informal structure	26	11.98	141	64.98
Flat in town/Townhouse (cluster)	5	2.30	146	67.28
RDP house	60	27.65	206	94.93
Other	11	5.07	217	100.00
Frequency Missing = 1				

5.9 Financial access

Financial access has been shown to influence career aspirations and career choices (Coffman, 2011; Schoon & Polek, 2011). Financial resources and the ability to fulfil the financial requirements of a chosen career are a significant factor in career choice. To investigate the impact that financial resources and financial access have on the learners' choices they were asked about the person(s) responsible for their fees.

Table 5.26: Person responsible for learners' fees

rV21 – Person responsible for fees	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Father	16	7.48	16	7.48
Mother	40	18.69	56	26.17
Brother/sister/aunt/uncle/other	18	8.41	74	34.58
I have a bursary	140	65.42	214	100.00
Frequency Missing = 4				

Most of the learners (65.42%) had a bursary, 18.69% were supported by their mothers and 7.48% by their fathers. The importance of the bursary was further investigated in the qualitative phase of the study and the findings in this regard are reported in section 5.12.4.

The learners were asked to indicate whether they had siblings enrolled in post-school education, and it so, to indicate their number. Figure 5.8 below presents the findings of learners with siblings in post-school education.

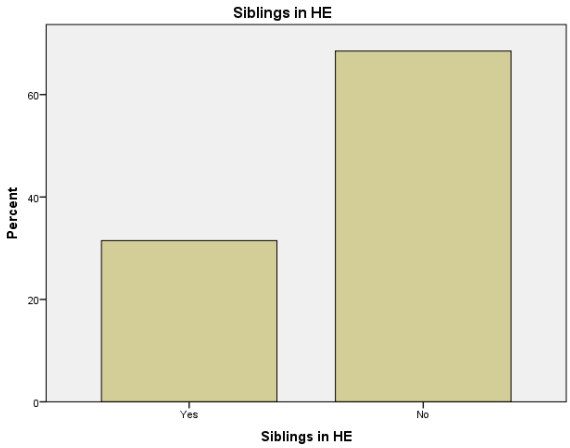


Figure 5.8: Learners with siblings in higher education

Most of the participants in the study were the first in their families to attend post-school institutions (68%), with only 32% of the learners reporting having siblings in higher education. Figure 5.9 below shows that a majority (75%; 51) of the learners who had siblings in post-school education had one sibling, and 17% and 7.35% (12 and 5) had two and three siblings respectively.

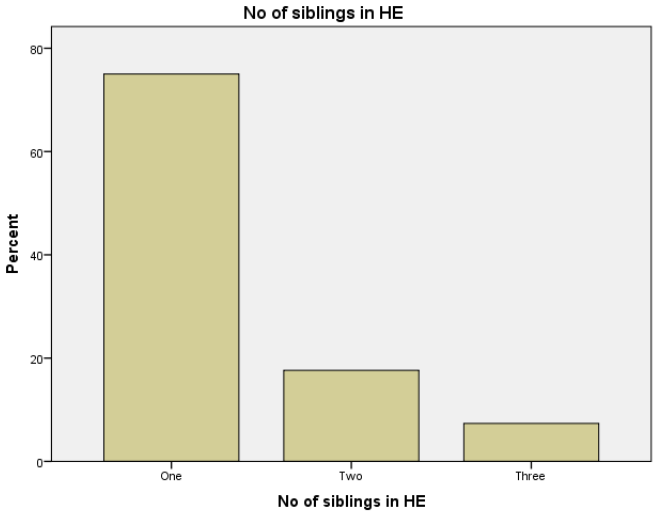


Figure 5.9: Number of siblings in higher education

5.10 Access to career guidance

Career decision making is influenced by exposure to career guidance. Career guidance at school provides learners with basic information about the types of career available and the educational requirements to enter these. To investigate the age of career decision making, and the factors that influenced the learners' career choice, it was important to investigate their access to career guidance, the age at which they received such guidance, and their perception of its usefulness to their decision making.

5.10.1 Access to career guidance

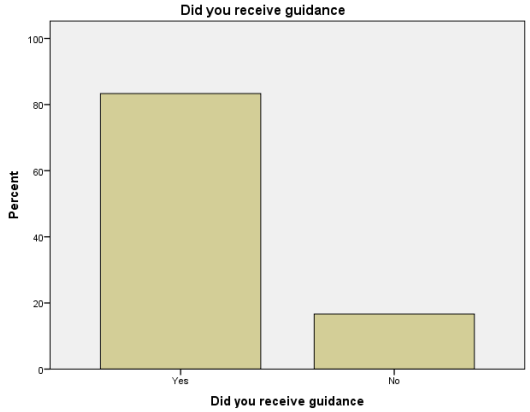


Figure 5.10: Learners' access to career guidance

Figure 5.10 above shows that 83% of the learners in this study had received some form of career guidance while in school.

5.10.2 Age of career guidance

The South African school system requires learners to make subject choices that affect their future careers in Grade 9 of the General Education and Training (GET) stage. To investigate the impact of career guidance on the learners' choice of subjects and career decisions, learners were asked to indicate the school grade in which they had first received career guidance.

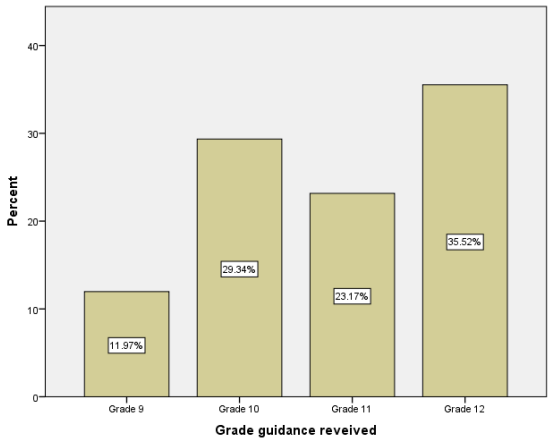


Figure 5.11: School grade at which career guidance was received

Figure 5.11 above shows that most of the learners received career guidance during Grade 12 (35.52%), followed by Grade 10 at 29.34%, with the least (11.97%) receiving career guidance in Grade 9. Since subject choices are made at the end of Grade 9, it is concluded that most learners received career guidance after choosing their subjects and thus may not necessarily have chosen subjects relevant to their career aspirations. The significance of this finding is discussed in a later section.

5.10.3 Sources of career information

To investigate the motivations for career decision making, the learners were asked to indicate where they had received career guidance and their perceptions of the usefulness of the guidance.

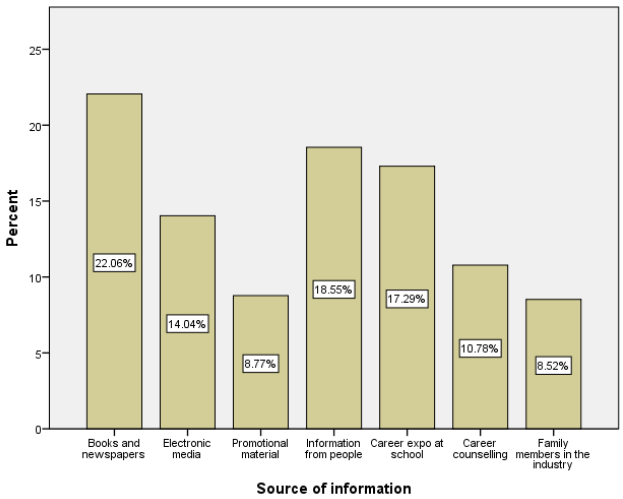


Figure 5.12: Source of career information

Learners' decision making is based on the types of information they have access to, as well as the life stage at which they access the information (Coffman, 2011; Lapan & Jingeleski, 1992). As presented in Figure 5.12 above, the most significant sources of information about construction careers were books and newspapers (22.06%), people in the industry (18.55%), career expos at school (17.29%) and electronic media (14.04%).

5.10.4 Quality and value of career guidance

When asked to comment on the value the guidance added to their career decision-making process, most learners reported that it was good (37.81%) and very good (27.36%). Learners indicated that it provided useful information and helped them make decisions about their careers (Figure 5.13 below).

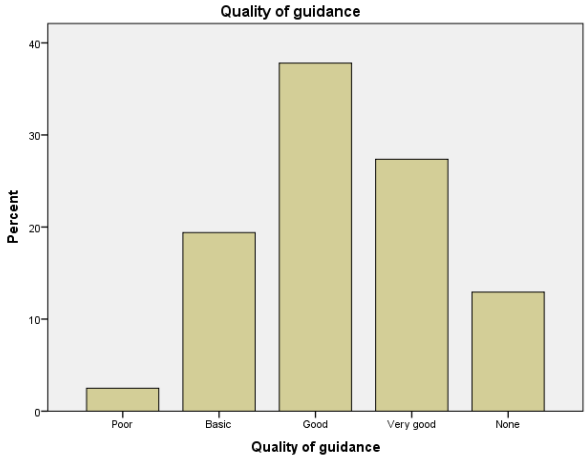


Figure 5.13: Learners' perception of the quality of career guidance

When asked to comment about the type of career guidance they had received, the majority of the learners regarded it as useful to their career decision-making processes (see Figure 5.14 below).

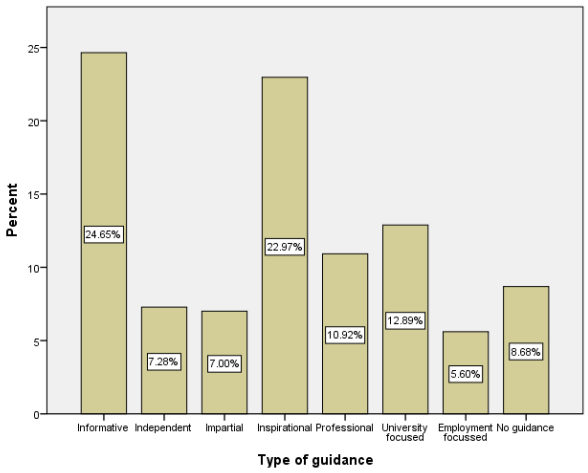


Figure 5.14: Learners' perception of the type of career guidance

Figure 5.14 above presents the learners' perceptions of the kind of career counselling they received. It shows that many learners (24.75%) regarded the career guidance as informative, and felt that it gave them all the options that were available in the post-school educational phase. The career guidance was also regarded as inspirational (22.97%), independent and impartial (7.0% and 7.28% respectively). The learners also stated that it was provided in a professional manner without unnecessary bias towards university studies, with only 12.69% perceiving it as university focused. Only 8.68% of the learners had not received any career guidance during their schooling.

5.10.5 Learners' NSC pass and career guidance

To further assess the perceived usefulness of the career guidance to the learners' aspirations, a cross tabulation of the NSC results of those learners who had completed Grade 12 and had had access to guidance was performed. Table 5.27 shows that significantly more learners who had received career guidance (63.5%) passed the NSC with results that enabled them to progress to higher education, that is, bachelor, diploma or higher certificate passes, than those that had not received any career guidance (36.3%). These findings show that career guidance has a positive impact on learner performance and will be discussed further in a subsequent section.

Table 5.27: Learners' NSC results and career guidance

NSC results and career guidance					
			Learners who received guidance		Total
			Yes	No	
NSC results	Bachelor's pass	Count	15	1	16
		% within Did you receive guidance	10.9%	5.9%	10.4%
	Diploma pass	Count	42	3	45
		% within Did you receive guidance	30.7%	17.6%	29.2%
	Higher certificate	Count	30	2	32
		% within Did you receive guidance	21.9%	11.8%	20.8%
	Did not pass	Count	50	11	61
		% within Did you receive guidance	36.5%	64.7%	39.6%
Total		Count	137	17	154
		% within Did you receive guidance	100.0%	100.0%	100.0%

5.11 Career decision making

To investigate the major influences on the learners' career choices, they were asked about the reasons for choosing construction careers, the level of schooling at which the decisions were made and the most significant influence on the decision-making process.

5.11.1 Age of career decision making

The learners were asked to indicate the educational levels at which they had made the decision to embark on careers in the construction industry. Most learners (48%) made the decision during their secondary schooling, followed by 32% who made the decision after completing Grade 12 (Figure 5.15). Very few reported making the decision either during the Grade 12 year (14%) or during their primary education (6%).

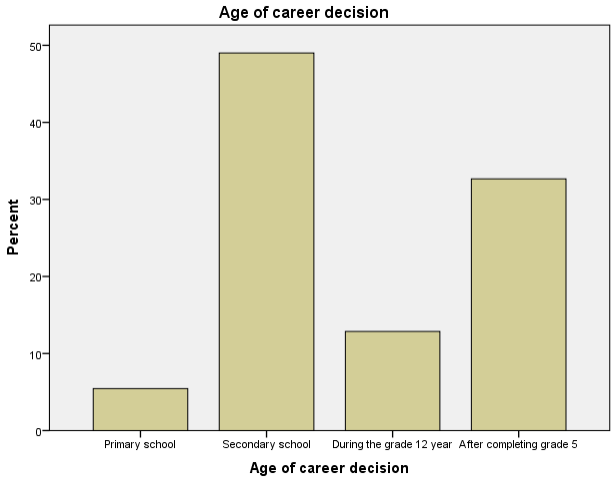


Figure 5.15: Age of career decision making

5.11.2 Reasons for enrolling in a TVET college

The learners were asked to state the reasons they chose to enrol in a TVET college in order to understand the match between their aspirations and how these are acted upon and the choice of study destination in real life.

Table 5.28: Reasons for enrolling in TVET College

		Responses		Percent of Cases
		No	Percent	
Reasons for enrolling	Interest in field	129	43.9%	63.9%
	To be able to get a job	89	30.3%	44.1%
	Affordable	21	7.1%	10.4%
	Sibling at college	3	1.0%	1.5%
	It doesn't take so long	12	4.1%	5.9%
	It was easier	26	8.8%	12.9%
	Other	14	4.8%	6.9%
Total		294	100.0%	145.5%

As presented in Table 5.28 above, the most cited reasons for enrolling in the TVET programme were interest in the field of study (63.9%), possibilities of getting a job on completion of the studies (44. 1%), ease of admission to TVET colleges (12.92%) and affordability of the programme (10.4%). The least common factors were the time

it takes to complete a TVET qualification and influence by a sibling who had attended a college previously.

5.11.3 Reasons for choosing construction careers

The results of the learners' reasons for choosing careers in the building and construction industry are presented in Table 5.29 below.

Table 5.29: Reasons for choosing construction careers at college

Reasons for construction careers

		Responses		
		N	Percent	Percent of Cases
Reasons for construction and building	Interest in industry	129	24.1%	60.0%
	Working conditions	36	6.7%	16.7%
	Availability of work	91	17.0%	42.3%
	Social prestige	20	3.7%	9.3%
	Salary prospects	83	15.5%	38.6%
	Social good	71	13.2%	33.0%
	Self-employment	89	16.6%	41.4%
	Family influence	17	3.2%	7.9%
Total		536	100.0%	249.3%

In response to the question on reasons for choosing a career in the construction industry, the learners indicated interest in the construction industry (60.0%), availability of a job in the building and construction industry (42.3%), good salary projections (38.6%) and the possibility of self-employment (41.4%) as the most prevalent reasons for choosing the industry. Interestingly, family influence and social prestige, the two factors indicative of role modelling and exposure, were the least cited reasons.

During the qualitative focus group discussions, most learners indicated passion for the construction industry, availability of job opportunities and potential for self-employment as the most prevalent reasons for choosing construction careers. Commenting about the reasons for choosing construction careers, one learners said:

> *I chose to, because of passion, besides that a lot of things that I considered, job opportunities, a lot of chances for me to get work.*

While another said:

I chose it because I'm passionate about the course. Because, since then, I like construction and construction industry because there is a lot of job opportunities …

A third learners interjected saying:

The first reason is passion, but if you check in construction, there's a lot of activities for us young people to show our potential in it.

5.11.4 Reasons for enrolling in TVET construction programmes

Studies have shown that learners choose careers based on their interest in the industry and the accessibility of jobs (Ball et al., 2002). The learners were asked about why they had decided to enrol in construction studies at a TVET college and not proceed to university. Accordingly, the learners' reasons for enrolling in construction programmes at a TVET college are presented in Figure 5.16 below. The most prevalent reasons for enrolling in construction TVET programmes were, in order of priority, access to a bursary (36.63%), relevance of the programme (16.86%), affordability of the programme (16.57%) and availability of places (15.99%), thus showing that access to both financial resources and college spaces are important considerations in expressing career aspirations.

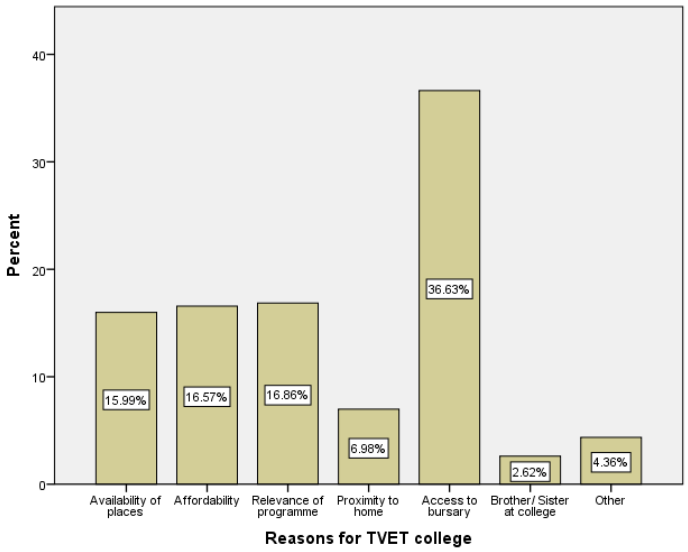


Figure 5.16: Reasons for enrolling in TVET construction programmes

In the focus group discussions, the learners were asked about the significance of the bursary to their decision to enrol at a TVET college. There was consensus on the importance of the bursary with the learners saying:

> *The bursary is important to most of students because some of us, our parents are unemployed and some of us you find that our parents are employed but ...*

One of the learners interjected and completed the above sentiment stating:

> *They can't afford.*

And yet another said:

> *They have so many responsibilities that they cannot afford our studies.*

Commenting on the significance of the bursary to her ability to pursue studies at the college, one female learner had this to say:

> *… without it (the bursary) a lot of us would not be able to come here. I come from Mpumalanga side, so me coming this side is expensive and accommodation arrangements – are expensive, so with the bursary I know it pays off my tuition and all my parents have to support me with is living expenses.*

One learner went as far as to highlight the usefulness of the bursary in determining learners' choices between colleges and universities by saying:

> *… when there are no fees everyone will want to enrol in university, there won't be any students here because most of the students who come here, it's because of you know … there's a bursary. I know here I'm gonna get in for free or pay at least half.*

It can therefore be concluded that access to a bursary is a very important consideration for the learners when deciding on further studies.

Furthermore, the learners also disclosed that the TVET college was chosen because of ease of access, with one learner saying her friend, who had already been registered at the college, had told her she would qualify for college entry:

> *No Chomi, because you have Grade 9 you will qualify to college and that's why I came to the college.*

Other learners had the following to say in this regard:

Okay, I didn't qualify at TUT[11] or university because my matric was, I didn't qualify and I wanted this course civil engineering, so, I don't know …

For me, I didn't have matric certificate, so when I learned that the college is available and they recruit from Grade 9 and you don't need matric, I thought that maybe I could come here.

The perception that the TVET construction curriculum is more comprehensive as it includes practical and work-based components was also given as a reason for choosing to enrol at a TVET college, as indicated by one learner who said:

… for one, the programme, you don't have to have matric and you want to study any course. It gives you a good foundation for when you go to university, cause you start from practicals yet when you go to Wits,*[12] you find that civil is hard and you waste money.*

It is interesting to note that even at this stage the learners were not aware of the differences in the construction career destinations of TVET graduates as opposed to university graduates. Indeed, many still indicated a desire to pursue professional engineering careers which are the preserve of university graduates. The significance of this to career aspirations will be discussed in greater detail in subsequent sections.

5.12 Experiences and impact of college on learners

To assess the impact of the college programme on the learners, they were asked to comment about the curriculum elements they were exposed to at college, their favourite curriculum activities and their favourite subjects.

5.12.1 Activities learners exposed to

As presented in Figure 5.17 below, most learners reported being exposed to practical work and theory at the college, while very few had had exposure to simulated learning, visits to construction sites, vacation work and workplace

[11] Tshwane University of Technology is a local university offering construction programmes to learners who have obtained a diploma pass in the NSC.

[12] Wits – the University of the Witwatersrand – is a Gauteng-based university that offers construction-related programmes.

placement. The practical component of the NC(V) programme incorporates an introduction to the building and construction trades of bricklaying, plumbing and concreting, and these are offered as hands-on modules at the college.

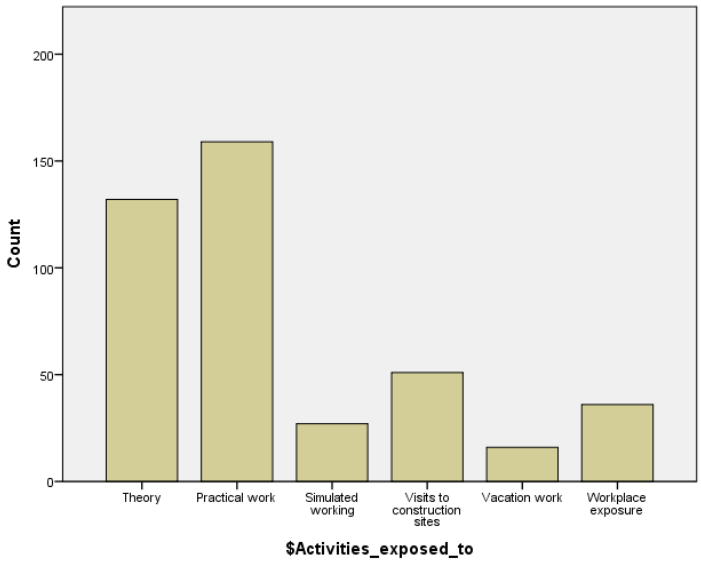


Figure 5.17: Activities learners have been exposed to at college

5.12.2 Learners' most enjoyable activity

The learners were further asked about the subjects that they found most enjoyable. Accordingly, Figure 5.18 below summarises the results relating to the most enjoyable curriculum activities and learners' favourite subjects.

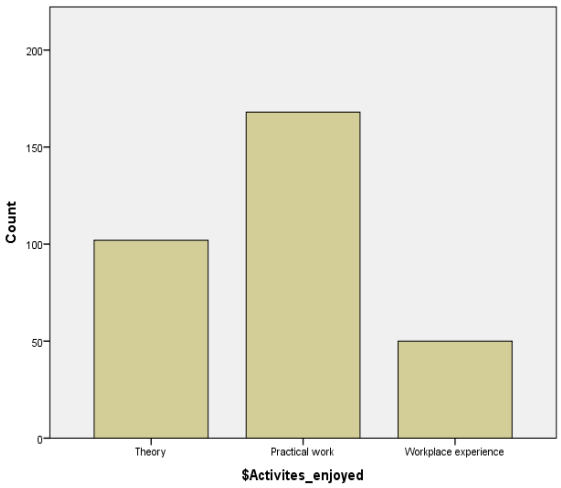


Figure 5.18: Learners' most enjoyed curriculum activity

Most learners indicated a preference for practical work followed by theory, with workplace experience given as the least enjoyable activity. It is assumed that this may be due to the limited exposure to workplace learning, as less than 10% of the learners reported exposure to workplaces. It is also worth mentioning that when they visit construction sites, college learners are used to perform mundane duties, and this might lead to their lack of enthusiasm for workplace exposure.

5.12.3 Learners' favourite subjects

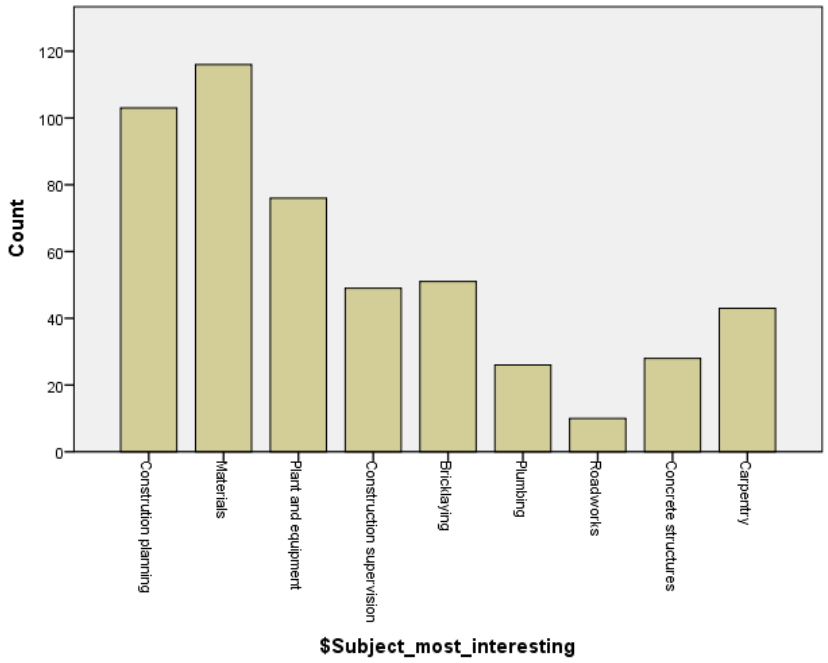


Figure 5.19: Learners' favourite subjects

Commenting on the individual subjects in the programme, the majority of learners reported that they found materials (54.7%), construction planning (48.6%) and plant and equipment (35.8%) the most interesting (Figure 5.19 above). Very few learners expressed an interest in the trade subjects of bricklaying (24.1%), plumbing (12.3%), carpentry (20.3%), concrete structures (13.2%) and roadworks (4.7%). This finding is particularly interesting as these least favourite subjects are the trade subjects that form the core of the NC(V) programme. Thus, the learners' favourite subjects were consistent with their reported expectations of professional careers but at odds with the construction TVET programme, which is intended to prepare them for artisan level training to occupy intermediate level positions in the industry or to start their own businesses.

5.13 Career aspirations and expectations

To further understand the learners' aspiration and how they are developed and strengthened while at college, the learners were asked a series of questions about their aspirations, expectations and plans after completing their college studies. The findings are presented below.

Table 5.30: Planned activity after graduation from college

	Responses		Percent of Cases
	N	Percent	
Study further at university	127	41.8%	59.6%
Study at university of technology	59	19.4%	27.7%
Start work immediately	63	20.7%	29.6%
Change course and study further	12	3.9%	5.6%
Open my own business	39	12.8%	18.3%
Other	4	1.3%	1.9%
Total	304	100.0%	142.7%

Most learners intended to continue their studies at universities (41.8%) and universities of technology (19.4%), with some learners planning to start work immediately (20.7%). Very few learners mentioned a desire to change course (3.9%) or start their own businesses (12.8%). The implications of these findings for TVET college learners' aspirations are discussed later.

The learners' plans after completion of the TVET programme were further cross tabulated by pass rate in the NSC exams and the findings are presented below.

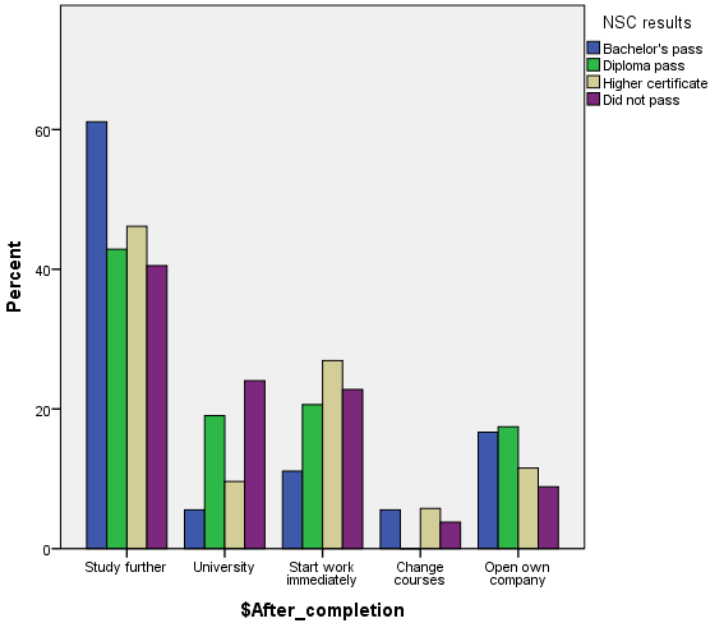


Figure 5.20: Plans after completion by NSC pass rate

Figure 5.20 above shows that the majority of the learners intended to continue with their studies after graduating from the TVET college. This was investigated further in the focus groups discussions, where one NC(V) 4 learner had this to say about choosing to enrol at a TVET college rather than going to university:

> *… but there's also one thing missing, because you know universities don't just take you – there's certain minimum requirements they require. I know one student who has good qualifications, the problem is the fees.*

This statement reinforces the importance of financial resources in career decision making, and the important role the bursary plays when enrolling at a TVET college – even for learners who would otherwise qualify for entry to universities' programmes.

5.13.1 Learners' aspired to careers in construction

The careers learners in this study aspired to are presented in Table 5.31 below. In order of preference they are owning a company (37.37%), working as a supervisor in a construction company (23.42%), working in a mid-level position in a company (13.16%), and working away from home (12.63%). Very few learners aspired to work as general construction workers (5.26%), to work away from home (6.05%), or doing other activities (2.1%).

Table 5.31: Learners' aspired to careers in construction

	Responses		Percent of Cases
	N	Percent	
Working as a general worker	20	5.3%	9.3%
Working as a supervisor	89	23.4%	41.2%
Working away from home	48	12.6%	22.2%
Working at home	23	6.1%	10.6%
Mid-level position in a company	50	13.2%	23.1%
Owning my own company	142	37.4%	65.7%
Other (specify)	8	2.1%	3.7%
Total	380	100.0%	175.9%

In the focus group discussions, the learners said they aspired to careers as architects, quantity surveyors, project managers and supervisors on construction sites. They reported that they wanted to volunteer to work in various roles in construction companies or continue with their studies at higher education institutions. One of the reasons cited for wanting to study further was the perceived low status afforded the NC(V) qualification by industry. During the discussions one NC(V) 4 learner had this to say about the NC(V) qualification:

> *I think NC(V) 4 is light! That's why I want to study further, I think level 4 is light and they don't really take you seriously.*

This negative perception of the NC(V) qualification was also mentioned by another learner, who reported that he would act on the advice given by the workshop manager:

> *Level 4 is not taken seriously and the workshop manager told me the truth that I should further my studies.*

The learners were therefore convinced that the only way they could achieve their aspirations was to use the NC(V) qualification as a stepping stone to further studies. The most commonly cited course for further studies was project management and civil engineering. One NC(V) 4 learner indicated that he intended getting an internship at a construction company, while another said:

> *… the plan is to further my studies while working or get an internship.*

Another stated:

… but furthermore, I was looking at myself as a project manager.

The findings above indicate a mismatch between the learners' career aspirations and what the TVET programme prepares them for. It is also interesting to note that many learners planned to use the TVET qualification as a stepping stone to higher education.

5.13.2 Impact of the TVET on learners

Lastly, the learners were asked to comment on the impact of the NC(V) programme and their experiences at the college on their initial aspirations to join the construction industry. Most learners indicated that the college experience had strengthened their resolve to continue with careers in the industry.

Table 5.32 : Impact of college experiences on learners' aspirations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly encouraged me	145	67.1	70.0	70.0
	Encouraged me	49	22.7	23.7	93.7
	No influence	10	4.6	4.8	98.6
	Discouraged me	1	.5	.5	99.0
	Strongly discouraged me	2	.9	1.0	100.0
	Total	207	95.8	100.0	
Missing	System	9	4.2		
Total		216	100.0		

Table 5.32 above shows that a majority (93, 7%) of the learners reported that the college experiences strongly encouraged or encouraged them to stay in the construction industry. It is interesting to note that only three learners reported that the programme had discouraged or strongly discouraged them from staying in the construction industry.

5.14 Parental socioeconomic status

Parental socioeconomic status has been reported to influence learners' aspirations as well as the family's ability to support learners in furthering their studies. The majority of learners in this study came from single-parent female-headed households (41.60%), most of whom are unemployed (54.34%), with an education below Grade 12 (85.44%) – the most economically deprived sector of the South African economy. The impact of family economic status on learners' aspirations to enrol in college were therefore determined by using the findings from learners who came from families where parents were unemployed.

Table 5.33: Unemployed father and learners' access to bursary

Unemployed father by access to bursary				
V31e	**Frequency**	**Percent**	**Cumulative Frequency**	**Cumulative Percent**
.	12	31.58	12	31.58
Access to bursary	26	68.42	38	100.00

The findings presented in Table 5.33 above show that a significant portion of the learners with unemployed fathers used the bursary to finance their studies.

Table 5.34: Unemployed father by school exit level

Unemployed father by school exit level				
V7- School exit level	**Frequency**	**Percent**	**Cumulative Frequency**	**Cumulative Percent**
Grade 9	8	21.05	8	21.05
Grade 12	30	78.95	38	100.00

Table 5.34 above shows that a significant majority of the learners with unemployed fathers had exited school at the end of Grade 12.

Table 5.35: Unemployed father by siblings in college

Unemployed father by siblings at college				
V31f	Frequency	Percent	Cumulative Frequency	Cumulative Percent
.	36	94.74	36	94.74
Brother/sister studied at college	2	5.26	38	100.00

On the other hand, the findings show that very few learners with unemployed fathers had siblings at college or in post-school education (see Table 5.35 above)

Table 5.36: Unemployed mother by learners' access to bursary

Unemployed mother by access to bursary				
V31e	Frequency	Percent	Cumulative Frequency	Cumulative Percent
.	32	34.04	32	34.04
Access to bursary	62	65.96	94	100.00

In this study, the majority of learners with unemployed mothers had been able to access a bursary (65.96%, 62/94 learners) to finance their studies.

Table 5.37: Unemployed mother by school exit level

Unemployed mother by school exit level				
V7	**Frequency**	**Percent**	**Cumulative Frequency**	**Cumulative Percent**
Grade 9	39	41.94	39	41.94
Grade 12	54	58.06	93	100.00
Frequency Missing = 1				

The findings presented in Table 5.37 above also show that a significant number (58.06%, 54/93) of learners with unemployed mothers had exited school at the end of Grade 12.

Table 5.38: Unemployed mother by number of siblings in post school education

Unemployed mother by no of siblings in post school education				
V24	**Frequency**	**Percent**	**Cumulative Frequency**	**Cumulative Percent**
One	21	70.00	21	70.00
Two	7	23.33	28	93.33
Three	2	6.67	30	100.00
Frequency Missing = 64				

The findings presented in Table 5.38 above show that thirty (30) learners with unemployed mothers had siblings in higher education. This is very significant as it has been reported that mothers have a very positive influence on their children's aspirations (Trice & Knapp, 1992).

5.15 Access to information

Information that influences career aspirations may be both formal and informal and may emanate from the family, role models and career guidance programmes. School-based career guidance forms the basis of the South African basic education system and is meant to inform learners and expose them to the career options open

to them. This study investigated the learners' sources of career information, its quality and the impact it had on their career decision making.

Table 5.39: Career guidance by school exit level

	School exit by career guidance			
	V7 school exit level	V25 – Did you receive any career guidance while at school?		
		Yes	No	Total
Frequency Percent Row% Col %	Grade 9	72 33.96 72.73 40.68	27 12.74 27.27 77.14	99 46.70
	Grade 12	105 49.53 92.92 59.32	8 3.77 7.08 22.86	113 53.30
	Total	177 83.49	35 16.51	212 100.00
	Frequency Missing = 6			

Table 5.39 above shows that 83.49% (177/212) of the learners had received career guidance, the majority of them (59.32%) in Grade 12.

Table 5.40 below shows that 97 of the 137 learners who had received career guidance and completed Grade 12 had obtained good NSC results. Ten percent (10.95%) had obtained a bachelor pass, 30.66% a diploma pass and 21.9% a higher certificate pass. Thus, the findings show a significant relationship between career guidance and the NSC pass, with the learners who have received career guidance being most likely to perform well in the NSC examinations.

Table 5.40: Career guidance by NSC pass

	V8 by V25 career guidance by NSC pass			
	V8 (V8 NSC pass)	V25 (Did you receive any career guidance while at school?)		
		Yes	No	Total
Frequency Percent Row Pct Col Pct	Batchelor's pass	15 9.74 93.75 10.95	1 0.65 6.25 5.88	16 10.39
	Diploma pass	42 27.27 93.33 30.66	3 1.95 6.67 17.65	45 29.22
	Higher certificate pass	30 19.48 93.75 21.90	2 1.30 6.25 11.76	32 20.78
	Did not pass	50 32.47 81.97 36.50	11 7.14 18.03 64.71	61 39.61
	Total	137 88.96	17 11.04	154 100.00
	Frequency Missing = 64			

The findings in regard to the impact of career guidance and access to a bursary at college presented below show a significant relationship between career guidance and access to a bursary at college. Table 5.41 shows that 59.44% (107/180) of the learners who had received career guidance also had a bursary at college. This in contrast to the learners who had not received career guidance, where only 50:50 access to a bursary was found among the learners who had not received career guidance.

Table 5.41: Career guidance by access to bursary

	V25 by V31e –career guidance by access to bursary			
	V25 (Did you receive any career guidance while at school?)	V31e(V31e)		
		.	Access to bursary	Total
Frequency Percent Row Pct Col Pct	.	1 0.46 50.00 1.09	1 0.46 50.00 0.79	2 0.92
	Yes	73 33.49 40.56 79.35	107 49.08 59.44 84.92	180 82.57
	No	18 8.26 50.00 19.57	18 8.26 50.00 14.29	36 16.51
	Total	92 42.20	126 57.80	218 100.00

The findings further showed that learners who had received career guidance were more likely to stay longer in college.

5.16 Concluding remarks

This chapter presented a description of the study findings, including the demographic profile, socioeconomic status and career decision-making process to enter the college. Lastly, the learners' experiences at the college, as well as the influence of the different factors shown to have an impact on career aspirations, were presented.

In summary, the main findings of the study reveal the following:

- There is a high level of female participation in the TVET construction programme with the genders enjoying an equal split.
- The bursary is very significant for the learners' decision to enrol at a TVET college, and without the bursary very few learners would have been able to continue with their studies.

- The learners had received career guidance while still at school but for most it had only been offered after they had made their subject choices in Grade 9. Nevertheless, career guidance was shown to have had a positive impact on the learners, as those who had received guidance had successfully completed Grade 12 and attained good results.
- Many learners in the study were from low socioeconomic backgrounds with no immediate family member in employment or in post-school education.
- In general, the learners did not have access to construction industry role models and the knowledge they had acquired about the industry had come from books and the electronic media.
- Many learners expected to take up professional careers and, as such, after graduating from the TVET college intended continuing their education at universities and universities of technology.
- Very few learners intended to start work after graduation, and many were aware of the limitations of their training regarding the practical and work-based components.

The next chapter will discuss the significance of the findings by comparing the study population with reported literature trends, as well as drawing conclusions on the major factors that influence the aspirations of the TVET construction learners at these two colleges.

6. CHAPTER 6 ANALYSIS

6.1 Introduction

This chapter will provide an analysis of the study findings and link them to the factors that influence career aspirations, as espoused in the conceptual framework adapted from Gottfredson's theory of circumscription and compromise (1981). Finally, the research questions will be answered to provide a better understanding of the TVET construction learners' aspirations and the way these aspirations develop while at college. In addition, recommendations will be made for improving the career guidance provided to learners, as well as learners' experiences at college. These recommendations will be drawn from the analysis and interpretation of the findings.

6.2 Application of the conceptual framework

In this study I used Gottfredson's theory of circumscription and compromise (1981) to understand career circumscription in learners enrolling for the NC(V) programme in construction at TVET colleges. This theory describes the development of career aspirations, indicating that such development takes place through various stages over time, as a learner matures from childhood to adolescence. By contrast, compromise happens much later and is influenced by environmental factors. At the point where learners enrol in higher education, most are acting on compromised careers because at that stage they would have analysed their social circumstances and have chosen the career most accessible to them. The learners in this study are therefore assumed to have picked the TVET college construction programme as their compromise career choice. This is supported by the fact that, as emerged from the study, the learners only considered enrolling at TVET colleges after failing to access other post-school institutions. Moreover, once at the college, they chose the construction programme because it was the only one that would admit them. It is therefore important to understand how college programmes could be marketed so as to become careers of choice for learners.

The conceptual framework developed for this study and presented as Figure 3.1 shows the relationships between the environmental factors responsible for career

circumscription and how they affect learners' expression of their aspirations (Figure 3.1, page 59).

In applying this framework to the construction industry, it can be assumed that learners may aspire to either professional degrees or trade careers. It is therefore important that these aspirations are expressed in their subject choices and their performance at secondary school. Learners aspiring to professional careers are expected to study and pass mathematics, physical science and English as a second language at the National Senior Certificate level. They can then enrol at universities and universities of technology and study for a diploma or degree in a construction-related field such as architecture, building sciences, engineering, construction management or quantity surveying. Learners who aspire to take up a trade can, instead, exit secondary school at the end of Grade 9 and then enter the TVET college sector. Once at the TVET college, their subject choice is influenced by their intended trade specialisation and possible plans for further studies in later life. Those who intend continuing with their studies are expected to enrol for NSC level mathematics and language studies to facilitate entry to university at a later stage. However, the finding indicates a lack of coherence between the learners' aspirations and their eventual choices.

As stated in the literature (Creed et al., 2006; Davis, 2013; Joeng ,Turner, & Lee, 2013; Schuette et al., 2012; Swanson & Gore, 2000) presented to support the theoretical framework of the study (Figure 3.1), the most significant influences on career compromise are the socioeconomic status of parents, geographic location, role models and access to information. These factors will be used to undertake a further analysis of the findings as well as to characterise the learners' aspirations and the way they are expressed in their enrolment at college.

6.3 Characteristics of the learner population

Most of the learners in this study were aged between 19 and 22 years, the average age of learners in the South African higher education system. Interestingly, there were slightly more females than males in what is a traditionally male-dominated industry, which might imply a feminisation of the construction industry, or the success of outreach messages that stress equal opportunity access in the country

(Lombardi, 2017). Davis (2013) also showed that, among American youth, females were more likely to aspire to traditionally male-dominated careers which they perceive to have higher social prestige and benefits. Because of the geographic location of the colleges in this study, that is, in the historically black townships, almost all the learners classified themselves as black, with one learner classifying himself as coloured.

Most learners were from the Gauteng and Limpopo provinces. The high number of Limpopo learners in the colleges in Gauteng indicates that learners move out of their home provinces to access education and economic opportunities in neighbouring provinces. It has also been reported that as the most industrialised provinces in the country, Gauteng and the Western Cape have a high rate of in-migration of learners looking for educational opportunities and workers seeking employment (Kok, O'Donovan, Bouare, & Van Zyl, 2003).

The learners' decision making was found to be consistent with Gottfredson's theory of circumscription and compromise, which holds that career decisions are made during late adolescence, and are dependent on the adolescent's assessment of their socioeconomic circumstance (Gottfredson, 1981). The learners' decisions were also harmonised with the provisions of the South African basic education system where learners have to make subject choices for their intended further studies in Grade 9.[13] However, the study showed that by Grade 9 only 12% of the learners had received formal career guidance, even though 47% of the learners had enrolled in the TVET college after completing Grade 9 – this therefore implies that many of them would have had no career guidance to guide their decision. In fact, the majority (35.5%) of learners had received career guidance during their Grade 12 year, thus implying that learners' subject choices for Grade 10 had been based on factors other than their intended career and educational aspirations. This is a significant finding as it suggests that the decision to join the construction programme at TVET colleges is capricious and unplanned, or based on certain unfocused functional information.

Postponing decision making until after the Grade 12 year is an indication of financial compromise by learners who either cannot access other post-school institutions or

[13] Basic education policy on subject choices

do not have the resources to enter university, and therefore choose to join the fully funded TVET college (Figure 5.16). These findings indicate career compromise because financial access is used as the main criterion for making a career decision, as reported by Gewer (2009) in his study on South African learners. The stated importance of the bursary for decision making is also indicative of the influence that finances have on career aspirations. Gottfredson (1996) reported that in the absence of sufficient finances, children compromise their ideal careers for those that are financially accessible (Ball et al., 2002; Gewer, 2009; Goldhaber & Gross, 2008), such as programmes that are fully funded.

No significant difference was found between the number of learners entering the TVET college at the end of Grade 9 and the end of Grade 12 (47% and 53% respectively). It is, however, significant that the learners, including the Grade 9 learners were older than 18 years, the average age at which South African learners complete schooling. This might be because the majority of learners in the study were from rural areas where children tend to be older when they start school. The high percentage of Grade 9 learners who were older than 19 may also point to learners who had to drop out of school because of their age.[14] Gewer (2010) reported high numbers of matriculants enrolling in engineering and related programmes at TVET colleges, as compared to hospitality and tourism programmes, which attract mainly Grade 9 learners. In this study, although a sizeable majority of the Grade 12 learner population was found to have achieved results that permitted entry to higher education (Figure 5.6), they had nevertheless enrolled at a TVET college. This might be indicative of the shortage of post-school training opportunities for learners with Grade 12 passes, resulting in many learners resorting to enrolling in TVET colleges when they found they could not access universities and universities of technology. On the other hand, as stated by the learners, it may be indicative of a further process of career compromise, with the TVET colleges acting as a stepping stone to further training because of the bursaries they offer. The finding that TVET colleges were perceived to be more accessible (Figure 5.16), as well as the access to bursaries at the college, are strong signals that learners compromise their aspired to careers instead choosing options that are financially accessible. This is finding is very

[14] Social Surveys Africa, 2010. Access to Education in South Africa Parliamentary Submission Feb. 2010

significant for a learner population where most primary caregivers are unemployed or have monthly incomes of less that R4000 per month (Tables 5.6 and 5.7). It is also interesting to note that despite the fact that a high proportion of the learners who enrolled at the college had an NSC pass, the national pass rate for the NC(V) programme is very low (DHET 2017). It is therefore assumed that TVET colleges may be inclined to enrol more learners with a National Senior Certificate (NSC or Grade 12) as they assume that they are better prepared for college-level studies and will help improve their NC(V) pass rates.

6.4 Learners' level of study

The NC(V) is, according to the DHET (2013), a three-year qualification that comprises three autonomous levels of study, which learners can exit at any point after completing a level in order to enter the workplace. This study found a consistent number of learners in each level of study (40% in level 2, 32% in level 3, and 28% in level 4), which may point to the depressed job market which means that learners fail to access employment after completing intermediate levels of study, consequently opting to stay for the full three years at the college. On the other hand, continuing with the NC(V) studies may also be indicative of the learners' aspirations to complete the qualification and articulate into higher education; the finding that most learners (43.1% or 94/218) intended to further their studies after completing the NC(V) supports the high programme retention rate. This finding furthermore corroborates the learners' aspired to careers as many reported aspirations to take up professional careers that require further studies at university or university of technology level (Table 5.13). The results of the focus group discussions and the stated intentions to continue on to higher education also corroborate the findings that the learners in this study intended to continue to level 4 of the NC(V), which qualifies them for entry to higher education. As one learner said, when referring to the NC(V) qualification:

> *… it gives you a good foundation for when you go to university, cause you start from practicals …*

This statement also supports the literature which states that aspirations drive academic persistence and performance (Davis, 2013; James, 2004; Mau & Bikos, 2000; Schoon & Polek, 2011).

As already mentioned in the discussion on the limitations of this study, it was difficult to ascertain the learners' level of study as some of them carry over subjects from preceding years and thus have to enrol for two academic levels. For example, a learner could be enrolled in level 3 of study while still completing some subjects from the preceding level 2. An understanding of the factors that affect the college pass rate would have a huge impact on the learners' career destinations because, if they intend continuing to higher education, they will have to study and pass pure mathematics and not mathematical literacy.[15] Furthermore, an investigation of the mathematical curriculum followed in the NC(V) engineering programme at TVET colleges and its success rate would enhance the understanding of the impact of the NC(V) building and civil engineering as a stepping stone to professional, university-level studies in the built environment. Since the NC(V) programme is marketed as a stepping stone to professional studies (DHET, 2013), offering full mathematics in the college would enhance learners' chances of achieving their aspirations and articulating into universities and universities of technology. However, there are currently no systems that track the progression of TVET graduates to determine how many of them proceed to university-level studies.

6.5 Learner socioeconomic status

In South Africa, family socioeconomic status can be inferred from access to social benefits such as free housing and social grants (Charlton, 2004; Landman, 2016; Lemanski, 2009). Accordingly, in this study parental education, employment, income level and access to government subsidised housing was used to determine the learners' socioeconomic status.

Studies have shown that a mother's educational level has a positive effect on their children's educational aspirations (Ball et al., 2002; Trice & Knapp, 1992) and also that female learners stay longer in school (Howard et al., 2010). In this study, it was found that, overall, the learners' mothers had lower educational levels than fathers, with 45% having an educational level below Grade 9 compared to the fathers' 39.4% (Tables 5.2 and 5.3). Mothers have been shown to have a positive influence on

[15] The state admission requirements for NC(V) learners wanting to enrol at university of technology programmes in civil engineering, e.g. Nelson Mandela Metropolitan University.

learner aspirations and motivation to achieve academically (MacBrayne, 1987; McCracken & Barcinas, 1991). The learners in this study had acted on their aspirations despite their mother's low educational levels.

Family income, especially the mothers' income, has been reported to be a useful predictor of youth aspirations (Ball et al., 2012; Cochran et al., 2011; Coffman, 2011). The learners' mothers in this study were either unemployed with no fixed income or had very low incomes, with Table 5.7 showing that 65.36% of mothers had incomes below R3000 per month. It is therefore concluded that the aspirations of learners in this study were developed despite the mothers' educational and socioeconomic status. Most of the learners were also first-generation post-school education attendees in their families (Figure 5.8) and would have most probably not have had role models or family support in developing their career aspirations and guiding their career decision making.

Financial access had been shown to be a strong predictor of aspirations to continue with higher education studies (Goldhaber & Gross, 2008), and for this study cohort, enrolment at a TVET college. The bursary was regarded as very significant with 65.48% of the learners being supported by a bursary in their studies (Table 5.18) and 36.63% indicating that they chose to enrol at a TVET college because of the availability of bursaries (Figure 5.16). This observation is consistent with Gewer's observation that more than 60% of rural South African students rely on state bursaries to finance their studies (Gewer, 2009). The importance of the bursary for study financing and career aspirations was emphasised in the focus group discussions, where some of the learners mentioned that even though their parents were working, the bursary relieved the financial pressures on the family and allowed them to study away from home. This was reflected in the following quote by one of the students in regard to the value of the bursary to her studies:

> *Because without it a lot of us would not be able to come here. I come from Mpumalanga side, so me coming this side is expensive and accommodation arrangements are expensive, so with the bursary I know it pays off my tuition and all my parents have to support me with is living expenses-*

The bursary is also important in view of the shortage of post-school education institutions in the country, which means that learners are forced to relocate from their home provinces to access educational opportunities. In such cases, the cost of education increases and hence the value of the financial assistance provided by a bursary. The above quote captures the influence that geographic relocation in search of educational opportunities has on students and their families.

As the focus group discussions highlighted, without the bursary many of the learners, even those who qualified for entry to universities, would not have been able to access post-school education of any form – hence, their enrolling at TVET colleges. The learners were aware of and sensitive to their parents' financial burdens and expressed support for the bursary as an enabler of career aspirations. Similarly, in America, Goldhaber and Gross (2008) reported that students make reverse transfers from four- to two-year colleges because of the availability of financial aid at two-year colleges. The value of the bursary was not only to enable the learners to continue with their studies, but it also provided a means for many of them to divert from the academic school programme and pursue career-focused studies without additional financial costs to their families.

The significance of financial access is further exhibited by the prevailing #FeesMustFall[16] movement where students are fighting financial exclusion and attempting to force the government to provide free tertiary education. The learners' enrolment at TVET colleges is a way of compromising their aspirations by enrolling at an educational institution that provides relief for one of the perceived hurdles to continuing with their education, in this case access to financial assistance.

Nevertheless, the learners also highlighted a shortcoming in the bursary, namely, that they have to pay their registration fees and then await confirmation of the bursary allocation. They pointed out that pre-financing their studies and claiming the money back from the college when the bursary is allocated poses a problem, as their families sometimes have to borrow the money which then has to be paid back with interest. One learner had this to say about the problems with the bursary:

[16] #FeesMustFall is a student led protest movement that began in mid-October 2015, started by the University of Witwatersrand SRC of 2015 led by Shaeera Kalla in response to an increase in fees at South African universities.

Actually, you first pay, after that, by the end of the year, or by the beginning of the year, the coming year, that's when they refund you the whole money.

In the focus group discussions, the learners were of the opinion that this system could compromise some learners' chances of pursuing their studies should they fail to raise the funds for pre-financing the studies while waiting for bursary approval. It is important to report that during the course of this study, the system was changed as a result of pressure from the "#FeesMustFall" movement.[17] Learners now apply for and are granted the bursary before they enrol in college, and the registration fees are included in the bursary allocation. It is assumed that this change in bursary allocation will enable more learners to plan their studies and better express their career aspirations.

This study concluded that the bursary plays a central role in the learners' decision to act on their career aspirations, and that without access to a bursary very few of them would have chosen to enrol at the TVET college. The study did not investigate the influence of the bursary on the choice of study programme as TVET programmes are all funded on the same scale.

6.6 Role models

The family's level of education influences learners' aspirations to continue into higher education. However, first-generation post school learners do not have the support networks that are available to learners from families with a tradition of higher education (Ball et al., 2002). Learners with siblings in higher education perceive them as role models and aspire to continue their studies so that they can in turn serve as role models for others (Robbins et al., 2003). Most learners in this study did not have access to educational role models because 68% were the first in their families to enter post-school education. As first-generation college attendees they are, according to Ball et al. (2002), bound to face multiple challenges with navigating the landscape since they do not have access to personalised information and have to rely on friends and college marketing brochures.

[17] #FeesMustFall is a student-led protest movement that began in mid-October 2015 in response to an increase in fees at South African universities.

Although seen as role models, older siblings can also paradoxically become an inhibitor to career aspirations when families choose to finance the studies of older siblings at the expense of the younger siblings. For example, Freire and Giang (2012) have shown that, in Vietnam, families choose to finance male students' education, as males are perceived to contribute to the family's long-term social upliftment and socioeconomic status.

This study found that learners chose construction careers despite the lack of construction role models in their families, as only 3.17% had family members in the industry (Table 6.1). In addition, very few learners had siblings in TVET colleges and therefore their choice of a TVET college programme was not dependent on family connections. Middleton and Loughhead (1993) challenged the importance of role models in career decision making when they reported that adolescents sometimes model occupational spheres without having any direct contact with people in those spheres. The findings emanating from this cohort of TVET learners are consistent with Middleton and Loughhead (1993) observation as they chose construction careers without direct access to construction industry role models. It is therefore concluded that the learners' decision to enrol at TVET colleges in the absence of prior exposure to the college system and in the absence of any college role models was random.

6.7 Career guidance

Most of the learners in the study (83%) had received career guidance during their school career (Figure 6.1). This guidance was received during the last four years of schooling: that is, 35.52% had received career guidance in Grade 12, 22.17% in Grade 11, 29.34% in Grade 10 and 11.97% in Grade 9 (Table 5.50). According to the basic education policy[18] learners are supposed to choose their subjects for the NSC in Grade 9 and thus enrol in a stream that will support their chosen career aspirations. However, the finding that only 11.97% of the learners had received guidance in Grade 9, even though Grade 9 learners formed 48% of the enrolments at the college, meant that most of the learners had chosen to enrol at the college without having accessed any proper career guidance. This is emphasised by Figure

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5.15, which shows that most learners (48%) made the decision to pursue construction careers after completing Grade 9. This suggests that for this cohort of learners, the decision to enrol at the college was spontaneous and had not been planned nor had it been supported by any formal information seeking. This fact was further highlighted by a learner who indicated in one of the focus group discussions that she had been told by a friend that she could be admitted to a college with a Grade 9 qualification.

These findings underline the shortcomings of the career guidance provided to learners in basic education and how these shortcomings may influence the learners' overall choice of subjects and their ultimate career aspirations. In the South African educational system, career guidance is a competence of the Department of Higher Education and Training, through its Khetha[19] project. This study has shown that offering career guidance at the further education level (beyond Grade 9 of the school system) is not in the learners' interests as some may have already made subject choices that do not support their intended study options, or have dropped out of school into colleges without necessarily understanding the requirements of their intended career paths. This finding is revisited in the discussion on the learners' career aspirations and intended activities after graduating from college.

Learners' most common sources of career information were books and newspapers (22.06%), people in industry (18.55%), career expos at school (17.29%) and electronic media (14.04%) (Figure 6.2). This highlights the importance of both print and electronic media in providing learners with career information. It is therefore important that the construction industry supports the development of authentic learner information packages that give a true reflection of the industry, and assist the learners to make rational decisions that support their aspirations, study choices and ultimate career expectations.

The learners who received career guidance had regarded it as valuable, with most regarding it as either good or very good, informative and even inspirational (Figures 6.3 and 5.14). It was also interesting to note that only 12.69% regarded the guidance as university focused. This is important in an educational system that has seen

[19] https://www.careerhelp.org.za/-

enrolments in universities growing faster than technical colleges, with 985 212 university enrolments against 737 880 in TVET colleges, while the country is experiencing an acute shortage of skilled vocational workers and artisans (DHET, 2017). This finding further highlights the importance of industry engagement in the schooling system to support career counsellors in conveying the various streams available in certain careers, as well as the study options required for each stream.

The impact of career guidance was found to be significant among learners who had completed the NSC. About 63.5% of the cohort of learners who had completed NSC had obtained passes that enabled them to continue to higher education. This confirms Robbins et al.'s (2003) observation that career guidance assists learners to develop career aspirations and to ensure that their academic achievement is in line with those aspirations.

6.8 Career decision making

Career aspirations refer to a desired career, which is expressed at the point of career decision making by the educational choices learners make. The most commonly cited reasons for choosing a career in construction are presented in Table 6.2 and include interest in the industry (24.07%), the availability of jobs in the industry (16.96%) and the potential for self-employment (16.10%). It is assumed that the learners' decision to pursue construction careers can be attributed to interest generated by the visibility of the construction industry in South Africa. The passion and interest that was reported as the most common reason for enrolling in the building and civil engineering programme may be attributed to the visibility of the contribution the construction industry makes to the South African economy. It is therefore highly likely that the visual artefacts of the construction industry may spark interest in learners, especially in a developing economy like South Africa, where there has been rapid infrastructure provision. In the recent past there have been major infrastructure projects such as the construction of the Gautrain Rapid Rail Link, the world class soccer stadia, and a proliferation of shopping malls in the residential townships, as well as the provision of housing to many destitute people. This may have played a role in improving the profile of the construction industry as a source of employment and as a contributor to social upliftment in the country.

This was confirmed by one of the learners who asserted that the construction of malls in the townships gave him hope that he would get a job that would enable him to attain the practical experience required to start his own business. This is indicative of the learner's recognition of the value of work experience in career development, as one learner said:

> *… after level 4 I'm ready. That's why we need to work to get ready for it, even if you don't get paid for a year.*

This shows that learners appreciate the value of workplace experience regarding employability and competence, and are willing to do whatever it takes to acquire these competencies. This finding is critical for the learners' progression in the construction industry where there are careers that require competence testing and registration with professional councils. Experience has shown that during economic recession, when there is a shortage of job opportunities, volunteering is the most feasible way of getting work experience.

Career expectations are defined as the most likely occupation that a learner believes he/she will be engaged in after school; career aspirations, on the other hand, are the ideal careers that learners hope to take up (Kroon & Meyer, 2001). When making decisions about a career, career aspirations are circumscribed by career expectations that incorporate the prevailing environmental context (Gottfredson, 1981).

Career aspirations are influenced by family background, general cognitive behaviour and career development (Schoon & Polek, 2011), while career choices are mainly influenced by vocational purposes, interest, influence from family and friends and a requirement for employment (Harris & Rainey, 2012). The findings show that the learners' aspirations were not dependent on the influence of family members. Very few learners in the study had family involved in the construction industry or siblings who had studied in the TVET college system.

6.9 Career aspirations vs. expectations

The construction industry is a very volatile industry with project-based work. It mainly involves the provision of the physical infrastructure used to drive the economy, and is

consequently a very visible industry. Construction is also very structured with each construction site requiring a different set of professional and vocational skills. When assessing the careers learners aspired to, it was found that most aspired to midlevel careers were owning a construction company (37.37%), holding a supervisory position (23.42%) and holding a midlevel management position in a construction company (13.18%). It was interesting to note that very few learners aspired to entry-level general worker positions (5.26%), which they are trained for at the college (Table 6.3) and is what they could realistically expect. This mismatch between the career expectations and the reality in the industry might be an indication of the nature of the career information given in the marketing brochures for the TVET construction programme, and the naming of the qualification – NC(V) – Building and Construction Supervision (Wedekind, 2010). Accordingly, it was found that the learners aspired to careers and their career entry points were incongruent with the industry's expectations of TVET college learners, with employers indicating that they were not aware of the competencies and capabilities of learners who have completed the NC(V) qualifications (Marock, 2010; Papier et al., 2012).

Learners who had completed the NSC indicated a desire to continue their studies after they exited the TVET college (Table 6.4). Indeed, it was found that even learners who had enrolled at the college after Grade 9 and had not completed the NSC wanted to further their studies. When the learners' intended study options were explored it was discovered that most aspired to professional careers such as architecture, engineering and project management. This finding raises questions about the impact of the college on the learners as these programmes are offered at universities and universities of technology and have completely different entry requirements from the TVET college's NC(V). It is worth mentioning here that the colleges' marketing material lists articulation into higher education institutions as a potential option for NC(V) graduates (DHET, 2013). This implies that learners may be enrolling in the TVET programme with no intention of looking for a job but rather with the aim of articulating to higher education.

6.10 Impact of college on learners

Learners at both colleges had been exposed to both theoretical and practical learning opportunities, with more learners reporting exposure to practical work than

theory. At College A, the exposure to practical work was 72.7% compared to 69.5% for theory while in College B, 81.9% had practical exposure compared to 69.5% with theoretical exposure (Figure 6.4). This is significant, as one of the reasons that employers cite for failing to employ NC(V) college graduates is their lack of practical training (McGrath, 2010; Papier et al., 2012).

The learners at both colleges were least likely to have been exposed to simulated learning (11.1% and 14.3%), visits to construction sites (25.3% and 23.8%), workplace exposure (17.1% and 17.2%) and vacation work (8.1% and 6.7% respectively). These results are in line with the reasons cited by industry for not readily absorbing TVET college learners into employment (Papier et al., 2012).

Studies have reported that the low retention rates for learners in trade education may be attributed to a lack of real-life exposure to the type of work and the resulting shock when they enter the world of work and realise the practical applications of their education (Adams, 2011; Amandi, 2013). To assess the learners' impressions of the construction industry, as well as their potential to remain in the industry, they were asked to comment about their favourite curriculum elements.

Most learners at the two colleges had been exposed to practical activities, theory and workplace visits, with practical activities being regarded as the most enjoyable curriculum element by many learners (Figure 6.5). The subjects most enjoyed were construction planning, materials, plant and equipment, and construction supervision (Figure 5.19). These subjects are compatible with the learners' intended plans for further studies, as they are covered in greater detail in the curriculum of professional studies. It should be noted, however, that very few learners expressed interest in bricklaying, concrete structures, plumbing and carpentry, which are the trade subjects learners are expected to specialise in if they take the trade option.

6.11 Concluding remarks

The study questionnaire allowed for multiple responses to questions; however, the potential to calculate the significance of many responses was limited as there were cells containing too few responses to undertake statistical calculations. Nevertheless, the descriptive statistics still provide a well-defined characterisation of the TVET college learner and has allowed an understanding of why learners enrol in

the college, their career aspirations, and their experiences at the college, as well as their career expectations after graduating from the college.

The findings have shown that learners have circumscribed their career aspirations for construction careers in favour of the TVET college option. The TVET colleges are further shown to support these aspirations by providing sufficient available places and ease of access through the enrolment of both Grade 9 and NSC learners irrespective of the NSC pass, as well as financial access through the all-inclusive bursary.

The importance of the bursary as an enabler to the learners' career aspirations and decision making cannot be over-emphasised. Learners from rural, low socioeconomic backgrounds with under-educated, unemployed parents do not have access to conventional information used to develop career aspirations. Their decision to stay on in education is completely dependent on the availability of financial assistance and, thus, without the bursaries at the TVET college, they would not have continued with their studies. The bursary is therefore the single most important determinant of career aspirations in this population.

The findings also show the most important influence that the college had on the learners was to make them aware of the different careers they could pursue in the construction industry and strengthened their resolve to stay in the industry by exposing them to different aspects of the industry, such as the option to enter a trade or a profession. The colleges did not, however, support the learners' career aspirations, as their career expectations after college and possible placement in the industry were found to be incongruent with what the college programme prepares them for.

The next chapter will conclude by presenting answers to the research questions and making recommendations for further studies that could provide a comprehensive understanding of construction learners' aspirations and the best way to support them achieve their aspirations to join the construction industry.

7. CHAPTER 7 CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

The construction industry is structured in such a way that specific skills are required for specific work packages. Briefly, construction projects are designed by professionals who are also responsible for signing off on all production. Artisans and tradesmen, on the other hand, are responsible for the actual construction product and must have the appropriate skills and competences to do this. This therefore implies that learners aspiring to join the industry should have an understanding of the careers they wish to take up as this will have a direct bearing on the educational path they follow.

Technical and vocational colleges (TVET) were designed to offer the intermediate technical and vocational skills that are required to build an economy and to absorb youth into midlevel positions in the economy. Vocational education also provides opportunities for self-employment, enabling the learners to contribute to the social upliftment of their immediate communities. In South Africa, the TVET colleges are also intended to facilitate entry to higher education, where learners who complete the NC(V) can articulate into universities to pursue professional careers.

The colleges have a critical role to play in educating learners and supporting their aspirations if they are to stay in the construction industry and make a meaningful contribution. The influence that the college has on the learners is, however, dependent on the learners meeting the entry requirements, their prior exposure to the construction industry and the curriculum elements they are exposed to while at college,

The study set out to investigate the career aspirations of learners enrolling for the construction programmes at TVET colleges. The study sought to understand the major influences on these career aspirations and how they are acted on as learners prepare to enrol in the post-school education and training system. This chapter presents the conclusion to the study and makes a number of recommendations for further research on the topic.

7.2 Career aspirations of learners enrolling for construction NC(V) programmes at TVET colleges

The study findings show that the learners generally did not have well-developed, informed career aspirations and had enrolled in the construction programmes because they were both financially and geographically accessible. It is possible that these enrolments were driven by the learners' desire to buy time while they waited for something more suitable to do. This practice has been seen in other contexts where education, especially further and higher education, is used to avert the problem of youth unemployment and young people are funded to continue with their education (OECD, 2016), irrespective of their interests and chances of obtaining gainful educations after completing their studies.

The study further shows that the bursary plays a very significant role in the decision to enrol at a TVET college. Bursary allocation at the colleges is independent of the study programme or entry qualification and all learners are allocated a bursary. Learners therefore choose to enrol in the accessible college programme in the hope of coming across more lucrative opportunities while at college, or to articulate to universities when they complete their college education. This further supports the conclusion that TVET construction learners enrol in the programmes not because such programmes support their career aspirations but as a way of whiling away the time while they wait for something more lucrative to come along.

The learners did not have well-developed career aspirations and this can be attributed to poor access to timely and informative career guidance. In the South African school system, career guidance is mainly offered in Grade 12, which is the learners' final year in the system. This means that the value of the guidance offered at this level is reduced because learners had already made their subject choices in Grade 9 and can only pursue careers that are congruent with the subjects they have chosen.

No gender differences were found in the learners' career aspirations, which might be evidence of the success of current educational interventions to promote gender equity in and the feminisation of the construction industry. This gender inclusivity bodes well for the transformation of the construction industry where there are many

national programmes that aim to increase the participation of youth, female and disabled people in the industry. It is, however, worth mentioning that given the prevailing male domination of the construction industry this may present challenges for female learners when they start looking for positions in industry.

Despite enrolling in TVET College programmes, the learners in the study expressed aspirations for professional careers and were willing to continue with their studies to meet their stated aims to obtain a professional education. Aspirations to continue into higher education studies are supported by the design of the NC(V) programme, the stated objective of which is to assist learners acquire a technical national senior certificate and subsequently articulate into higher education. Anecdotal evidence, however, shows that very few construction TVET learners actually manage to follow this path because of the mathematics curriculum followed in the TVET programme.

7.3 Learners' experiences in the TVET college and their impact on learners' aspirations

Educational institutions are supposed to shape the career aspirations of young people, support their development and facilitate entry into the world of work. The study looked at the impact of the college experience on the learners' career aspirations. From the findings it can be concluded that the college did not have a significantly constructive impact on the learners' work aspirations. The programme has three main curriculum activities, namely, theory, practical and workplace learning. It was consequently found that while many learners in the study had been exposed to the theory and practical components, there had been almost no exposure to the workplace component. This has an impact on the development of the learners' aspirations, especially for a population with limited prior contact with the construction industry and a lack of construction role models in their immediate communities.

The TVET colleges had a positive influence on the learners and strengthened their resolve to continue with construction careers, although at a level not offered at the college. In this sense, the three years at the TVET college may be regarded as very expensive career guidance because, after three years of funded education, the learners did not want to enter with the trade careers they had been trained in, but rather to divert to something they had had no knowledge of prior to enrolling at

college. The colleges therefore failed to ignite an appreciation of vocational careers in the learners or in the work packages they are being prepared for. It is therefore concluded that TVET colleges do not adequately impart technical and vocational skills that prepare learners for intermediate-level employment, self-employment and entrepreneurship.

The study concludes that although the college experience had a positive impact on the learners, this cannot be supported on a long-term basis. Having the learners enrol in a three-year programme before they finally decide on what they intend doing in the future undeniably constitutes a sub-optimal use of resources and the learners' time.

7.4 Factors that enhance career aspirations of the TVET construction learners

The research revealed that learners had no exposure to any of the factors that support the development and enhancement of career aspirations. Learners mainly came from low socioeconomic level families with no professional role models and the major sources of information on construction careers were found to be electronic media and the construction projects that were visible in their immediate communities.

The study concludes that the learners' career aspirations were developed in spite of their lack of construction role models, career guidance and exposure to the industry. It was found that many of the learners in the study had not had prior exposure to people involved with the construction industry and yet had still decided to enrol for construction programmes.

School-level career guidance does not seem to have succeeded in enabling the learners to circumscribe their career aspirations and, given their prevailing circumstances, choose educational institutions that would support their aspirations. This is borne out by the fact that learners who had successfully obtained diploma and degree passes and aspired to professional construction careers ended up enrolled in TVET institutions that provide intermediate technical and vocational skills.

7.5 Conclusion

The findings of the current study show the limited applicability of Gottfredson's theory of circumscription and compromise regarding this cohort of college learners. It was found that, generally, the learners' career choices were capricious and based on the institution and programme that was available at the time, rather than the carefully considered process of planning that characterises career circumscription and eventual compromise. The theoretical framework developed for this study, and the literature consulted, have shown many factors to be responsible for circumscription but their impact seems to be very limited in this cohort.

According to the literature, career aspirations are dependent on the gender of the learner and the predominant gender role prevalent in the career in question (Davis, 2013; Hill et al., 2003: Gottfredson, 1981; Metz et al., 2009; Schuette et al., 2012). The high percentage of female learners coupled with their limited knowledge of the potential construction careers is not an indication of the feminisation of the construction industry but rather indicates opportunistic enrolment with learners enrolling because the college programme was available. It is important to note that college applicants do not have to pre-apply for registration, but rather turn up on the day and, if spaces are available, can be registered immediately.

Career aspirations are also influenced by the family socioeconomic status with learners mainly aspiring to careers with higher social prestige to those of their parents (Joeng et al., 2013; Schuette et al., 2012; Auger et al., 2005). The influence of this factor is clearly visible in that most of the learners in the study were first-generation post-school attendees with under-educated, unemployed parents. Consequently, the decision to enrol in post-school institutions is for them an improvement on their social status, and as such, the type of programme and its potential for a career was not particularly important. The choice of a TVET college and a construction programme therefore constituted a compromise for these learners, which was considered because of the potential to move into a higher social bracket than their background currently allows.

Parental influence among this population of learners was limited because of the parents' low educational level and high unemployment. The only support that their

parents could give was emotional support, as characterised by Robbins et al. (2003). This does not, however, mean that parents do not positively influence their children's career aspirations. It is concluded from the study that despite their lack of education parents influenced their children's career aspirations by providing emotional and limited financial support where the bursary did not cover all their educational costs.

The low level of parental education meant that these learners did not have access to role models in the form of parents, siblings or immediate family to assist with career decision making. The learners' choice of construction careers in the absence of any role models is further evidence of career compromise, where learners opt for an accessible career without any first-hand knowledge of what it entails and its professional prospects.

Overall, the study has shown that Gottfredson's theory of circumscription and compromise is not applicable to the learners in this study as they had enrolled for construction programmes at TVET colleges without a comprehensive understanding of the industry. Moreover, their college experiences had not adequately prepared them for the diversity of the construction industry. It is concluded that learners enrol for the TVET programme as a result of the accessibility of the programme and the availability of funding, consequently making a compromise by choosing what was accessible to them given their social circumstances. Enrolling for the NC(V) programme is therefore not necessarily an expression of career aspirations, but a mechanism for young people to pass the time while deciding what they what they want to do in the future.

Based on the findings of this study, I conclude that TVET construction learners do not enrol in the programme in order to actualise predetermined career aspirations, and that the learners' socioeconomic status, parental influence and geographic location have limited, if any, influence on their career decision making. The study shows beyond any doubt that career decision making is primarily based on access to finance.

7.6 Recommendations

Based on the findings of the study and the analyses presented in Chapter 6, the following recommendations are made for assisting learners who wish to take up careers in construction:

- To support the learners' career aspirations, career guidance should be introduced in the lower school grades so that learners make subject choices that support educational programmes which may lead to the careers they aspire to. Schools must also endeavour to introduce practising professional role models into their career guidance programmes to expose learners to the diversity of careers in the different economic sectors.
- It is recommended that colleges develop close working relationships with industry to facilitate lecturer placement in workplaces. Such placement to expose lecturers to real-life construction projects so that they are better able to train learners and inform them about the industry as a way of entrenching their aspirations to a career in construction.
- The construction industry should work closely with TVET colleges to explain the roles involved the various careers within the industry, and to dispel the prevailing myths among learners about the jobs they can occupy in the industry. It is important that learners learn very early on to differentiate between the roles of a professional engineer and those of an engineering technician and an engineering trade worker. This will empower learners to make informed choices and to target careers that interest them.
- The colleges should support female participation in the industry by introducing learners to the broad spectrum of career options offered by the TVET programme. This would also contribute to industry transformation as female learners could be introduced to careers such as construction health and safety, store manager and material testing, careers that offer a degree of specialisation within the construction industry.
- The TVET college system must establish tracer studies that follow career progressions of their graduates to investigate where they go when they complete their NC(V) qualifications. This information would be used in curriculum design to ensure of that college programmes meet the

requirements of industries that absorb their learners and to all assist those wishing to articulate to higher education with appropriate course combinations.

This study has conclusively shown that learners do not enrol for construction programmes at TVET colleges because these programmes support their career aspirations, but rather because they are academically accessible and funding is available.

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9. APPENDICES

9.1 APPENDIX A: Letter to college principals

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Education

Request to undertake research at your college.

Career aspiration of learners enrolled in the National Certificate Vocational programme at Technical and Vocational Education and Training Colleges in South Africa.

Dear College Principal,

I am student registered for a PhD programme at the University of Pretoria requesting permission to undertake research at your college. My research is on the ***"Career aspiration of learners enrolled in the National Certificate Vocational programme at Technical and Vocational Education and Training Colleges in South Africa".***

The study will focus on learners enrolled in the National Certificate Vocational construction programme at the College. This study is part of the research component of my doctoral programme with the Department of Educational Management and Policy Studies at the University of Pretoria. I am a student researcher supervised by Professor Chaya Herman. We would like to request your permission to distribute a questionnaire to the NCV construction learners. The questionnaire will take about 30 minutes to complete.

The main purpose of the study is to investigate the career aspirations of learners enrolled in the NCV construction programme of TVET colleges with a view of improving the recruitment and retention of learners in the construction industry. As part of this study the learners will answer questions about the reasons they enrolled in construction programmes, the career guidance they received before enrolment, their social background and parental economic activity and anticipated career destination upon graduation.

The learner participation is voluntary and anonymous. All results will be aggregated for reporting and cannot be used to identify any of the individual learners. The findings will be used as part of my doctoral dissertation, published in academic journals, conferences or any other academic publication format. None of the reported data will capture individual student responses.

If you would like to discuss any aspect of the research and/or your college contribution you can contact me - Ntebo Ngozwana at 082 378 8737 or via email at Ntebo.ngozwana0@gmail.com or the study supervisor Prof. Chaya Herman at chaya.herman@up.ac.za.

Thank you in advance for agreeing to participate in this study; your learners' inputs are critical for the success of this study.

Ntebo Ngozwana
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Prof. Chaya Herman
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9.2 APPENDIX B: Research questionnaire

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Education

Career aspirations of learners in the NCV programme at Technical and Vocational Education and Training Colleges

Student Name:

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Supervisor

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Respondent number	For Office Use Only V0

1. Gender

Male	1
Female	2

v1

2. Age in years

v2

3. Race

Black	1
Coloured	2
Indian	3
White	4

v3

4. Home language

Sepedi	1
Ndebele	2
Setswana	3
xiTshonga	4
Sesotho	5
isiXhosa	6
isiZulu	7
Venda	8
English	9
Afrikaans	10

v4

5. What is your home province?

Northern Province	1
Mpumalanga	2
Gauteng	3
Northwest Province	4
Free State	5
Northern Cape	6
Western Cape	7
Eastern Cape	8
KwaZulu Natal	9

v5

6 Which college are you enrolled in?

Tshwane South College	1
	2
	3

v6 ☐

7 What is your highest school leaving qualification?

Grade 9	1
Grade 12	2

v7 ☐

8. What results dod you get in your grade 12? (NSC)

Batchelor's pass	1
Diploma pass	2
Higher certificate pass	3
Did not pass	4

v8 ☐

9. What were your Grade 12 result interval (as indicated on your certificate)

730 - 839	1
840 - 1048	2
1050 - 1259	3
1260 - 1469	4
1470 - 1679	5
1680+	6

v9 ☐

10. What were your results in these subjects?

Home Language	1	v10a ☐☐
English	2	v10b ☐☐
Mathematics	3	v10c ☐☐
Math Literacy	4	v10d ☐☐
Natural Sciences	5	v10e ☐☐
Accounting	6	v10f ☐☐
Business Economics	7	v10g ☐☐
Geography	8	v10h ☐☐
Technical drawing	9	v10i ☐☐
Other (specify)	10	v10j ☐☐

11. What were your reasons for enrolling at TVET college (choose more than one)

Interested in the field of study	1
To be able to get a job on comletion	2
It was affordable	3
Brother/sister studies at TVET college before	4
It doesn't take a long time to get a qualification	5
It was easier to be admitted to the TVET college	6
Other (specify)	7

v11a
v11b
v11c
v11d
v11e
v11f
v11g

12. What level of study are you currently enrolled in?

NCV 1	1
NCV 2	2
NCV3	3

v12

13. What is your planned trade specialisation?

Civil construction	1
Carpentry	2

v13

14. What is your father's highest educational qualification?

Below Grade 9	1
Grade 12	2
Diploma level	3
Degree level	4
Postgraduate degree	5
Technical qualification	6

v14

15. What is your mother's highest educational qualification?

Below Grade 9	1
Grade 12	2
Diploma level	3
Degree level	4
Postgraduate degree	5
Technical qualification	6

v15

16. What is the employment status of your father?

Unemployed	1
Domestic worker	2
Self-employed	3
Manual labour	4
Administrative work	5
Professional work	6
Technical work	7
Managerial work	8
Sales work	9
Other (specify)	10

v16 [ ][ ]

17. What is the employment status of your mother?

Unemployed	1
Domestic worker	2
Self-employed	3
Manual labour	4
Administrative work	5
Professional work	6
Technical work	7
Managerial work	8
Sales work	9
Other (specify)	10

v17 [ ][ ]

18. Approximately how much does your father earn per month?

No fixed income	1
R1 - R1400	2
R R1400 - R3000	3
R3001 - R6400	4
R6401 - R12800	5
R12801 - R25600	6
R25601 - R51000	7
R51001 - R102 400	8
I don't know	9

v18 [ ]

19. Approximately how much does your mother earn per month?

No fixed income	1
R1 - R1400	2
R R1400 - R3000	3
R3001 - R6400	4

v19 [ ]

R6401 - R12800	5
R12801 - R25600	6
R25601 - R51000	7
R51001 - R102 400	8
I don't know	9

20. Who is responsible for the payment of your fees?

Father	1
Mother	2
Brother/sister	3
Aunt/uncle	4
I have a bursary	5
Other (specify)	6

v20 ☐

21. What type of house do you live in at home?

Brick house in own yard	1
Traditional thatched house	2
Informal structure	3
Flat in town	4
Townhouse (cluster)	5
Other (specify)	6

v21 ☐

22. Do you have any brother/sisters currently in post school colleges or university?

Yes	1
No	2

v22 ☐

23. If yes, how many?

One	1
Two	2
Three	3
More than 3	4

v23 ☐

24. What kind of career guidance did you reveive at school? (Tick all applicable)

Informative (gave all available options)	1

v24a ☐

Independent (not given by a representative of any institution or occupation	2	v24b
Impartial (not favouring any one career)	3	v24c
Inspirational (motivating for higher achievement)	4	v24d
Professional (the counselor knoew what they were talking about)	5	v24e
Only limited to university studies	6	v24f
Only limited to employment options	7	v24g
No career guidance given	8	v24h

25. How can you rate the quality of guidance?

Poor (did not affect me at all)	1	v25
Basic (provided basic information)	2	
Good (provided useful infromation)	3	
Very good (help me make decisions)	4	
None	5	

26. Why did you decide to follow a career in the building and construction industry? (tick all applicable)

Interested in the type of work	1	v26a
Working conditions	2	v26b
Availability of jobs	3	v26c
Social prestige of occupation	4	v26d
Good salary projections	5	v26e
To do good in society	6	v26f
Possibility of Self employment	7	v26g
Social prestige of occupation	8	v26h
Family member in the industry	9	v26i
Other (specify)	10	v26j

27. When did you first decide to study for a construction related career?

At primary school	1	v27
At secondary school	2	

During the Grade 12 year	3
After completing Grade 12	4
Other (specify)	5

28. Why did you choose to enrol in a TVET college? (tick all applicable)

Availability of places	1	v28a
Affordability of the programme	2	v28b
Relevance of the programme	3	v28c
Proximity to home	4	v28d
Access to bursary	5	v28e
Brother/sister studied at college	6	v28f
Other (Specify)	7	v28g

29. My source of information about construction careers was? (tick all applicable)

Books and newspapers	1	v29a
Electronic media (TV and radio)	2	v29b
Promotional material	3	v29c
Information from people in the industry	4	v29d
Career expo at school	5	v29e
Career counseling at school	6	v29f
Family members in the industry	7	v29g
Other (specify)	8	v29h

30. To what extent have the following influence your choice of a career in the building and construction industry? (tick all applicable)

Interest in the industry	1	v30a
Appropriate entry level based on school leaving results	2	v30b
Job opportunties in the industry	3	v30c
Opportunities for further studies	4	v30d
Opportunities for high paying job	5	v30e
Opportunities to start my own business	6	v30f
Parents involved in the industry	7	v30g
Friends in the industry	8	v30h
Career guidance at my old school	9	v30i
Other (specify)	10	v30j

31. What kind of career within the construction industry do you wish to follow after graduation? (tick all applicable)

Working as a general worker	1	v31a
Working as a supervisor	2	v31b
Working away from home	3	v31c
Working at home	4	v31d
Midlevel position in a company	5	v31e
Owning my own company	6	v31f
Other (specify)	7	v31g

32. Tick one of the following

Job title	I would like to work	I will probably		
General construction worker	1		v32a	
Qualified artisan	2		v32b	
Construction supervisor	3		v32c	
site supervisor	4		v32d	
Project manager	5		v32e	
Engineer	6		v32f	
Architect	7		v32g	
Quantity surveyor	8		v32h	
Business owner	9		v32i	
Other (specify)	10		v32j	

33. After completion of my TVET studies I would like to; (tick all applicable)

Study further at university	1	v33a
Study at a university of technology	2	v33b
Start work immediately	3	v33c
Change courses and study further	4	v33d
Open my own business	5	v33f
Other (specify)	6	v33g

34. In your opinion how has enrolling in the NCV programme influenced your decision to work in the contruction industry?

Strongly encouraged me to join the industry		1	34a
Encouraged me to join the industry		2	34b
No influence at all		3	34c

Discouraged me from joining the industry	4	34d	
Strongly discouraged me from joining the industry	5	34e	

35. Which subject did you find most interesting/ enjoyable? (Tick all applicable)

Construction planning	1	35a	
Materials	2	35b	
Plant and equipment	3	35c	
Construction supervision	4	35d	
Masonry	5	35e	
Plumbing	6	35f	
Roadwork construction	7	35g	
Other (specify)	8	35h	

36. What activities of the study programme do you find most interesting/enjoyable? (Tick all applicable)

Theory classes	1	36a	
Practical work	2	36b	
Workplace exposure	3	36c	

37. Which of the following activites have you been exposed to in your programme? (Tick all applicable)

Theory classes	1	37a	
Practical work	2	37b	
Simulated learning opportunties	3	37c	
Visits to construction sites	4	37d	
Vacation work	5	37e	
Workplace exposure	6	37f	

9.3 APPENDIX C: Information letter to learners

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Education

Invitation to participate in a study entitled:

Career aspiration of learners enrolled in the National Certificate Vocational programme at Technical and Vocational Education and Training Colleges in South Africa.

Dear NCV Learner,

You are invited to participate in a study on the career aspirations of learners enrolled in the construction programme at Technical and Vocational Education and Training Colleges. This study is part of the research component of a doctoral programme with the Department of Educational Management and Policy Studies at the University of Pretoria. It is undertaken by Ms. Ntebo Ngozwana under the supervision of Professor Chaya Herman. We would like you to answer this short questionnaire survey that will take about 30 minutes to complete.

The main purpose of the study is to investigate the career aspirations of learners enrolled in the NCV construction programme of TVET colleges with a view of improving the recruitment and retention of learners in the construction industry. As part of this study you will answer questions about the reasons you enrolled in construction programme, the career guidance you received before enrolment, your social background and parental economic activity and anticipated career destination on graduation.

The survey is anonymous and all results will be aggregated for reporting and cannot be used to identify you. When you submit this questionnaire, it will not be possible for anyone, including the researcher, to establish your identity. Your responses will be combined with those of other participants and will be used as part of my doctoral dissertation, published in academic journals, conferences or any other academic publication format. None of the reported data will capture individual student responses.

If you would like to discuss any aspect of the research and/or your contribution to it after completing the survey questionnaire, you can contact me - Ntebo Ngozwana at 082 378 8737 or via email at Ntebo.ngozwana0@gmail.com or the study supervisor Prof. Chaya Herman at chaya.herman@up.ac.za.

Thank you for participating in this study; your inputs are critical for the success of this study.

Ntebo Ngozwana
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