

UNIVERSITY OF KWAZULU-NATAL

REDUCING YOUTH UNEMPLOYMENT BEYOND THE YOUTH WAGE  
SUBSIDY: A STUDY ON SIMTECH APPRENTICES

By

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## **Abstract**

South Africa currently has the twin challenges of worsening youth unemployment and scarce skills that threatens its economic and social stability. Artisan trades are a profession that symbolises strongly this current problem. Simtech Training Institute in Durban, the study setting, currently trains artisan apprentices and facilitates their internship work placements. The problem currently faced by these Simtech apprentices was that their workplace internships were not leading to permanent employment after the two-year Youth Wage subsidy period. The objective of this study was to identify some of the critical success factors that differentiated Simtech artisan apprentices that obtained permanent employment compared to those currently unemployed. This was a cross-sectional study conducted among 51 artisan apprentices who graduated over the past three years at Simtech and were selected randomly. An online questionnaire made up primarily of Likert scale type questions was utilised to obtain the responses from the sample. Factor analysis was used to remove scale items from the independent variables that did not impact the variability sufficiently. Then the variables impacted significantly were combined and categorised. Finally, logistic regression analysis was conducted to identify success factors for permanent employment of Simtech graduates. The major finding was that internship/workplace environment had a statistically significant impact on permanent employment. A further finding was that youth work ethic had a minor impact on permanent employment status albeit not a statistically significant one. The main recommendation put forward by this dissertation was that intern host companies must improve their internship programmes greatly to unlock the mutual benefit of reduced youth unemployment and reduced skills shortages. Future research can explore the findings of this study over a larger population.

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## **Chapter 1: Introduction**

### Introduction

This chapter introduced the background to the study, the research problem and the research objectives that the study sought to achieve. This chapter further elaborates on the key focus of the study, expected outcomes and expected limitations of the study. The chapter concludes with a structure that the dissertation will follow through the various chapters.

### **1.1. Background**

At present South Africa faces the twin challenges of rising youth unemployment rates and worsening scarce skills required to drive economic growth. Youth unemployment currently sits at 70% (StatsSA, 2014). This situation is likened to a “ticking time bomb” (Burnett (2014).

South Africa currently has 30 000 less artisans than it requires based on vacancies (Akoojee (2013a). There is thus a major focus on artisan training schools and apprenticeships in the workplace to produce more artisans for the economy (Simkins, Rule, and Bernstein (2007). The effectiveness of such workplace apprenticeships is an important lever to increase qualified artisan output. At a micro-level, this research study looked at the Simtech Training Institute in Durban. Simtech trains young artisan apprentices and facilitates workplace placements for their students. Private institutions such as Simtech training institute, which was the study setting of this research dissertation project, have been established to increase the number of artisan apprentices graduating into the labour market. They have been trying to fill the gap caused by the closing down off the SOE training schools. Whilst organisations like Simtech provide most of the theoretical and practical aspects of a trade onsite at their training school premises, they are reliant on industry companies

to provide the apprentices with much needed workplace experience (Simon, Pauline, and José-Luis (2014) Allais (2012).

Past issues on both the supply side and demand side have impacted the current state of affairs (Aghion, Braun and Fedderke, 2008). Such factors include an ineffective education system, technological shifts towards increasing mechanisation and decreased interest in artisan trades (Altman (2007).

There is no quick fix to the current high youth unemployment levels (Yu (2013). The Employment Incentive Bill was introduced on 1 January 2014. This legislation is better known as the Youth Wage subsidy. The objective of this legislation was to encourage the employment of young people with limited work experience by using tax incentives (Rankin and Roberts (2011). This tax incentive scheme will run for a three year trial period whereby its effectiveness shall be ("Confronting Youth unemployment: Policy options for South Africa," 2011). Various factors can contribute to the effectiveness of internships. These can be influenced by both young artisan apprentices and internship host companies (Fougere, Kramarz, & Magnac, 2000).

## **1.2. Problem Statement**

According to the President's State of the Nation address (SONA, 2016), 270 000 new jobs have resulted from the Youth Wage Subsidy. The conversion of these additional temporary jobs into sustainable permanent jobs is currently unclear. There was a gap in contemporary knowledge.

This youth unemployment problem becomes even direr when looking at artisan trades. Current artisan apprenticeship programmes were not having the desired effect in reducing youth unemployment whilst producing scarce skills for the economy (Oseifuah, 2010). Presently there were only 50% of apprentices at Simtech over the past three years, the study setting, that had attained permanent employment after their two year workplace internship. This conversion ratio to permanent employment was worryingly low. A lot more needed to be done to improve the output of such apprenticeship programmes (Smith, Jennings, and

Solanki (2005). This study sought to solve the problem of what critical success factors ensure apprenticeship programmes yield the desired output of qualified artisans that are permanently employed and contributing to South Africa's economy (Witte, Rothmann, & Jackson, 2012). The study looked at present shortcomings from both the young artisan apprentice and their employers.

### **1.3. Motivation of the study**

Contemporary literature has focused on the additional jobs that have resulted from the Youth Wage subsidy and not the permanency of such jobs (Levinsohn, Rankin, Roberts, and Schöer (2014)Mtembu and Govender (2015). A deeper look at the initial workplace experiences of young people was needed (Moleke (2006). This study contributed new knowledge to this subject area of South African youth unemployment and scarce skills.

The insights gained from this study can help internship host companies to improve their apprenticeship programmes. It can also help young artisan apprentices to maximise their apprenticeship periods. It can help artisan training centres like Simtech choose their work placement partners better and refine their curriculum to address emerging needs. Lastly government can improve their tax incentive policies geared towards artisan development (Mtembu and Govender (2015).

### **1.4. Research objectives**

This study seeks to accomplish the following research objectives, in no particular order of importance:-

a.) To investigate whether the internship/workplace environment of Simtech's young artisanal apprentices significantly impacted their attainment of permanent employment post the apprenticeship period.

b.) To identify whether the work ethic of Simtech's young artisanal apprentices significantly impacted their attainment of permanent employment post the apprenticeship period.

c.) To determine whether the employability skills of Simtech's young artisanal apprentices significantly impacted their attainment of permanent employment post the apprenticeship period.

### **1.5. Research questions or hypotheses**

The research objectives stated above were translated into the hypotheses below that could be statistically tested to ascertain the correlation of the independent variables and the dependent variable. This helped the study to achieve its objective of explaining the critical success factors that impacted young artisan apprentices obtaining permanent employment post their apprenticeship period.

Hypothesis 1 – H1: Internship/workplace environment (independent variable) is significantly related to artisan apprentices' permanent employment status (dependent variable) post the apprenticeship period.

Hypothesis 2 – H2: Youth work ethic (independent variable) is significantly related to artisan apprentices' permanent employment status (dependent variable) post the apprenticeship period.

Hypothesis 3 - H3: Employability skills (independent variable) are significantly related to artisan apprentices' permanent employment status (dependent variable) post the apprenticeship period.

### **1.6. Expected outcomes**

Sufficient data will be collected and analysed to yield statistically significant conclusions to base recommendations on. It is expected that a deeper

understanding of present shortcomings of artisan apprenticeships will be uncovered and proposed corrective measures put forward to address the situation.

### **1.7. Focus of the study**

This study focused on the actual workplace experiences of young artisan apprentices and how these experiences could be improved. The underlying causes for the current state of youth unemployment and scarce skills were not critically reviewed by this study. Factors such as sluggish economic growth, a mediocre education system and technological changes were acknowledged in this study but not investigated further (Arora and Ricci (2005); Bhorat (2007)).

There were contrasting views on the Youth Wage Subsidy (Burns, Edwards, and Pauw (2010); Rankin and Roberts (2011)). The primary focus of this study was however to propose solutions to improve the production of qualified artisans at Simtech Training Institute.

### **1.8. Expected limitations of the study**

Time and resource constraints limited the sample size selected for this study. Simtech Training institute was only one of many artisan development centres in South Africa. The results of this dissertation were unlikely to be generalizable to all artisan apprentices and their employers in the country. The success factors identified and tested in this dissertation were by no means collectively exhaustive. There were quite likely other factors that could impact permanent employment of artisan apprentices.

### **1.9. Structure of the study**

The research study was structured in the format below that also explained how the individual chapters linked to each other as well as what the goal of each chapter was.

## **Chapter 1: Introduction**

This chapter outlined the background to the study and what problem statement it sought to solve. The chapter also stated what the purpose of the study was and how it contributed to the generation of new knowledge and which stakeholders in society, the study benefited. The structure of the study was outlined in this chapter. Also the goal of each individual chapter and how each chapter related to other chapters was explained. Any expected outcomes or limitations of the study were stated upfront.

## **Chapter 2: Literature Review**

This chapter focused on conducting a thorough review of the youth unemployment and scarce skills problem in South Africa and the rest of the world. The literature review then honed in on the role that artisanal apprenticeships play in addressing the twin challenges of youth unemployment and scarce skills. Lastly the literature review sought to critically analyse and debate the contemporary knowledge available on the critical success factors for a successful artisanal apprenticeship that culminated in the end goal of sustainable permanent employment for the youth worker.

This chapter also identified the key independent variables for a conceptual model that relates independent variables to the dependent variable of permanent employment status. It was this conceptual model that was then explored by a suitable research methodology detailed in Chapter three of the study.

## **Chapter 3: Research Methodology**

The goal of this chapter was to develop a suitable research methodology that could measure and analyse the key research variables identified in chapter two of the study.

The literature review in Chapter two highlighted important constructs which could possibly explain the critical successful factors of Simtech artisan apprentices that attained permanent employment. This possible relationship is depicted in the conceptual model presented in this chapter.

This chapter detailed how a representative sample was chosen that gave useful inferences that possibly applied to broader populations in subsequent studies. A suitable research instrument that could be administered within the tight timeline of the MBA dissertation was designed to obtain relevant data. This data was organised, statistically analysed and relevant conclusions drawn. The results of this research questionnaire were detailed in Chapter four. The logic conclusions crystallised into applicable recommendations were stated in Chapter five of this study.

#### **Chapter 4: Results**

This chapter stated the results of the research survey that was developed and administered in chapter three. The raw data was organised, cleaned up and statistically analysed. The logistic regression analysis method was used.

#### **Chapter 5: Discussion**

This chapter drew conclusions from the results tabled in chapter four and synthesized them into recommendations that could be practically applied by the stakeholders that this study was intended to benefit. This chapter linked clearly the literature findings and empirical research to detect similarities and contradictions.

#### **Chapter 6: Conclusion and Recommendations**

The goal of this chapter was to review whether all the intentions of the study outlined in the chapter one introduction had been answered and put forward recommendations.

The chapter also states what opportunities for future research were identified. These were areas that were identified but that could not be investigated further due to time and resource constraints. Limitations of the study were also be discussed.



## **Chapter 2: Literature Review**

### **2.1. Introduction**

This literature review first looked holistically at the youth unemployment and scarce skills problem in South Africa and the rest of the world. The literature review then honed in on the role that artisanal apprenticeships play in addressing the twin challenges of youth unemployment and scarce skills. Lastly the literature review critically analysed and debated the contemporary knowledge available on the critical success factors for a successful artisanal apprenticeship that culminated in the end goal of sustainable permanent employment for the young artisan apprentice.

This study uncovered a conceptual model that sought to explain the correlation of the three independent variables of work ethic, internship/workplace environment and employability skills in predicting the dependent variable of permanent employment status.

### **2.2. Youth Unemployment**

Youth unemployment was one of the most concerning trends in the global labour market (Ogbuanya (2012). It was particularly prevalent in developing economies such as South Africa (Mlatsheni and Rospabé (2002). High youth unemployment rates contributed to a number of socio-political problems in countries such as high crime rates, high poverty levels and radical political upheavals like the Arab Spring uprisings that swept through North Africa most notably Egypt a few years ago (Akoojee and Gonon (2013). South Africa was starting to experience similar rhetoric with the emergence of the Economic Freedom Fighters political party that sought to obtain economic freedom for its predominantly young support base (Burnett (2014).

Developed countries such as Germany and Japan were not immune to youth unemployment and skills shortages either (Akoojee and Gonon (2013). Declining population rates coupled with a disinterest by their young people in blue collar artisanal trades had resulted in a “lost generation” of artisans emerging in these countries (Wildschut, Meyer, and Akoojee (2015). This meant that these countries also needed to import such scarce skills into their economies. This phenomenon drove a global scarcity of artisans (Horwitz (2013).

### **2.3. Scarce skills in South Africa**

South Africa’s economic growth has been constrained due to skills shortages in certain occupations and trades according to (Akoojee (2013a). Many of these scarce skills lie in the artisanal trades. This was reflected in the Top100 scarce skills list published annually by the Department of Higher Education and Training (DHET) over the past decade. The DHET also in 2012 declared the “Decade of the Artisan” (Jacobs and De Wet (2013). The purpose of this declaration was to highlight the importance of artisans and to prioritise artisan development in the country. This highlighted the level of seriousness that artisan development was viewed by government.

The shortage of skills had necessitated the government to allocate scarce skills quotas or permits to import these skills into the country (Rennkamp and Westin (2013). This has been necessary to keep the economy afloat and enable key projects such as the 2010 FIFA World Cup to be successfully hosted by the country. Foreign workers have benefited from these scarce skills quotas to take up jobs that there were no sufficiently qualified South Africans to fill. However, this outcome has presented a few social problems. These foreign workers were seen by many local South African workers as “stealing their jobs” (J. D. Stuart (2013). This led to heightened tensions which boiled over into the xenophobic attacks in the country in 2014 (Burnett (2014). As a counterargument, it must however be acknowledged that skills transfer had occurred between many of these foreign workers to the benefit of South African artisans (Hauschildt, Brown, and Zungu (2013). This has helped with the skills development of local artisans. Indeed the scarcity of South African artisans

would have been far direr had this skills transfer process not taken place (G Kruss et al. (2014).

#### **2.4. The role of the apprenticeship system in South Africa**

The apprenticeship system in South Africa had a turbulent past. During Apartheid, it was used as a job reservation gatekeeper to prevent black people from accessing these trades (Smith et al. (2005). This was one of the reasons for the current shortage of artisans in South Africa. The majority of the population was prevented from accessing apprenticeships which created a “lost generation” of artisans in the South African labour market (Glenda Kruss and Wildschut (2015).

Another important reason for the current shortage of artisans was the discontinuation of many State Owned Enterprises (SOE) apprenticeship schools after the new democracy in 1994 G Kruss et al. (2014). This was necessitated by the need for these organisations to become more profitable. As a result, artisan apprentice training was deemed a non-core activity and many training schools were shut down recalls (Akoojee (2013b). This has caused a severe loss of training capacity in South Africa for artisanal trades. Many former instructors and trainers retrenched more than a decade ago are now no longer around. It would indeed take a lot to re-establish the institutional capacity of these SOE training schools (Wedekind (2013).

Over the past twenty years blue-collar occupations such as artisanal trades had become less and less popular as most young people have sought university education to access occupations in the service industry and information technology sectors (Schlechter, Faught, and Bussin (2014); Wildschut et al. (2015). South Africa is not alone in this regard as there was a similar trend in developing economy peers such as India and Nigeria (Sruthi and Ramesh, 2015; Ukachi (2015). This seeming unattractiveness of artisanal trades has been addressed by campaigns such as the “Decade of the Artisan” that the Department of Higher Education and Training” (Wildschut, Akoojee, and Meyer (2013). Recent phenomenon such as the

widespread drought in the country has also popularised an artisanal trade such as plumbing particularly in the rural areas of the country (Wildschut et al. (2013). Suddenly becoming a “water warrior” as a plumber carries significant social status for the artisan.

## **2.5. Critical success factors of employed apprentices**

The literature review next examined closely possible critical success factors of artisanal apprenticeships. The structure of examining the critical success factors was to first look at the issue from an individual level through the youth work ethic; it then proceeded to look at the issue from a company level through the workplace environment; and lastly it focused on an enabling level through the employability skills gained. It was acknowledged that these were not the only three constructs that contribute towards the attainment of permanent employment by young artisan apprentices. However, it was the main factors derived from the current body of knowledge through the literature review (Kruss and Wildschut, 2015).

### **2.5.1. Youth work ethic**

Whilst acknowledging the existence of circumstances beyond the control of the youth worker Becton, Walker, and Jones-Farmer (2014), there is much that a youth worker can do through hard work and effort to influence their progress during the internship. South Africa has one of the lowest work ethics in the world (De Armas, Grove, Hiatt, Taylor Roy, and Quezada (2014). This is reflected in many studies most notably “The World Economic Forum – Global competitiveness index” where South Africa ranked 134<sup>th</sup> out of 144 countries that participated in the benchmarking exercise (Becton et al. (2014). Accusations of an “entitlement mentality” creeping into the minds of young South Africans have been bandied about. Unrealistic dreams of large rewards with very little efforts have also played a part in diminishing the work ethic of South Africa’s young people (Rauscher, Wegman, Wooding, Davis, and Junkin (2013).

Society bore the responsibility for assisting unemployed youth with social grants in the income provision system. This was thought to create an entitlement mentality in young people and diminished their will to work (De Armas et al., 2015). The loss of these two elements also impoverishes the life satisfaction of such individuals. Vicki Culpin et al. (2015) stated Maslow's theory that self-actualisation was one of the key elements of a human being's hierarchy of needs. A dependent, unemployed person was deprived of the higher levels of Maslow's hierarchy of needs.

The individual young worker carried the responsibility to make him or her employable in the activation system. This was achieved through acquiring new skills and improving their productive outputs. The state still played an enabling role. They provided an environment that was conducive to employment creation. This was achieved through central job matching databases and employment offices (Boyle, 2015).

Unemployment in Europe was viewed more as an individual problem or illness that had to be cured (Boyle, 2015). This contrasted with South Africa's more social attitude towards viewing unemployment as a social problem.

Work ethic was determined by a number of different factors. There was some consensus on certain key elements that constituted the construct of work ethic. Reliability, initiative and determination were important (Roberts (2013)Deal et al. (2013). Character was highlighted as extremely important (Cohen, Panter, Turan, Morse, and Kim (2014)Glenda Kruss and Wildschut (2015). Accountability was put forward strongly too (;Rauscher et al. (2013).

#### **2.5.1.1. Reliability**

Reliability was one of the most desirable traits that an employee could have (Vicki Culpin et al. (2015). Employers, customers, suppliers and work colleagues all relied on reliable people. Does a young person execute what he/she says they will do? Do they do it on time? Are they punctual in their attendance? The ability to answer these questions convincingly were all hallmarks of reliable employees (Rauscher et al. (2013). Youth workers that could display this quality should theoretically have a

better chance of succeeding during their internship and obtaining permanent employment thereafter (Alharbi (2014).

#### **2.5.1.2. Initiative**

Initiative was another important attribute in contemporary workplaces (Roberts (2013). Young apprentices had to be able to motivate themselves to tackle more tasks and drive their own personal growth (Deal et al. (2013). With most employers having lean structures, mentors did not have much time to spend with each individual artisan apprentice. Young apprentices must create and grab opportunities to learn more and take on additional tasks. Initiative was a key quality that helped a young apprentice to stand out from his peers in the eyes of employers (Deal et al. (2013). This could therefore be a powerful differentiator in a young apprentice attaining permanent employment.

#### **2.5.1.3. Determination**

It was important that young apprentices had resilience to ride out difficult experiences during their career (Lyons, Schweitzer, and Ng (2015). An ability to constantly evolve and stay relevant must also be part of an individual's repertoire H. Stuart et al. (2014). Obstacles were part of any career and successful workers embraced these challenges to climb to greater heights. As a starting point, young apprentices must have the discipline and commitment to complete their daily allocated tasks. They should have pride in their work output and not leave work without completing what is due. Such young apprentices were admired by their employers (Ng, Lyons, and Schweitzer (2012)

#### **2.5.1.4. Accountability**

Young apprentices must learn to take accountability for their actions in aspects such as occupational health and safety (Raykov and Taylor (2013). Accountability implied taking personal responsibility for ones actions and outcomes in every situation.

Accountable people did not make excuses for failing to accomplish their goals and targets. Young artisan apprentices need to push themselves and look inwardly to improve their work performance and accelerate their learning during internships. It was not a good reflection on the young apprentice if they start blaming others for their failures. Such behaviour was looked at negatively by employers Vicki Culpin et al. (2015).

#### **2.5.1.5. Character**

Character and personal demeanour were important (Van der Walt and de Klerk (2014). These characteristics often came from an individual's background and upbringing Stanton and Matthews (1995) and (Cohen et al. (2014). Parental guidance and support often moulded the character traits of young people. Some common character traits were honesty and trustworthiness which are often seen as hallmarks of successful high-performing employees. Character was something built up over a lengthy period of time yet can be destroyed quickly through negative actions (Schreiner, 2015). Youth workers needed to demonstrate their good character repetitively and consistently to earn themselves a good reputation during their artisanal apprenticeships.

#### **2.5.2. Workplace/internship environment**

This section approached the youth unemployment problem from the level of the institution/company that took in youth workers and were responsible for training and moulding them into productive, competent individuals for which these institutions/companies sometimes received tax incentives such as skills levies or the Youth Wage Subsidy.

##### **2.5.2.1. Mentorship quality**

The quality of mentorship was extremely important to ensuring the success of the internship period and nurturing young talent within an organisation. Many studies

looked at the quality of mentorship and presented a variety of viewpoints (Doerwald, Scheibe, and Van Yperen (2015)Patil (2015).

The initial chance taken on a young individual by an astute mentor who saw the potential of the individual often unearthed gems that went on to be highly successful employees who contributed much to the success of organisations (Mulligan-Ferry and Nugent, 2016). Surely given the impact such decisions could have on both companies and young workers, it was important that mentors are chosen carefully. Unfortunately far too often this selection of mentors was not done correctly (Patil, 2015). Either the mentor was overloaded with work and had insufficient time to fulfil his or her duties; or the mentor was disinterested in the growth of the youth worker and saw them as a threat to his position in the company. Indeed in South Africa, with the introduction of the Youth Wage Subsidy, there was much resistance and antagonism from older workers towards young workers (Doerwald et al. (2015).

Mentors bring valuable experience to the table. This was particularly relevant in disciplines such as engineering, where skills and knowledge were transferred in a highly practical environment. Luo, Li, Wang, and Zhao (2015) illustrated a good example of how engineering students in China benefited from good mentoring by professional engineers. This viewpoint was affirmed by Prince (2015) which showed how much trainee teachers benefited from effective mentors.

Mentors and youth workers often have a certain chemistry that determines how successful their relationship will be (Agyemang, Dzandu, and Boateng (2016). To evaluate perceived and actual similarity, Mitchell, Eby, and Ragins (2015)revealed that protégés that perceived their mentors as similar had better mentoring experiences. In a country such as South Africa, workforce diversity is common practice. This pits mentors and protégés from vastly different backgrounds against each other. How well and how quickly they establish a good rapport can contribute to the success of the internship mentoring. This was backed up by Doerwald et al. (2015) where the age gap of the mentor and the protégé was a significant barrier that had to be overcome. Effective mentoring leads to better skills transfer and can reduce unemployment.



#### **2.5.2.2. Training & Development opportunities**

It was of vital importance that relevant training and development opportunities are afforded to young workers during the internship period. This was to ensure that they are continuously learning valuable skills and improving as future employees (Rènette du Toit and Roodt (2008).

In Downs (2015), the investment in high potential employees yielded significant results for companies in the long term. This view was supported by Boyle (2015), where significant training investment had started to yield the desired outcomes with more engineering interns becoming competent to meet the needs of industry in Scotland.

South Africa invested a large amount of money in training and development each year. This was largely collected via Skills Levies Act and administered by SETA's. The success of these organisations though had been questionable (Smith et al. (2005). More needed to be done to extract more value out of the training sessions relative to the amount spent on them. (Ben-Hur, Jaworski, & Gray, 2015) postulated whether the training budgets were being spent on the right things.

#### **2.5.2.3. Talent pipeline management**

Companies must approach the internship process with a sincere attitude to use the process to drive their talent pipeline management. This sincere attitude was important to create permanent jobs for competent, deserving interns (Rabbi, Ahad, Kousar, and Ali (2015). Far too often companies used tax incentives such as the Youth Wage subsidy to take on interns but had no sincere intention of permanently employing any of them (Clark, Glew, and Andrews (2015). The end result was the high number of youth workers that were passed on from one internship program to another. This benefited both the young worker and the country very little and perpetuated the cycle of youth unemployment as more matriculates entered the job market each year (Alkhalaf, Zaballero, and Alzahmi (2015).

Progressive companies viewed the internship process as a way of securing the scarce skills that they required to drive their business ambitions (Edmond, Hillier,

and Price (2007). In Drew (2015), there was a concerted effort made to capture the young talent and brightest minds in the labour market. This was further enforced by Rabbi et al. (2015) that talent management was a significant source of competitive advantage. Alkhalaf et al. (2015) reiterated this view that company strategy is built around their talent pipeline management.

In a South African context, there was a dire need for engineers, artisans and technicians in the labour market to drive the country's growth ambitions Renette Du Toit (2003). This was clearly evident from the scarce skills list published by the Department of Labour. This made a strong case for a concerted drive by companies to have a well-structured talent pipeline management plan. In Clark et al. (2015), work based learning during an internship period was a vital component of grooming the engineering skills required by industry.

### **2.5.3. Employability skills**

The International Labour Office (2013) referred to core employability skills as those skills necessary for lifelong learning and was transferable across career roles. It was said by the ILO that these skills equipped young workers to adapt to continuous change in the world of work and prevented their skills from becoming obsolete. The ILO had narrowed down these core employability skills to: -

- a.) Learning to learn – this implies that an employee commits to lifelong learning and is prepared to adapt to ever changing circumstances,
- b.) communication – this implies that an employee can understand others and be understood by others,
- c.) teamwork – this implies that an employee can work effectively with others and possess the necessary social skills to fit in with groups and
- d.) problem solving – this implies that an employee can solve problems or challenges in a logical way and respond to uncertainty.

Worryingly the Mckinsey report (2013) stated that 43% of employers could not find the required employability skills in young workers. This showed that there was a lot

more needed to be done to improve the employability skills of young workers and thus enhance their employment chances.

Research and subsequent debate on the key role of employability in reducing youth unemployment was at a much more advanced state in the more developed countries of the USA and Europe (Huq and Gilbert (2013) Finch, Hamilton, Baldwin, and Zehner (2013).

Malaysia was a fellow emerging country like South Africa. In Husain, Mokhtar, and Ahmad (2010), the importance of employability skills was examined from an employer's perspective. Their research approach comprised of using a SCANS model as their main instrument and they had 180 respondents. The focus of their study was primarily the engineering sector which makes it highly relevant to this dissertation project. The sample size was also quite similar to the sample sought with Simtech artisanal apprentices that have graduated in the past three years. The SCANS model was adapted by (Husain et al., 2010) and used a questionnaire with a 5 point Likert scale to measure seven items of employability skills. The findings revealed that having good employability skills made a student more likely to be employed.

The original SCANS model was developed after the USA Secretary of Labour appointed a commission to discover the skills that youth workers needed to succeed in the workplace (Husain et al., 2010). There were five key competencies highlighted in the SCANS model namely:-

- a.) Communication skills,
- b.) Interpersonal skills,
- c.) Critical thinking skills,
- d.) Problem solving skills and
- e.) Entrepreneurial skills.

In South Africa, there has been a large focus on providing access to workplace internships via the Youth Wage Subsidy that was launched in 2014. This is a noble effort given that the first work experience plays a significant role in a young worker's

career. However not enough focus has been put into the actual internship period in preparing the youth worker for permanent employment jobs either elsewhere or within the same company (Du Toit, 2003).

#### **2.5.3.1. Communication skills**

South Africa is a diverse country with 11 official languages. Many South African school leavers had poor communication skills in English, which was the primary language of business in the country (Burger and Woolard (2005). English was not the mother tongue language of the majority of the population. Communication skills were thus a key element of the construct of employability skills. The research questionnaire tested the impact that communication skills had on attaining permanent employment. Simtech training institute understood that many of its young apprentices lacked the self-confidence to communicate effectively in the workplace. The training school focused heavily on improving the communication ability of its first year students. There was a foundation module on English communication. This enabled most apprentices to reach an acceptable level.

#### **2.5.3.2. Interpersonal skills**

Strong interpersonal skills were required to work effectively in teams in a multi-cultural country like South Africa (Ogbuanya (2012). Also with the onset of globalisation, South African workers were increasingly interacting with colleagues, suppliers and customers from other countries. Interpersonal skills were thus an important element of the construct of employability skills (Allais (2012). The research questionnaire tested the impact that interpersonal skills had on attaining permanent employment. Simtech put a lot of emphasis on teaching its apprentices how to work in teams and relate to others. This portion of the curriculum was aimed at cultivating good workplace skills for its young apprentices.

#### **2.5.3.3. Critical thinking skills**

Critical thinking skills were needed to function as an effective artisan (Wedekind (2013). Artisans are confronted daily with complex problems that need to be analyzed in a structured manner to determine root causes and effective solutions. Artisan apprentices must therefore be able to critically evaluate the situations that they see in a practical environment and relate it to the theoretical foundation knowledge that they have acquired in their studies (Ukachi (2015). Artisan apprentices also have to be able to split complex problems into smaller, more manageable sub problems. This logical thought process must be developed by artisan apprentices to ensure that they think through situations in the workplace environment in an effective manner (Hauschildt et al. (2013).

#### **2.5.3.4. Problem solving skills**

The modern innovation driven economies of the developed world required strong problem solving skills to thrive in (Alharbi (2014). South Africa was currently an efficiency driven middle income economy according to the latest Global Entrepreneurship Monitor (GEM) study. Strong problem solving abilities and innovation from its young workforce was required for South Africa to take the next step and become an innovation driven economy Aghion, Braun, and Fedderke (2006); Simkins et al. (2007).

#### **2.5.3.5. Entrepreneurial skills**

Entrepreneurial skills were amongst the most important attributes young apprentices needed to have (Dhliwayo (2008). Entrepreneurs were sorely needed in South Africa to reach the job creation targets needed to reduce youth unemployment in the country. Young artisan apprentices needed to also become job creators as opposed to just job seekers (Oseifuah (2010). Key entrepreneurial skills were identifying unmet wants and needs of customers and developing a viable solution to it. Artisan apprentices needed to look out for such opportunities during their internship period. What services or products do their employers require? What skills are their employers looking for? What activities are their employers looking to outsource?

These were opportunities that an artisan apprentice will be exposed to during their internship period. The artisan apprentice needed to identify such opportunities and be able to act upon it. This was an employability skill that an artisan apprentice can use throughout their careers to generate employment opportunities (Huq and Gilbert (2013).

## **2.6. Conclusion**

This literature review looked at the youth unemployment and scarce skills paradox that is affecting the South African and global labour markets. Much has been written about the situation. Various corrective actions have been proposed and some of these have already been implemented with varying degrees of success. In South Africa, there has been a big focus on reducing the entry market price of young workers through the Youth Wage Subsidy – an incentive launched by the government in 2014. However whilst stakeholders have lauded the increased intake of young workers, there has been little research done on the critical success factors of successful apprentices that obtain permanent employment on completion of their apprenticeship period. This is the gap that this research dissertation wants to explore further.

As a niche within broader youth unemployment, artisanal apprenticeships were highlighted for closer investigation. South Africa has a dire shortage of artisans which is constraining economic growth (Patel (2015). Conversely many young South Africans that could fill this gap currently lack the skills to do so. Artisanal apprenticeships are therefore a key focus area in fighting both youth unemployment and scarce skills Horwitz (2013) and (South African Qualifications Authority (2013). Critical success factors of successful apprentices were analysed to establish fresh insights for policy development and future refining of the apprenticeship system in South Africa. This will be the contribution to new knowledge of this research dissertation.

The literature review has established a conceptual model between various independent variables and their possible influence on the dependent variable of

permanent employment status. The next chapter of this dissertation states how this conceptual model was studied further using a suitable research methodology.

## **Chapter 3: Research methodology**

### **3.1. Introduction**

The literature review highlighted three important independent variables that could possibly explain the successful attainment of permanent employment by Simtech artisan apprentices. This possible relationship is depicted in a conceptual model presented in this chapter. An appropriate research methodology to measure the impact of these independent variables on the dependent variable had to be drafted. The chosen research methodology also had to be credible.

The chosen research methodology included a representative sample being selected that would give useful inferences that could possibly be applied to broader populations in subsequent studies. A suitable research instrument that could be administered within the short timeline of a month whilst reaching the geographically dispersed target population was designed to obtain relevant data. This data was organised, cleaned, statistically analysed and relevant conclusions drawn. The research methodology chosen sought to measure and analyse the research

variables in a systematic manner to draw logical conclusions for the research questions.

### 3.2. Conceptual Framework

The conceptual framework illustrated in figure 3.1 was developed from the literature review and was created to guide the empirical research. The results presented in chapter four of this dissertation were related to this theoretical conceptual model to generate relevant recommendations in chapter five of this dissertation. The conceptual framework consists of the independent and dependant variables of the study. The dependent variable, employment status of Simtech artisan apprentices was thought to depend on certain independent variables. Youth work ethic (Y), workplace/internship environment (W) and employability skills (E) were all identified through the literature review as independent variables within this framework. The main idea behind this conceptual framework was that youth work ethic, workplace/internship environment and employability skills were all thought to have significant impacts on the attainment of permanent employment. This belief needed to be tested for accuracy and significance.

#### INDEPENDENT VARIABLES

#### DEPENDENT VARIABLE

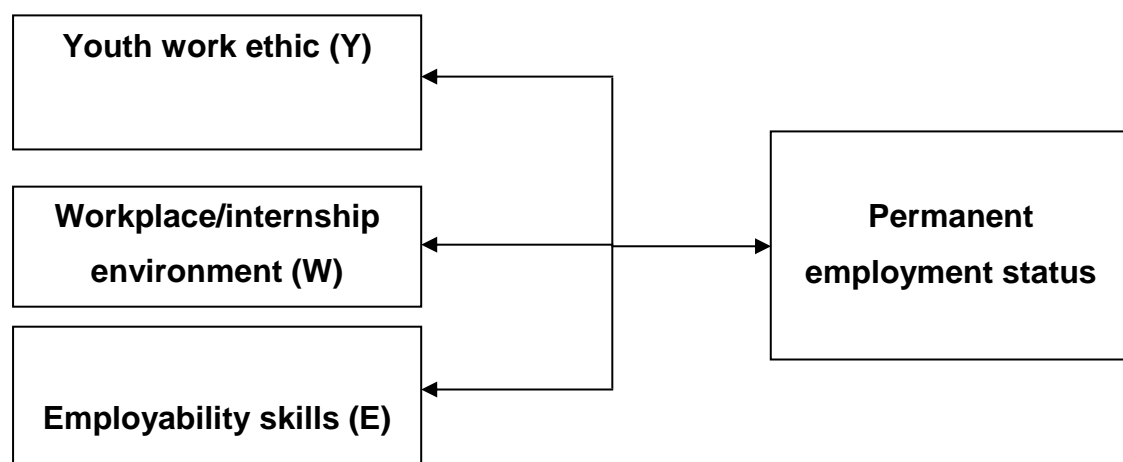


Figure 3. 1 : Conceptual framework



The above conceptual framework crystallized clearly the research questions / hypotheses to be examined in this dissertation project.

### **3.3. Research Approach and Design**

#### **3.3.1. Research approach chosen**

There are two main research approaches namely positivism and phenomenological (Creswell, 2014). Positivism deals with identifying and assessing the causes that affect outcomes. Phenomenological deals with relating the real experiences of participants with a phenomenon. A positivist, quantitative research design that could test the above conceptual framework was chosen. A positivism approach was clearly the best choice as it lent itself to testing the theory of the conceptual model developed from the literature review. This research design had to be efficient from a time and resource perspective. The research approach chosen had to also lend itself to identifying the factors that influenced an outcome, which was the main objective of this research dissertation.

This research study utilised a quantitative methods design. According to Creswell (2014), a quantitative method design was well suited to testing pre-determined outcomes and statistically analysing significant correlations. The quantitative method was utilised by this study so that attitude data could be gathered by instrument based questions (Sekaran and Bougie (2013). This method was preferred due to the short time period between ethical clearance approval by the university research committee and the dissertation submission deadline. Contradicting findings were put forward as future research topics in this subject area.

The advantages and disadvantages of a quantitative approach compared to a qualitative approach is summarised in the below table 3.1.

Table 3. 1 : Advantages and disadvantages of quantitative approach

<b><u>Advantages</u></b>	<b><u>Disadvantages</u></b>
1.) Test a possible theory	1.) Not suited to exploring concepts where not much is known

2.) Suited to identifying factors that influence an outcome	2.) Lacks the depth of insights obtained through interviews
3.) Questionnaire is sufficient to extract required data	

### 3.3.2. Research quality plan

Any dissertation relies on the quality of its research methods and findings to be credible (Creswell, 2014). Therefore, research quality measures must be a key part of the research design. The disadvantages of using a quantitative approach was overcome by including an open-ended question in the questionnaire. This helped to illicit a deeper response from survey participants. The potential risks to research quality identified by this study were selection bias effects, mortality effects and history effects ((Sekaran & Bougie, 2013).

Selection bias was possible if random sampling methods were not used (Sekaran and Bougie (2013). Selection bias in this study was possible due to choosing from the sampling frame in alphabetical order. This factor was overcome by selecting all graduates from the sampling frame list. This ensured that all graduates had the opportunity to participate in the research survey.

Mortality effects could occur if the duration of a survey is too lengthy. Participants typically lose interest and drop out of the survey before completion. This study overcame this challenge by limiting the duration to fifteen minutes to complete the survey. The Likert scale type questions also made answering the questions quite simple (Sekaran and Bougie (2013).

History effects were common when longitudinal studies are carried out (Creswell, 2014). Significant events can occur which distort the survey responses. The time period chosen to draw the sample from and the cross-sectional nature of this study overcame this challenge.

Respecting participant's confidentiality was an important ethical consideration that was noted and addressed in this study. All participants remain anonymous and their

survey responses are stored safely. No specific responses or comments that could be attributed to an individual were included in the study. The anonymity of internship host companies was also maintained.

#### **3.3.2.1. Study setting**

The total population of unemployed youths in South Africa was too large a target population to study given the resource and time constraints associated with the MBA dissertation. A more realistic study setting therefore needed to be chosen. Stratification sampling was applied to filter unemployed youth according to specific occupations. It was decided to focus on only artisan apprentices as the unit of analysis instead of all unemployed youth. The justification for this choice was that artisanal trades are scarce skills urgently required by the South African economy. There was thus much benefit to be derived by increasing artisan output in the country.

The Simtech trade apprenticeship school was chosen as a suitable study setting. The main reason for this selection was the familiarity of the researcher with their operations and accessibility of their students who could be reached to participate in the empirical research. This institution nurtures and trains, young people on technical and general workplace skills, over a certain period of time. These apprentices then serve time in industry working for numerous companies gaining workplace experience. The Simtech institution and its apprentices was thus an ideal choice for carrying out this exploratory study on understanding their actual experiences during their internship period.

Simtech had 120 apprentices over the past three years that completed their training programme and workplace internship. These 120 graduates were the target population for the study. These graduates were either currently employed or currently unemployed. The sampling method chosen below attempted to access equivalent numbers of both stratified groups.

#### **3.3.2.2. Sampling techniques**

The target population chosen was all the artisan apprentices that had completed their Simtech apprenticeship and industry internship in the past three years (both currently employed and unemployed). The criterion of the past three years was chosen to ensure that the study had a strong cross-sectional feel as opposed to longitudinal. A cross-sectional study takes one measurement of the same unit of analysis at one point in time (Creswell (2014)). A longitudinal study takes many measurements of the same unit of analysis over a period of time (Creswell (2014)).

A cross-sectional study in this instance was achieved by using the last three years wherein the South African economy's growth was pretty stagnant post the global recession (StatsSA (2014)). This helped smooth out external causal factors that could skew the study such as high economic growth periods for example the 2010 FIFA World Cup when job attainment was high and South Africa's unemployment rate stood at record low levels.

The aim of this research study was not to observe an individual's evolution over time to eventually attain permanent employment. Rather the aim of this research study was to ascertain the critical success factors of individuals at this point in time that have enabled them to attain permanent employment unlike their peers that were unemployed. A cross-sectional study was thus best suited to the aim of this research study (Creswell (2014)).

#### **3.3.2.2.1. Probability sampling**

According to Sekaran and Bougie (2013) probability sampling occurs when the elements in a population have a known, non-zero probability of being selected as sample subjects. Probability sampling is used when representativeness of the sample is important to enable broader generalization. Common types of probability sampling are simple random sampling, cluster sampling, stratified sampling and double sampling.

In simple random sampling, every element in the population has a known and equal chance of being selected as a sample subject. In cluster sampling, the target population is divided into clusters first before random samples of the cluster are

drawn. In stratified sampling, the target population is divided into mutually exclusive groups that are relevant and meaningful in the context of the study. In double sampling, there is a double sampling procedure (Sekaran and Bougie, 2013).

#### **3.3.2.2.2. Non-probability sampling**

According to Sekaran and Bougie (2013) nonprobability sampling occurs when the elements in a population do not have a known probability of being selected as sample subjects. Nonprobability sampling is used when time and cost factors are more important than broader generalization. Common types of nonprobability sampling are quota sampling, convenience sampling, purposive sampling and judgement sampling (Creswell (2014).

In quota sampling, groups in the population are represented in fixed quotas to ensure adequate representation. Unfortunately, these results are not generalizable to the target population. In convenience sampling, information is collected from accessible people quickly. This has the shortest time and lowest cost however the results are not generalizable to the broader population. In purposive sampling, information is obtained from specific target groups within the broader population. In judgement sampling, a limited number of people have the information that is sought after (Creswell, 2014).

#### **3.3.2.3. Sampling technique chosen**

The dependent variable, employment status, was a dichotomous variable. This meant that the dependent variable could take on only two possible values. These two values were either employed (coded as = 1) or unemployed (coded as = 0) in the SPSS analysis. It was therefore decided to use stratified sampling to segment all the Simtech artisan apprentices that have completed their training and industry workplace internship over the past 3 years. There were 120 apprentices that completed both elements in the past 3 years.

#### **3.3.2.4. Selection of sample size**

A 95% confidence interval and 5% level of significance was used to calculate the required sample size for the research study ("Sample size calculator," 2015). Using probability sampling as well to apply to the stratified sub-sets of employed and unemployed youths yielded the following; a sample size of 92 units was needed to significantly represent the 120 Simtech apprentice graduates that have graduated in the past three years. Of this total of 92 graduates, a 50-50 split between unemployed graduates and employed graduates was taken to ensure equitable representation of both possibilities of the dependent variable i.e. (employed = 1; unemployed = 0).

### **3.4. Data collection**

#### **3.4.1. Data collection instrument**

The data collection instrument chosen was an online questionnaire. This was the most efficient method of collecting sufficient responses from a representative sample size of the target population within the desired time frame Creswell (2014). The online questionnaire was designed to take only 15 minutes to complete to encourage a higher participation and completion rate.

#### **3.4.2. Data collection procedure**

Respondents without e-mail access were accommodated by the researcher administering the survey telephonically. The researcher then captured the data onto the eSurveyCreator system. The second reason that a questionnaire was chosen was that the Likert scale type questions fitted well into its format. It was anticipated that the data collection would take place over a three to four-week period. The administering of the questionnaire followed a three-stage process. First an initial e-mail advising participants of the survey went out. Secondly the actual link to the electronic survey followed three days later. Lastly a follow up e-mail was sent a week

after the link was sent out to thank those participants that had already responded and encourage those participants who had not yet replied to reply.

### 3.4.3. Measurement scale

A clear measurement scale had to be chosen to quantify the behavioural responses that were tapped by the scale items of the relevant constructs in the questionnaire (Creswell (2014)). This was critical to ensuring that the survey results could be properly analysed and useful conclusions drawn out of it. Attempting to codify behavioural responses into quantitative measurements is always a challenging task (Sekaran and Bougie (2013)). A Likert scale was chosen to code the responses into quantifiable integer numbers ranging from 1 to 4. A four point Likert scale was chosen deliberately instead of the standard five point Likert scale. The reason for this was to eliminate neutral responses by forcing respondents to select either negative or positive responses. A Likert scale is an ordinal scale Sekaran and Bougie (2013). Ordinal scales allow variables to be rank ordered but the distances across categories are not equidistant as is the case with interval scales Creswell (2014). An ordinal Likert scale was the most suitable option to quantify the questionnaire responses.

The numerical value of the four possible answers to each question is shown in table 3.1 below. Responses that were either strongly disagree or disagree denoted that the artisan apprentice did not enjoy a happy or positive experience of the respective scale item. Conversely a response that was either agreed or strongly agreed denoted that the artisan apprentice enjoyed a happy or positive experience of the respective scale item.

Table 3.2: Codification of questionnaire response options

<u>Coded value</u>	<u>Questionnaire Response</u>
1	Strongly disagree (SD)
2	Disagree (D)
3	Agree (A)
4	Strongly agree (SA)

#### **3.4.4. Pilot testing**

The online questionnaire was initially e-mailed to five people to test the functionality of the questionnaire. Key aspects checked were the time needed to complete the survey, the clarity of the questions and the Cronbach's alpha that verified the internal consistency of the items being tested. The Cronbach's alpha was found to be equal to 0.91 which was above 0.7, a figure widely accepted as a benchmark in research studies (Sekaran and Bougie (2013)). The questionnaire was thus fine from an internal consistency perspective. This pilot test helped to refine the online questionnaire into the final version submitted for ethical clearance.

### **3.5. Data Analysis Methods**

#### **3.5.1. Data verification and cleaning**

The raw data was first exported from eSurveyCreator to Microsoft Excel in matrix format. It was then cleaned up by verifying and correcting any missing values and outliers. The structure of the questionnaire utilised in this research study minimised missing values and outliers. The Likert scale used in the questionnaire limited responses to just four possibilities and hence there was limited scope for outliers. The eSurveycreator online survey prevented surveys from being completed with missing values or duplicate values. Respondents were thus forced to complete all questions before submitting the survey. This feature thus built data quality integrity into the research instrument.

#### **3.5.2. Factor analysis**



The factor analysis method was used to determine the scale items that had the strongest impact on the composite of the independent variable. This method reduced dimensions that had a weak influence and led to a stronger predictive model being formulated (Cudeck (2000). The remaining scale items per independent variable were then combined into three new composite constructs that reflected stronger models of the three initial independent variables of work ethic, workplace environment and employability skills.

### **3.5.3. Logistic Regression Analysis**

The dependent variable of employment status was a dichotomous variable. This meant that the dependent variable could have only two possible outcomes i.e. the artisan apprentice was either unemployed (0) or employed (1). Dichotomous variables were best analysed by using a logistic regression analysis method Chatterjee and Hadi (2015) and (Hosmer Jr, Lemeshow, and Sturdivant (2013).

The composite score for each of the three independent variables was used for the logistic regression analysis. This approach ensured that only the three independent variables that emerged from the literature review were tested for statistical impact on the dependent variable and not each scale item that made up the independent variable itself (Harrell (2015). A logistic regression analysis was carried out on these composite scores of the three composite independent variables post factor analysis and the dependent variable. This logistic regression analysis established whether each of the three composite independent variables had a significant impact on the dependent variable. The results of this regression analysis could then be discussed and recommendations put forward.

### **3.6. Reliability**

According to Creswell (2014), reliability indicates to what extent the measures are without bias. In order to achieve good reliability, there must be consistent measurement over time (stability) and internal consistency across the various items in the research instrument.

Stability indicates whether the measure can remain the same over time despite uncontrollable testing conditions or the state of respondents. There are two common tests namely test-retest reliability and parallel-form reliability. The employment status of some respondents could have changed by the time the same survey is administered again and this could affect the responses given by the respondents. It was thus important to note that the cross-sectional nature of this study did not lend itself well to test-retest reliability.

Cronbach's alpha was used to test the reliability of the research instrument by testing the internal consistency across the various items in the research instrument. Based on the Cronbach alpha value = 0.91 that was obtained from the pilot study analysis, the questionnaire was deemed to have a reliable internal consistency between scale items. A Cronbach alpha value > 0.7 is widely accepted as implying reliable internal consistency (Heo, Kim, and Faith (2015).

### **3.7. Validity**

Validity measures how well the designed research instrument tests the actual research objectives that it is intended to measure (Creswell, 2014). In other words, validity ensures that the research instrument measure the right concepts. It would be counterproductive to the study if the research instrument is measuring irrelevant concepts. There are several different types of validity tests that can be applied. The three most common types are content validity, criterion-related validity and construct validity.

Content validity ensures that the measure includes an adequate and representative set of items that explore the concept (Creswell, 2014). The more that the scale items represent the domain of the concept, the greater will be the content validity of the research instrument. This study will draw on well-established scale items that represent significantly the domain of the concepts being tested. The literature review has discovered peer-reviewed prior studies that state what scale items usually represent such concepts under study. It was not practical to incorporate all possible

scale items into the research questionnaire as the questionnaire would become too lengthy and this would hinder the response rate to the questionnaire. It was deemed sufficient to include the ten main items into each of the three constructs being tested. These ten items gave a fairly representative indication of the construct in question.

Criterion-related validity is established when the measure differentiates an individual on a criterion that it is expected to predict (Creswell, 2014). Criterion-related validity can be established by concurrent validity or predictive validity. Concurrent validity is established when the scale discriminates individuals known to be different.

Construct validity illustrates how closely the results obtained from the study measure the theoretical hypotheses around which the research instrument is designed (Creswell, 2014). This is assessed through convergent and discriminant validity. Convergent validity is proven when the scores obtained from two different research instruments measuring the same concept are highly correlated (Creswell, 2014). Discriminant validity is proven when based on theory, two variables are predicted to be uncorrelated and the scores obtained then illustrate whether this is true (Creswell, 2014). In this study, convergent validity was used by comparing the research results obtained from the field study to the research results of prior studies with different instruments uncovered during the literature review. The goal of the study was to examine the strength of the relationships between the independent variables in predicting the dependent variable.

### **3.8. Ethical considerations**

A gatekeeper's letter was obtained from the CEO of Simtech apprentice training institute in Queensburgh, Durban prior to questionnaires being sent out. None of the respondents targeted were below the age of 18. Each respondent had the option of withdrawing from participation in the questionnaire at any time they wished without any penalties. This was clearly explained in the letter of informed consent that accompanied the online questionnaire.

The respondents will remain anonymous and the online questionnaire data has been stored in a safe and confidential place for a five-year period in line with the University of Kwa-Zulu Natal's research policy.

The actual research instrument – the online survey – underwent strict ethical clearance scrutiny first by the University of Kwa-Zulu Natal's Research Ethical Clearance committee. The field study only proceeded once such ethical clearance (Protocol reference number: HSS/0249/016M) was granted.

### **3.9. Conclusion**

This chapter has outlined the research design that was developed and applied to examine the three constructs that possibly explain the successful attainment of permanent employment of Simtech artisan apprentices over the past three years. Also this chapter introduced the conceptual model that relates the three constructs to the dependent variable.

The ability of this conceptual model to explain the dissertation's research objectives was tested by the quantitative approach chosen. A suitably representative sample was chosen for the primary research. A research instrument that could obtain the desired data within the short timeframe was developed. The data collection process was outlined as well as the methods by which the data was statistically tested, analysed and relevant logical outcomes drawn. The next chapter will present the results obtained.

## **Chapter 4: Results**

### **4.1. Introduction**

The presentation and analysis of the data collected by the chosen research instrument was an important part of the research study. It fulfilled the objective of converting survey data into meaningful information that was of use to stakeholders that could derive benefit from the study. This information was the crucial link within the study that directly related the research objectives of the study outlined in chapter one to the recommendations for key stakeholders tabled in chapter five. The presentation and analysis of the survey results can also add new knowledge to the subject area provided that the research methodology deployed to obtain such results was credible. The creation of new knowledge was one of the goals of a research study.

This chapter provides a presentation and analysis of results obtained from the survey conducted. Firstly, the participation statistics of the online survey was presented. Next, the biographical information of the participants was presented. The impact of the youth work ethic, internship workplace environment and employability skills constructs on the attainment of permanent employment was then presented and analysed. Lastly, the outcome of the regression analysis was discussed.

### **4.2. Survey Participation Statistics**

The online questionnaire was administered by using the eSurveycreator website, which was a specialist survey creation and administration tool utilised by many academic researchers. The online survey commenced on 5 April 2016 once the ethical clearance approval was granted in full. The online survey continued for 24 days until it was closed on 29 April 2016. Two reminder emails went out to participants within the two-week period to encourage higher participation rates. The survey's participation statistics are illustrated in the below table.

Table 4. 1 : Participation Statistics

	<b>Count</b>
Number of individuals invited to Participate in the Survey	104
Number of Participants that viewed the questionnaire	59
Number of Participants that started the questionnaire	54
Number of Participants that completed that questionnaire	51
Participation Rate	51.92%
Completion Rate	94.44%
Drop outs (after starting)	2
Validation Errors	1
Average time to complete questionnaire	12 minutes

### **4.3. Presentation of Results**

The online questionnaire was structured into three sections and therefore the results of the online questionnaire was presented in that order. Firstly the biographical information of the participants was presented. This information was useful for categorising participants according to their status of employed or unemployed, which is in essence the dependent variable of the research study. Next the three independent constructs of youth work ethic, internship/workplace environment and employability skills were presented and their respective impacts on the dependent variable of permanent employment status. Lastly the open-ended question feedback was presented to indicate new avenues for future researchers to explore.

### 4.3.1. Biographical Information

The first section of the questionnaire was constructed with three biographical questions of the respondents. The purpose of these three questions was to categorise the respondents according to their age (since this study was focused on youth it was critical that the correct age group was obtained), the number of years that the artisan apprentice had worked as an intern and lastly the key dependent variable of the study i.e. was the respondent currently employed or unemployed. The dependent variable was a dichotomous variable. In presenting the biographical information, the distribution of the biographical information was illustrated in graphical format and a summary was provided.

Figure 4.1 illustrates the age distribution of the participants. The majority of respondents (42.31%) were aged from 28 to 30 years old (figure 4.1.). The majority of respondents (42.31%) spent 1-2 years as an apprentice (figure 4.2). The equal split between unemployed and employed artisan apprentices is represented in (figure 4.3). This equal split was a fundamental aspect of the sampling technique utilised in this research study. The main reason for this is that employment status is the dependant variable of the study on which independent variables are tested for significant impact on them.

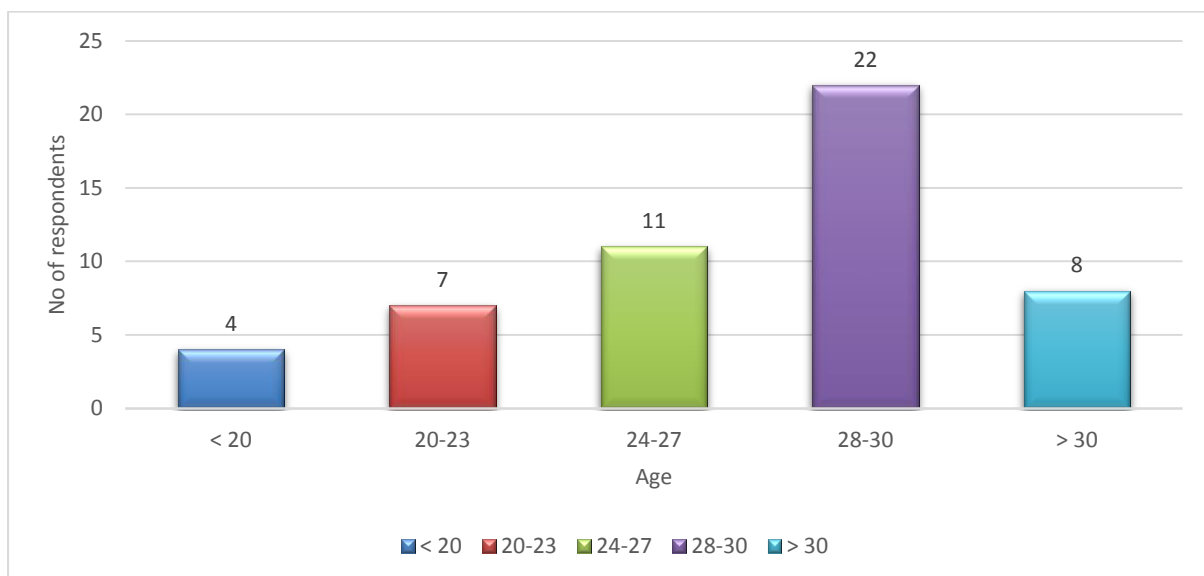


Figure 4.1: Age profile of respondents

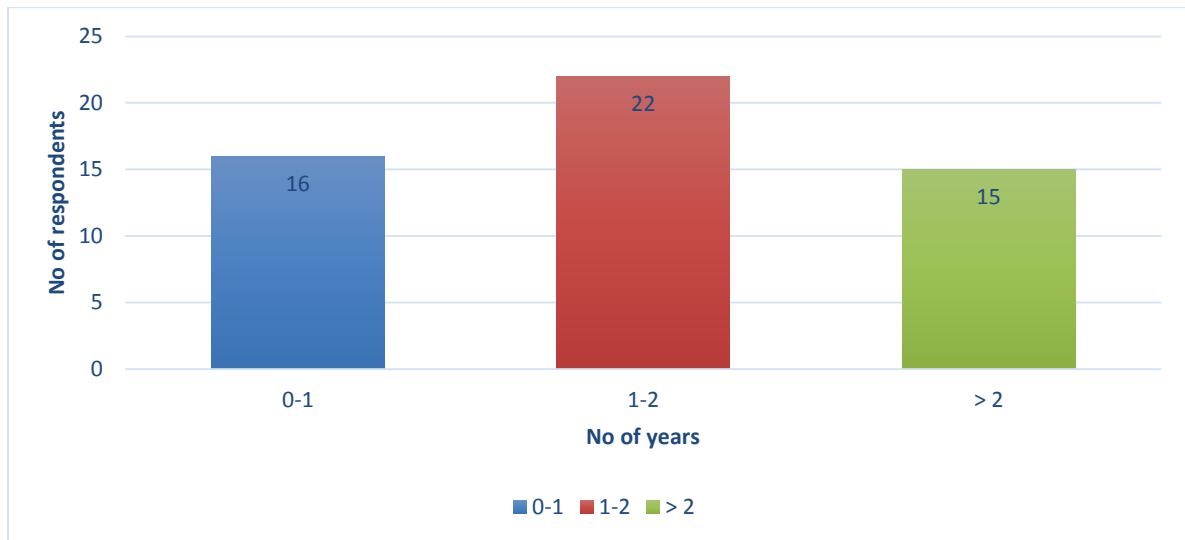


Figure 4.2: Period respondents spent as an intern

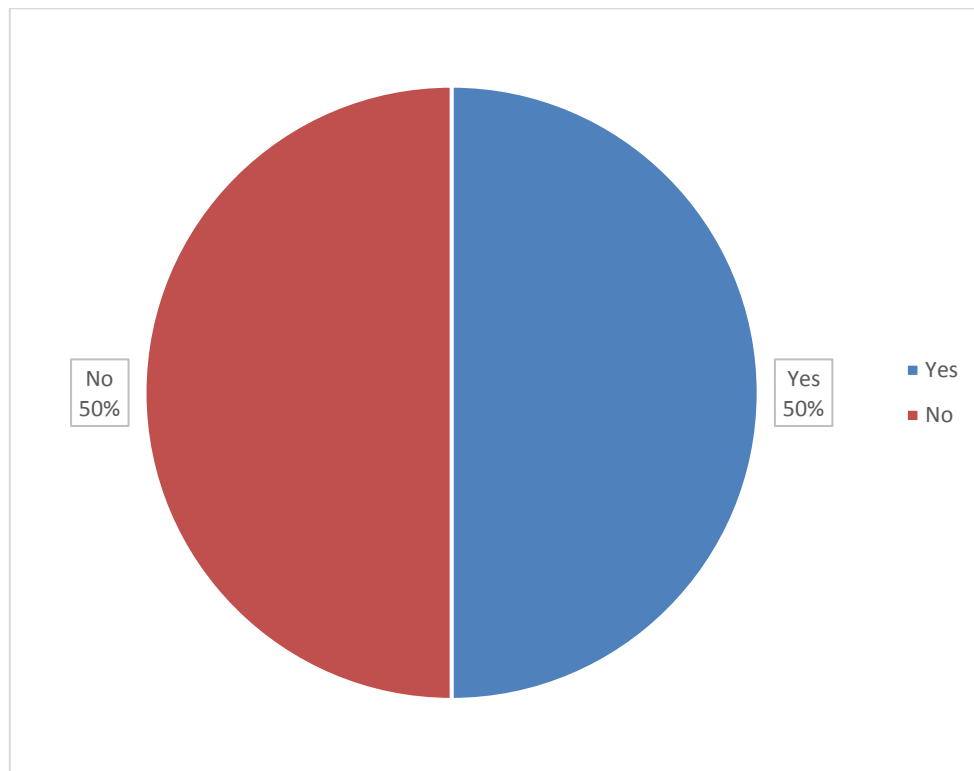


Figure 4.3 : Split between employed and unemployed artisan apprentices

#### 4.3.2. Likert scale type questions

The next section of the online questionnaire contained the behavioural responses to questions probing the three independent variables of the study. The figure 4.4 shows the frequency distribution of the responses.



#### 4.3.2.1. Youth work ethic

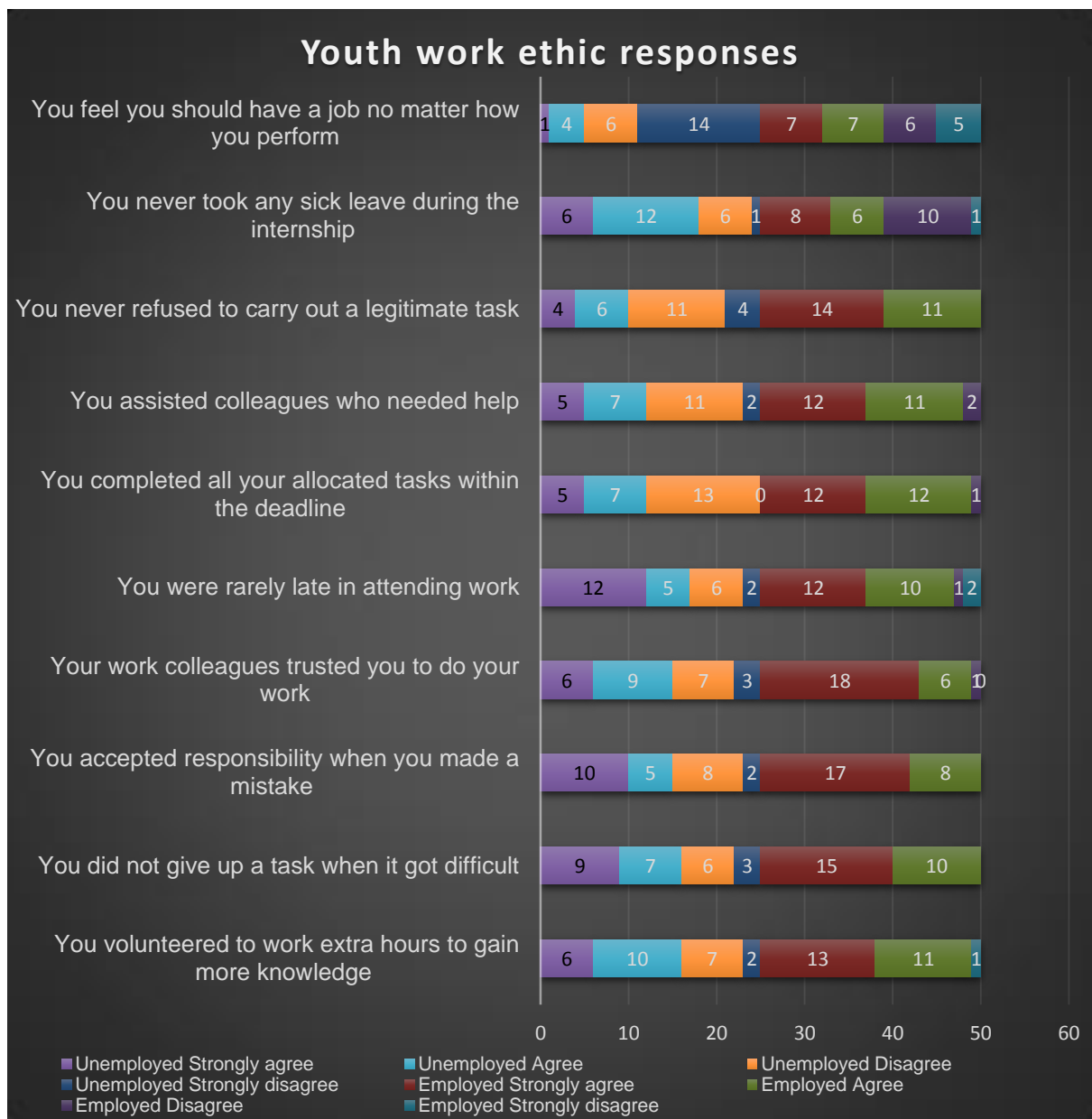


Figure 4.4 : Youth work ethic frequency distribution

This section of the questionnaire contained ten questions that comprised the construct of youth work ethic. The results of the answers to these questions by the respondents are presented in Figure 4.3 for both employed and unemployed artisan apprentices. It could be observed that for the employed respondents grouping, the most frequent mode of answer on the Likert scale was strongly agree (Answer code = 4). In contrast for the unemployed respondents grouping, the most frequent mode of answer on the Likert scale was disagree (Answer code = 2).

There was a noticeable difference in the answering choices of the employed and unemployed groupings. 56% of the unemployed grouping felt that they should have a job no matter how they performed pointing towards an entitlement culture. 72% of the employed grouping was trusted by colleagues to do their work whilst 68% of the employed grouping accepted responsibility for their mistakes. These two scale items unsurprisingly survived the factor analysis and were omitted. This showed that it did have a strong influence on overall work ethic.

#### 4.3.2.2. Internship/workplace environment



Figure 4.5 : Internship/workplace environment frequency distribution

This section of the questionnaire contained ten questions that comprised the construct of internship/workplace environment. The results of the answers to these questions by the respondents are presented in Figure 4.5 for both employed and

unemployed artisan apprentices. It could be observed that for the employed respondents grouping, the most frequent mode of answer on the Likert scale was agree (Answer code = 3). In contrast for the unemployed respondents grouping, the most frequent modes of answer on the Likert scale was strongly disagree and disagree (Answer codes = 1 and 2). There was a noticeable difference in the answering choices of the employed and unemployed groupings.

The unemployed grouping had 68% that strongly disagreed that their internship host company offered any apprentice a permanent job whilst 60% further strongly disagreed that they were told they would get a permanent job at the end of the apprenticeship if they performed to a high standard.

In stark contrast, the employed grouping largely agreed on every one of the ten items pointing towards a largely positive internship/workplace environment. This high correlation points towards internship/workplace environment being a strong predictor of permanent employment status.

### 4.3.2.3. Employability



Figure 4.6 Employability skills frequency distribution

This section of the questionnaire contained eight questions that comprised the construct of employability skills. The results of the answers to these questions by the respondents are presented in Figure 4.6 for both unemployed and employed artisan apprentices. It could be observed that for the employed respondents grouping, the most frequent mode of answer on the Likert scale was agree (Answer code = 3). In contrast for the unemployed respondents grouping, the most frequent modes of answer on the Likert scale was strongly disagree and disagree (Answer codes = 1 and 2). There was a noticeable difference in the answering choices of the employed and unemployed groupings.

Notably the majority of both the employed and unemployed groupings stated that their internship improved their interpersonal skills. This points towards some universal benefit arising to artisan apprentices from these work placements. 64% of the unemployed grouping stated that they strongly disagreed that their internships equipped them with entrepreneurial skills.

#### **4.3.3. Open ended question on improving current artisan apprenticeship system**

The questionnaire ended with one open ended question to allow respondents to give improvement suggestions on how to make artisan apprenticeships more effective. This allowed the respondent to give broader feedback that could not be achieved within the Likert scale type questions. The results obtained help to point out future research areas and are detailed in chapter six.

Some of the common themes that emerged out of the open-ended question was the importance of parenting, the need for host companies to improve mentoring and the need for greater goal clarity of what the artisan apprentices needed to achieve.

#### **4.3.4. Factor Analysis Results**

Factor analysis is a statistical technique used to estimate factors and/or reduce the dimensionality of a large number of variables to a fewer number of factors Cudeck (2000) and (Gorsuch (1988)). The results of the factor analysis carried out on SPSS are shown below.

Table 4. 2: Descriptive Statistics

	Mean	Std. Deviation	Analysis N
Work_ethic_Q1	2.8431	1.02708	51
Work_ethic_Q2	2.8824	1.10720	51
Work_ethic_Q3	2.9020	1.13587	51
Work_ethic_Q4	3.0000	1.05830	51
Work_ethic_Q5	2.6275	1.18255	51
Work_ethic_Q6	2.9020	.90011	51
Work_ethic_Q7	2.9216	.93473	51
Work_ethic_Q8	3.0980	.90011	51
Work_ethic_Q9	2.4902	.96690	51
Work_ethic_Q10	3.0000	1.05830	51
Environ_Q1	2.6863	.88295	51
Environ_Q2	2.5882	.98339	51
Environ_Q3	2.6275	.95835	51
Environ_Q4	2.6078	.89618	51
Environ_Q5	2.5490	.94475	51
Environ_Q6	2.6667	.97297	51
Environ_Q7	2.3922	1.00157	51
Environ_Q8	2.2745	1.02134	51
Environ_Q9	2.1765	1.05273	51
Environ_Q10	2.3333	1.17757	51
Employability_Q1	2.9608	.72002	51
Employability_Q2	2.9412	.78516	51
Employability_Q3	2.6863	.81216	51
Employability_Q4	2.6863	.88295	51
Employability_Q5	2.5686	.92206	51
Employability_Q6	2.5098	.98737	51
Employability_Q7	2.1569	1.06532	51
Employability_Q8	2.0588	1.02785	51
Employment status	.4902	.50488	51

The mean and standard deviation of the responses to each question is reflected in the above table. The Likert type scale used contained the following ring fenced answers (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree). The mean was thus 2.5 for all possible answers. Questions with a mean below 2.5 implied that on average a participant had a negative experience on that particular scale item whilst a mean above 2.5 implied that on average a participant had a positive experience.

Table 4. 3: KMO and Bartlett's Test<sup>a</sup>

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.815
Bartlett's Test of Sphericity	Approx. Chi-Square	1707.430
	df	406
	Sig.	.000

a. Based on correlations

The Kaiser-Meyer-Olkin measure of sampling adequacy in Table 4.3 was greater than 0.5 which implied that the sampling adequacy was extremely good.

Table 4. 4 : Communalities

	Raw		Rescaled	
	Initial	Extraction	Initial	Extraction
Work_ethic_Q1	1.055	.741	1.000	.703
Work_ethic_Q2	1.226	1.078	1.000	.879
Work_ethic_Q3	1.290	1.146	1.000	.888
Work_ethic_Q4	1.120	.960	1.000	.857
Work_ethic_Q5	1.398	.874	1.000	.625
Work_ethic_Q6	.810	.629	1.000	.776
Work_ethic_Q7	.874	.631	1.000	.722
Work_ethic_Q8	.810	.604	1.000	.746
Work_ethic_Q9	.935	.462	1.000	.494
Work_ethic_Q10	1.120	.948	1.000	.846
Environ_Q1	.780	.559	1.000	.717
Environ_Q2	.967	.659	1.000	.681
Environ_Q3	.918	.733	1.000	.798
Environ_Q4	.803	.498	1.000	.620
Environ_Q5	.893	.683	1.000	.765
Environ_Q6	.947	.702	1.000	.742
Environ_Q7	1.003	.823	1.000	.821
Environ_Q8	1.043	.842	1.000	.807
Environ_Q9	1.108	.941	1.000	.849
Environ_Q10	1.387	1.124	1.000	.810
Employability_Q1	.518	.381	1.000	.735
Employability_Q2	.616	.392	1.000	.635
Employability_Q3	.660	.495	1.000	.750
Employability_Q4	.780	.581	1.000	.746
Employability_Q5	.850	.709	1.000	.834
Employability_Q6	.975	.869	1.000	.891
Employability_Q7	1.135	.984	1.000	.867
Employability_Q8	1.056	.830	1.000	.786
Employment status	.255	.178	1.000	.699

All scale items in Table 4.4 that had an Eigenvalue greater than 1 were retained in the model Ahn and Horenstein (2013). An Eigenvalue equal to 1 was considered an average score. The above figure illustrates the scale items that were subsequently included and excluded from the three composites that were then created namely Composite\_work ethic; Composite\_workplace environment and Composite\_employability skills. The remaining scale items that made up the three composite independent variables were then added to reach a sum total score of the various scale items and transformed into binary using the following set rule. All cases that had a composite total score less than the mean score were transformed to a 0. All cases that had a composite total score equal to or greater than the mean score were transformed to a 1. This transformation function prepared the three composite independent variables for the logistic regression analysis against the dichotomous dependent variable.

#### 4.3.5. Logistic Regression Results

Logistic regression analysis is well suited to examining the effect of multiple independent variables on a dichotomous dependent variable (Hosmer Jr et al. (2013). The logistic regression analysis was run on the composite scores of the three refined composite independent variables (youth work ethic, internship/workplace environment and employability skills) and the dependent variable (permanent employment status) revealed the following results.

Table 4. 5 : Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	43.960 <sup>a</sup>	.408	.544
2	36.370 <sup>b</sup>	.490	.653

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

b. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.



The Nagelkerke R squared value of 0.653 in Table 4.5 implied that 65.3% of the variability in the dependent variable could be predicted by the model. This implied that the model, formed with the three composite variables refined by the factor analysis, was a strong model.

Table 4. 6 : Classification Table<sup>a</sup>

	Observed	Predicted		
		Employment status		Percentage Correct
		Unemployed	Employed	
Step 1	Employment status Unemployed	21	5	80.8
	Employment status Employed	3	22	88.0
	Overall Percentage			84.3
Step 2	Employment status Unemployed	22	4	84.6
	Employment status Employed	3	22	88.0
	Overall Percentage			86.3

a. The cut value is .500

The classification table in Table 4.6 showed that the model correctly predicted the employment status of 86.3% of all cases captured by the research survey. This further reinforced the strength of the model.

Table 4. 7 : Variables in the regression equation

	B	Wald	Sig.	Exp(B)	95% C.I. for EXP(B)	
					Lower	Upper
Step 1 <sup>a</sup> Composite_environment	3.428	18.754	.000	30.800	6.529	145.292
Constant	-1.946	9.940	.002	.143		
Step 2 <sup>b</sup> Composite_workethic	20.786	.000	.998	1064831631.894	.000	.
Composite_environment	2.909	11.609	.001	18.333	3.440	97.702
Constant	-21.990	.000	.998	.000		

The variables included in the equation in Table 4.7 were the composite workplace environment and the composite work ethic. The composite workplace environment was statistically significant at a value of 0.001 ( $p < 0.05$ ). Although composite work ethic was not statistically significant at a value of 0.998 ( $p > 0.05$ ), it still made it into the final model indicating that it has some impact on the prediction model. An artisan apprentice that was happy with his or her workplace environment was 18.33 times more likely to be employed than an artisan that was not happy with his or her workplace environment.

#### **4.4. Conclusion**

This chapter first detailed the participation statistics on the survey conducted. An overview of biographical information was then presented which helped to categorise the respondents of the survey. The results of the survey relating to the critical success factors that impacted the attainment of permanent employment were presented and summarised. A factor analysis was then done on the individual scale items of the three independent variables to eliminate weak dimensions that contributed little to the model. This factor analysis resulted in three new composite models of the three independent variables being formed. The composite scores of these three composite models were obtained and transformed into binary values based on a set rule. These binary values underwent a logistic regression analysis with the dichotomous dependent variable. Based on the results of this logistic regression analysis, it was found that there was statistical significance between the composite independent variable of internship/workplace environment and the dependent variable of attainment of permanent employment. The composite independent variable of youth work ethic also had an impact on the dependent variable as it ended up in the final equation. However, this impact was not statistically significant. The next chapter will discuss how these results from the field study relate to the literature and objectives of the study.

## **Chapter 5: Discussion**

### **5.1. Introduction**

The results presented and analysed in the previous chapter have shown that certain significant relationships exist between the independent variables tested and the dependent variable. This chapter seeks to draw logical conclusions from these results and translate these into recommendations that can be practically applied by various stakeholders. This outcome is achieved by relating the results of chapter four to the literature review conducted in chapter two and the research objectives stated in chapter one. This chapter also contributes new knowledge to the subject area and enables stakeholders to improve their policy making to improve the current artisan apprenticeship system.

The chapter commences by providing a recap of what the research objectives of the study was. Next, the bulk of the chapter focuses on an in-depth discussion on results of the survey undertaken and the analysis of the data. The chapter further relates the findings of the survey to the relevant literature and demonstrate how the results and literature links back to the objectives of the study. The chapter ends by summarising the findings.

### **5.2. Research Objectives Overview**

The three research objectives that were studied were: -

a.) To investigate whether the workplace/internship environment of Simtech's young artisan apprentices significantly impacted their attainment of permanent employment post the apprenticeship period. Workplace/internship environment had a statistically significant impact on permanent employment status.

b.) To identify whether the work ethic of Simtech's young artisan apprentices significantly impacted their attainment of permanent employment post the apprenticeship period. Work ethic had some impact on permanent employment status but this was not statistically significant.

c.) To determine whether the employability skills of Simtech's young artisan apprentices significantly impacted their attainment of permanent employment post the apprenticeship period. Employability had no impact on permanent employment status.

### **5.3. Findings**

The findings revealed that there was a strong correlation between the scale items that had Eigenvalues greater than one and remained in the composite variable and the frequency distribution of the employed and unemployed groupings responses.

The employability construct could be improved in future studies. Only two out of the eight scale items remained in the composite\_employability variable. This could explain why the composite\_employability variable failed to make it into the final regression equation. Interestingly both unemployed and employed groupings strongly endorsed that their apprenticeships improved their interpersonal skills. This could imply a low base of communication skills. Most survey participants were not English first language speakers. Their initial workplace environment might well have been their first experience of communicating in English daily. This links back to the weaknesses in the South African education system highlighted early in the dissertation (Burger and Woolard, 2005).

It can be concluded from the R squared Nagelkerke value that there is a good degree of confidence that can be attached to the prediction model. The results obtained show that the model fits perfectly 96% of the time. This indicates that it is highly accurate at predicting the permanent employment status of an artisan apprentice. Furthermore 65% of the variability can be explained by the model.

The biographical information showed that most respondents were in the 28-30 year bracket implying that a level of maturity was needed to complete an apprenticeship

properly and obtain permanent employment. The majority of respondents had an internship period less than two years which showed that companies were possibly just employing them to derive the benefit of the Youth Wage subsidy tax benefit. This shorter duration could impact the skills transfer and depth of knowledge acquired by apprentices to become qualified, competent artisans.

#### **5.4. Critical success factors**

The main critical success factor was the importance of a positive and enabling internship/workplace environment in determining the permanent employment status of artisan apprentices. The results showed that artisan apprentices that enjoyed a positive workplace environment were a staggering 18.3 times more likely to obtain permanent employment compared to their unemployed peers. The level of significance was also high ( $p = 0.001$ ). This finding proves the second research objective emphatically.

The factors that comprise internship/workplace environment were under the direct control of internship host companies and these companies can utilise this insight to improve their training programmes offered to artisan apprentices. The internship/workplace environment factors examined were mentorship, training & development opportunities and talent pipeline management. The findings are discussed in more detail below.

It was shown that the quality of mentorship was extremely important to ensuring the success of the internship period and nurturing young talent within an organisation. Some past studies that looked at the quality of mentorship included Mulligan-Ferry and Nugent (2016), which stated that the initial chance taken on a young individual by an astute mentor who saw the potential of the individual often unearthed gems that went on to be highly successful employees that contributed much to the success of those organisations. It is therefore important that internship host companies select mentors wisely and equip them to adequately perform their functions. Unfortunately far too often this selection of mentors is not done correctly (Patil, 2015). Either the mentor was overloaded with work and had insufficient time to fulfil his or her duties;

or the mentor was disinterested in the growth of the youth worker and saw them as a threat to his position in the company. The results obtained correlate to prior research.

Mentors should bring valuable experience to the table. The survey results presented in figures 4.5 showed overwhelmingly that most unemployed respondents (>68%) did not get sufficient value from their mentors during their internship period. This was in stark contrast to the employed grouping's mentor experiences.

Internship host companies must urgently address mentoring to improve the quality of their artisan apprenticeship programmes. Mentors should have clear key performance indicators linked to their role of nurturing talent and be held fully accountable for the quality of artisans produced within the apprenticeship period.

The findings also revealed the vital importance that relevant training and development opportunities afforded to young artisan apprentices during the internship period had. These training opportunities ensured that young apprentices were continuously learning valuable skills and improving as future employees. In Downs (2015), the investment in high potential employees yielded significant results for companies in the long term. This view was supported by Boyle (2015), where significant training investment had started to yield the desired outcomes with more engineering interns becoming competent to meet the needs of industry in Scotland.

South Africa invests a large amount of money in training and development each year. This is largely collected via the Skills Levies Act and administered by SETA's. The success of these organisations though has been questionable. More needs to be done to extract more value out of the training sessions relative to the amount spent on them (du Toit and Roodt, 2008). (Ben-Hur et al., 2015) postulates whether the training budgets were being spent on the right things. Was the training relevant and effective to the skills that were trying to be developed? Were learning objectives aligned to corporate goals? It is this alignment that was critical to achieving the desired outcomes. The survey results showed that a significant proportion of the training done was not beneficial to the young artisan apprentice. These points towards a serious waste of resources and demands that artisan training programmes become more universally aligned to the needs of South Africa's economy.

It was concluded that it was highly important that companies approached the internship process with a sincere attitude towards using the process to drive their talent pipeline management (Clark et al. (2015)). It is only with this mind-set that permanent jobs will be created for competent, deserving artisan apprentices. Far too often companies use tax incentives such as the Youth Wage subsidy to take on interns but have no sincere intention of employing any of them. This results in the high number of youth workers that were passed on from one internship program to another. This benefits both the young worker and the country very little and perpetuates the cycle of youth unemployment as more matriculants enter the job market each year. The survey results yield a worrying response that very few companies currently use the apprenticeship program to groom their scarce skills and to ultimately employ the successful apprentices.

Progressive companies view the internship process as a way of securing the scarce skills that they require to drive their business ambitions Edmond et al. (2007). In Drew (2015), there was a concerted effort made to capture the young talent and brightest minds in the labour market. This was further enforced by Rabbi et al. (2015) that talent management was a significant source of competitive advantage. Alkhalaf et al. (2015) reiterated that view that company strategy was built around their talent pipeline management. The survey results contradict this theoretical view and prompts that further investigation into artisan development to meet scarce skills demand be conducted.

In a South African context, there is a dire need for engineers, artisans and technicians in the labour market to drive the country's growth ambitions. This is clearly evident from the scarce skills list published by the Department of Labour. This makes a strong case for a concerted drive by companies to have a well-structured talent pipeline management plan.

The second critical success factor discovered was that the composite\_work ethic variable had some impact on the dependent variable. Youth work ethic was not significantly related to permanent employment status of the artisan apprentices. However it did appear in the final regression equation.

The factors that comprise youth work ethic can be directly influenced by the youth themselves to improve their own chances of success by displaying attributes of desirable employees to their internship host company. The youth work ethic factors which were identified in the literature review and investigated in the research survey were reliability, initiative, determination, accountability and character.

It was shown that reliability was one of the most desirable traits that an employee could have Vicki Culpin et al. (2015). It is therefore expected that highly reliable young artisan apprentices stand a better chance of obtaining permanent employment. It was further stated by Rauscher et al. (2013) that employers, customers, suppliers and work colleagues all valued reliable people highly. Some of the hallmarks of reliable people tested in the study were punctuality of arrival at work; and ability to meet deadlines of the young artisan apprentices.

The results in Figure 4.4 show clearly that reliability has a significant impact. More than 50% of unemployed artisan apprentices did not complete allocated tasks within deadlines whilst 96% of employed artisan apprentices completed their allocated tasks within deadlines.

Clearly going forward, all artisan apprentices need to ensure that they complete all their allocated tasks within deadlines. Employers are much more likely to permanently employ artisan apprentices that display such attributes. Punctuality to work had less of an impact on attaining permanent employment. The majority of both unemployed and employed artisan apprentices attended work on time.

It was concluded that any career has challenges that arise and that it is important that young apprentices have the determination and resilience to ride out these difficult experiences during their career Lyons et al. (2015). An ability to constantly evolve and stay relevant must also be part of an individual's repertoire H. Stuart et al. (2014).

The survey results back up this theoretical perspective by clearly showing that those apprentices that did not quit tasks that became difficult ended up with permanent employment more frequently. It is indeed noteworthy that in figure 4.3, 100% of all employed respondents did not quit difficult tasks.



Young artisan apprentices must not give up on difficult tasks but persevere. They should request assistance early from colleagues and supervisors when experiencing difficulties. Ultimately, they need to want to make a success of their apprenticeships. If this inner determination is lacking, it will clearly adversely affect their employment prospects.

It was shown that initiative was another important attribute in contemporary workplaces (Roberts (2013). Young apprentices have to be able to motivate themselves to tackle more tasks and drive their own personal growth (Deal et al. (2013). With most employers having lean structures, mentors do not have much time to spend with each individual artisan apprentice. Young apprentices clearly have to create and grab opportunities to learn more and take on additional tasks. Those apprentices that took a lot of initiative by voluntarily working additional hours derived more value out of their apprenticeships and were ultimately more successful in obtaining permanent employment.

The survey results showed that initiative was a key differentiator for young artisan apprentices. In Figure 4.4, it can be clearly seen that 96% of employed artisan apprentices volunteered for additional work compared to just 64% of unemployed artisan apprentices.

Young artisan apprentices need to understand that their willingness to work additional hours will directly impact on their skills acquisition rate. By showing more initiative young artisan apprentices can dictate their learning pace and opportunities for further growth.

It was shown in the results of the analysis that young artisan apprentices must learn to take accountability for their actions in aspects such as occupational health and safety (Raykov and Taylor (2013). The literature review further stated that accountability implied taking personal responsibility for ones actions and outcomes in every situation. Accountable people do not make excuses for failing to accomplish their goals and targets.

In the results of the survey, young artisan apprentices that accepted responsibility for their mistakes were more likely to attain permanent employment. In figure 4.3, 100%

of employed artisan apprentices accepted responsibility whilst only 60% of unemployed artisan apprentices did so.

Young artisan apprentices must learn to take accountability for their actions. They need to discard the trend of entitlement and blaming others for their present status in society. It is only once the youth discard this mentality that they can move forward as better future employees.

It was concluded that character and personal demeanour were important components of a strong work ethic (Van der Walt and de Klerk (2014). These characteristics often come from an individual's background and upbringing said Stanton and Matthews (1995) and (Cohen et al. (2014). Some common character traits were honesty and trustworthiness which were often seen as hallmarks of successful high-performing employees. Character was something built up over a lengthy period of time yet could be destroyed quickly through negative actions (Schreiner, 2015). Youth workers had to demonstrate their good character repetitively and consistently to earn themselves a good reputation during their artisanal apprenticeships.

The research results showed that young artisan apprentices that were trusted by their work colleagues had a superior chance of attaining permanent employment. In figure 4.4, it can be seen that 96% of employed artisan apprentices were trusted by their employers compared to just 60% of unemployed artisan apprentices.

Young artisan apprentices must protect their reputation and trustworthiness fiercely. This is one of the biggest personal assets that they will have in their careers. A bad reputation will stick with them throughout their career and news spreads quickly across companies and industries. Also, employers will be reluctant to issue reference letters to artisan apprentices with bad character.

The final research objective of the study was to identify which employability factors were influential for artisan apprentices obtaining permanent employment. The results could not prove that employability skills significantly impacted permanent employment status. Worryingly both unemployed and employed groupings displayed low levels of entrepreneurial skills acquisition. Entrepreneurship is sorely needed to drive the job creation targets needed by the South African economy. The

employability factors examined were communication skills, interpersonal skills, critical thinking skills, problem solving skills and entrepreneurial skills. The findings are discussed in more detail below.

It was shown that South Africa is a diverse country with 11 official languages. Many South African school leavers had poor communication skills in English, which was the primary language of business in the country. English was not the mother tongue language of the majority of the population. Communication skills were thus a key element of the construct of employability skills.

The research questionnaire tested the impact that communication skills had on attaining permanent employment. The research results showed that most unemployed youth had inadequate communication skills.

Simtech training institute must be commended for understanding that many of its young apprentices lacked the self-confidence to communicate effectively in the workplace. The training school focused heavily on improving the communication ability of its first-year students. They offer a foundation module on English communication. This enabled most apprentices to reach an acceptable level. This was clearly evident in the communication with respondents who were all able to communicate at an acceptable level of English. Internship host companies should also have a bridging English module for their young artisan apprentices, especially from rural areas. This bridging module would help artisan apprentices adapt quickly to their new workplace environment and be in a position to give of their best.

It was concluded that strong interpersonal skills has being required to work effectively in teams in a multi-cultural country like South Africa (Ogbuanya (2012). Also with the onset of globalisation, South African workers were increasingly interacting with colleagues, suppliers and customers from other countries. Interpersonal skills were thus an important element of the construct of employability skills. The research questionnaire tested the impact that interpersonal skills had on attaining permanent employment. Simtech put a lot of emphasis on teaching its apprentices how to work in teams and relate to others. This portion of the curriculum was aimed at cultivating good workplace skills for its young apprentices.

It was shown that the modern innovation driven economies of the developed world required strong problem solving skills to prosper (Alharbi (2014)). South Africa was currently an efficiency driven middle income economy according to the latest Global Entrepreneurship Monitor (GEM) study. Strong problem solving abilities and innovation from its young workforce was required to propel South Africa from an efficiency driven economy to an innovation driven economy. The survey results revealed that currently artisan apprentices had mediocre problem solving skills across both employed and unemployed graduates. This is an area that needs to be addressed in artisan development curriculum so that South African artisans can be globally competitive. Currently artisans are becoming parts replacement dependent rather than having the ability to repair and rebuild machines. Root cause analyses of equipment breakdowns are also poor.

It was concluded that entrepreneurial skills were amongst the most important attributes young apprentices needed to have (Dhliwayo (2008)). Entrepreneurs were sorely needed in South Africa to reach the job creation targets needed to reduce youth unemployment in the country. Young artisan apprentices needed to also become job creators as opposed to just job seekers. Key entrepreneurial skills were identifying unmet wants and needs of customers and developing a viable solution to it. Artisan apprentices needed to look out for such opportunities during their internship period.

The research results revealed an extremely low attainment of entrepreneurial skills and understanding of how a business operates. This does not bode well for these young artisan apprentices being able to start up a business using their current skill sets. This also shows that current artisan apprenticeship curriculums are too narrowly focused on technical skills and do not equip young workers with business and commercial skills.

## **5.5. Conclusion**

Both the literature review and field research have emphasized that several factors can prove to be critical success factors for artisan apprentices obtaining permanent employment. These factors can be incorporated into artisan apprentice training

programmes to improve the output of such programmes. Youth work ethic factors include reliability, initiative, determination, accountability and character. Internship/workplace environment factors include mentorship, training & development opportunities and talent pipeline management. Employability factors include communication skills, interpersonal skills, critical thinking skills, problem solving skills and entrepreneurial skills.

The implications of these findings is that much more needs to be done by both young artisan apprentices and internship host companies to improve the quality of artisan apprenticeship programmes. This improvement in quality is urgently required to overcome the twin challenges of youth unemployment and scarce skills that is plaguing Simtech graduates and their industry partners at a local level as well as other artisan development centres across South Africa at a national level. Industrial companies need to come on board and play their part in developing the scarce skills needed in South Africa whilst reducing youth unemployment. The future success of their companies is linked to the socio-economic stability that improved artisan apprentice development programmes would bring. The youth need to improve their dedication and commitment to gaining the maximum out of their apprenticeships to steer a more prosperous future for them.

This study's findings have provided a fresh look at the critical success factors that influence artisan apprentices obtaining permanent employment. This fresh insight prompts key stakeholders to focus beyond just youth wage subsidies that are focused on increasing the intake of young artisan apprentices into training internships. The more important aspect that these stakeholders need to focus on is how to make these internships more effective for both the artisan apprentice and the host company. The critical success factors identified in this study are by no means mutually exhaustive as stated in the literature review in chapter two. Larger research studies in future can explore more constructs that contribute towards artisan apprentices successfully obtaining permanent employment.

The next chapter will summarise whether the study met the expected outcomes stated in chapter one, what limitations the study had, what areas for further research are available for future researchers and importantly table recommendations.



## **Chapter 6: Conclusion and Recommendations**

### **6.1. Introduction**

This chapter detailed whether the research objectives stated in chapter one have been achieved. The conceptual model that was identified in chapter two and formulated in chapter three was successfully tested in chapter four and logical recommendations arising out of its conclusion was presented in chapter five. The test results of the research hypotheses pointed towards clear conclusions that sought to explain the impact of the independent variables on the dependent variable.

This chapter also highlights challenges that arose during the study that had to be overcome. This section of the chapter helps future studies to avoid repeating the same mistakes. This chapter also stated some of the limitations of the study that needed to be acknowledged. This section is important as it allowed key stakeholders to understand the strength of the recommendations tabled in chapter five and how generalizable those recommendations are to broader populations beyond the target population.

### **6.2. Resolution of Research Problem**

This research study established some of the main critical success factors of young artisan apprentices that attained permanent employment at the end of their internship periods. These critical success factors need to be implemented into artisan development programmes nationally to overcome the twin challenges of youth unemployment and scarce skills. This study highlighted that there is far more to be done beyond just the youth wage subsidy implementation to reduce youth unemployment in a meaningful manner. Subsidies are just the tip of the iceberg. Far more effort needs to be put into making the actual internship period more value adding for both young artisan apprentices and their internship host companies. Stricter vetting of companies claiming tax incentives for employing youth workers needs to be implemented by government. This is to flush out unscrupulous companies that benefit from the tax incentive yet do little for reducing youth

unemployment and scarce skills shortages that constrain economic growth in the country.

### **6.3. Conclusions**

The research established that of the three independent constructs of youth work ethic, internship/workplace environment and employability skills, only internship/workplace environment had a significant correlation to the dependant variable of permanent employment attainment. Youth work ethic had some influence but was not significant. Whilst such a correlation is not necessarily causal in nature, it does prove that a strong and supportive internship/workplace environment was an accurate predictor of success for young artisan apprentices attaining permanent employment. Conversely should young artisan apprentices be placed in a weak and unsupportive workplace environment during their internship, their chances of attaining permanent employment was significantly diminished.

### **6.4. Implications of Findings**

Simtech Training Institute and their artisan apprentices need to carefully choose their internship host companies. These internship host companies must be able to provide a strong and supportive workplace environment that will train artisans to the requisite standard. Simtech Training Institute should have a feedback system from artisan apprentices plus undertake annual workplace audits to assess the suitability of internship host companies on an ongoing basis. These were steps towards improving the quality control of such apprenticeship programs.

### **6.5. Recommendations emerging from the Study**

Based on the research and survey on the topic, the following are recommended:-

- a) That future artisan apprentice of Simtech commit themselves to giving off their best throughout their internship period at their host companies and display a strong work ethic that makes them attractive to future employers;



- b) that internship host companies urgently review the suitability and performance of the mentors that they allocate to oversee the development of artisan apprentices. There must be some deliverables that mentors are accountable for;
- c) that the government departments overseeing administration of the Youth Wage subsidy and similar tax incentives vet internship host companies more stringently to determine whether the contribution these companies are making towards national artisan development outweighs the tax incentives that they are benefiting from. Defaulters that are abusing the incentive programme must be taken to task and have appropriate penalties enforced to correct bad behaviour;
- d) that the artisan apprentice curriculum be modified to add more employability skills that are useful across a broader range of industries to improve the employability of young artisan apprentices;
- e) that the internship host company view apprenticeships as a key part of their talent pipeline management system to cultivate the scarce skills they need to grow;
- f) that young artisan apprentices want to do the respective professions that they enter apprenticeships for and that they have a strong passion for that vocation. Also, apprentices should be taken from technikon or training colleges where they have had some technical exposure and post schooling education. Currently taking apprentices straight out of matric is not ideal as most of this pool of candidates lack the maturity to grasp the apprenticeship with the seriousness that it deserves.

## **6.6. Recommendations for Future Studies**

The following are recommendations for researchers for future studies: -

- a) The study was conducted based on certain critical success factors that emerged from the literature review on the topic. This was not an exhaustive list and could be expanded upon for future studies.

- b) Future research studies with larger timelines and budgets could visit artisan apprentice graduates in person to obtain deeper insights through in-depth qualitative interviews. This approach can help to highlight additional success factors not detected by this current study. A qualitative interview combined with a quantitative survey is a strong triangulation method that will add more credibility and depth to a research study.
- c) During the research study, conversations with the research sample revealed that parental guidance was a key factor in the differentiation between employed artisan apprentices and unemployed artisan apprentices. It was too late to modify the research questionnaire to probe this further due to late approval of ethical clearance. Hence this study did not probe parental guidance further as a key factor apart from touching on it under the element of character within the construct of youth work ethic. Future research studies should probe the role that parental guidance plays in the success of young artisan apprentices.
- d) Future studies could be extended to larger samples outside of Simtech to consider other artisan development centres across South Africa. This larger target population will make the research results more generalizable to the broader South African population of artisan apprentices.

### **6.7. Limitations of the research study**

The following limitations of this research study were acknowledged: -

- a) This study focused only on Simtech artisan apprentices from the past three years. Simtech is one of many artisan training centres in South Africa. Hence the results of the study on Simtech artisan apprentices cannot be generalised to all artisan apprentices in South Africa.
- b) The majority of respondents to the survey do not speak English as their first language. Their understanding of the various questions was assumed but there is the possibility of bias in their responses due to lack of understanding. Special

care was taken to use simple English in the questionnaire and to make the questions as straightforward as possible. This was achieved by avoiding double-barrelled questions with ambiguous meaning. It is recommended that subsequent studies (with larger funding, time and resources) on this topic translate the research questionnaires into ethnic languages so that all respondents can respond in the language which they are most fluent and comfortable in.

- c) Lastly the participation rate of the survey fell below expectations. Therefore, the sample size needed to draw statistically significant conclusions was not met. The results of this research study must therefore be used with caution by the general public.

#### **6.8. Scope for future research**

The following challenges were encountered and overcome during the course of this research study: -

- a) It was initially difficult to reach past Simtech graduates as they were no longer based at the Simtech training institute. Simtech had only the cell numbers of the students as a sampling frame to access. This sampling frame required having to contact each artisan apprentice individually by cell to obtain their e-mail address to administer the survey. This was a tedious process within the relatively short timeline of the study. Seven students out of the sampling frame had changed their cell numbers since graduating from Simtech and could not be contacted.
- b) Some graduates were hesitant at first to interact with the researcher. This apprehension was overcome by an introductory e-mail by the CEO of Simtech to introduce the researcher and explain the context of the research study being undertaken.
- c) Some past Simtech graduates did not have an e-mail address to complete the survey online. The survey had to be done telephonically with these students and then their responses manually captured on eSurveycreator by the researcher.

- d) The geographical spread across Kwa-Zulu Natal and neighbouring provinces of past Simtech graduates made face to face in-depth interviews difficult to achieve. This was overcome by selecting a quantitative research approach via an online survey that could be e-mailed out as opposed to a qualitative research approach.

## **6.9. Conclusion**

In a South African economy characterised by youth unemployment and artisan skills shortages, young apprentices and their internship host companies need to maximise the skills transfer during artisan apprenticeships to obtain the maximum mutual benefit. The curriculum of apprenticeship programmes needs to be re-evaluated to address the required depth and relevance of knowledge and skills that are needed by industry. Mentors need to be better prepared and more willing to be effective conduits of critical skills transfer to young artisan apprentices. Artisan apprentices need to have strong internal drive and hunger to succeed in their apprenticeship programmes and take their place as productive artisans in the South African economy.

The aim of the study was to assist young artisan apprentices and their apprenticeship host companies to understand the critical success factors that determine artisan apprentices attaining permanent employment post their apprenticeship period. These critical success factors could be used to refine existing apprenticeship programmes into a more beneficial skills transfer system. The study comprised an online survey which obtained responses that determined which were the critical success factors which could be incorporated into artisan development programmes. The survey was instrumental in revealing some interesting results and findings. These findings could result in critical changes to the attitudes of both young artisan apprentices and their apprenticeship host companies in unlocking further mutual benefits from artisan apprentices. This improved output of artisan apprenticeship programmes is vital for reducing the twin challenges of youth unemployment and skills shortages in the South African economy.

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