INVESTIGATING THE WAYS IN WHICH EDUCATIONAL CREDENTIALS INFLUENCE EMPLOYERS' HIRING DECISIONS

Presented to School of Education at the University of the Witwatersrand

In partial fulfilment of the requirements for the degree

Master of Education

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MARCH 2023

DECLARATION

I declare that this thesis '*Investigating the ways in which educational credentials influence employers' hiring decisions'* is my unaided work. It is being submitted for the degree of master's in education (M.Ed. in Education and Work) at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other university.

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ACKNOWLEDGEMENTS

I sincerely extend my deepest appreciation and thanks to all who supported me and contributed to the successful completion of this study. Firstly I bow in humble adoration to God All Mighty, who gave me strength and filled me with the spirit of wisdom, knowledge and understanding, which enabled me to grasp the content and navigate the meandering path leading up to the successful conclusion of this project, like king David I acknowledge that had it not been of the Lord who kept me, I would have been swallowed by discouragement, fatigue, frustration, and many other such obstacles.

Secondly my sincere gratitude goes to my two supervisors, Professors Stephanie Matseleng Allais and Yael Shalem for their unwavering support and guidance, dedication, and thoroughness. Special thanks also goes to Dr Palesa Molebatsi, who devoted time to be my sideline coach and mentor, she was always available to offer support when I was feeling weary and frustrated and seemed lost along the way. Through the guidance of this trio, I emerged from the process being a much better and refined academic and professional. My confidence is now so high that I am inspired to fly to even greater academic heights.

Thirdly, I want to convey special thanks to all the SOC officials who took out time to participate in my study as informants. Without their support and honest participation, this study would not have been a success. Lastly, I want to appreciate my manager at work, Mr Benedict Mogadime, who has always been my pillar of strength, for his encouragement and support, and the believe he has in my ability.

A special thank you also goes to my employer for giving financial support and allowing me time-offs to focus on my studies.

DEDICATION

This dissertation is dedicated to my two special daughters, Tshenolo and Ke-Isago-Entle Sekokope, for their unwavering support, encouragement and understanding.

ABSTRACT

There is a strong link between formal education and results on the labor market, like employment and earning potential, according to a wealth of research. Academic credentials are frequently seen as a doorway into mainstream economic engagement on a global scale, which justifies corporate and public investment in higher education. What is not always evident are the interpretations that companies give to educational credentials in particular settings, such as hiring decisions, and what these meanings reveal about the recruiting criteria of employers for potential employees. The purpose of this study was to comprehend the significance that employers place on qualifications and how this significance affects the hiring processes. In order to do this, the study looked at the hiring of engineers at two different occupational levels at four South African State-Owned Companies. To ascertain the meanings that employers attach to qualifications when screening CVs for engineering positions, a descriptive phenomenological technique was taken into consideration and enhanced with the use of hypothetical CVs. Three theoretical viewpoints were used as the foundation for this study in order to comprehend employer opinions of what qualifications actually mean. They were the credentialism theory, the screening and signalling theories, and the human capital theory. According to the study, ownership of a qualification gave an individual a competitive edge in the labor market and was viewed as a main selection criterion from all three theoretical viewpoints.

Main findings: The selection criteria for the two engineering positions at the two distinct levels were compared in this study. First, the results imply that the recruiting standards for a Junior Manager Mechanical Engineering post and an Electrical Engineering Technician, a lesser entry-level role, differ significantly. I discovered that the primary distinction between the two was the importance of qualifications in the hiring process for lower entry-level positions. The findings indicate that at this level, employers view qualifications as the main criterion for choosing the best applicant for the position because they believe they provide a sufficient indication of the knowledge and skills needed to perform the work. According to the statistics, individuals with the most relevant credentials and those who earned high marks in their degrees and certifications were seen as having a greater understanding of the subject matter of their credentials and were therefore given preference during the hiring process. This result appears to support the human capital theory's assertion that qualifications represent knowledge and abilities because it substantially aligns with its underlying premises.

Secondly, I found that, when it came to the management role, candidates' qualifications were not taken into account in isolation but rather coupled with additional credentials, such as prior work experience. In reality, I discovered that in this area, job experience was valued equally to or even more than qualifications when hiring at management levels. For instance, it seemed that companies would prefer to go with someone with work experience in some situations, such as when the minimal qualification criteria was not entirely completed. Although the focus of my study was on qualifications, some of the companies made a strong case for the value of prior job experience, sometimes at the price of qualifications. While this does not go against the principle of human capital, it does imply that job experience may be viewed as a more valuable indicator of applicable human capital than qualifications for management roles. Finally, I discovered that job experience was essential for the development of soft skills like problem solving, teamwork, communication, and leadership, among others. According to the statistics, these talents can be developed over time with the proper amount of work experience, mentoring, and coaching. Fourth, I discovered that the relationship between work experience and qualifications was complex and complementary, and that worker productivity was not a function of qualifications alone. According to study findings, companies would enrol recent graduates in WIL programs largely to supplement their education with relevant work experience, which would help them grow and maximize their productivity. Finally, I discovered that employers believed all schools were regulated and followed the same national standards of teaching and learning, thus they did not consider institutional reputation when choosing qualified applicants. This also resonates more with the human capital idea rather than the credentialism theory, which provides a social closure perspective, and assumes that the more prestigious universities are associated with better quality graduates.

My interpretation of the aforementioned five key findings leads me to believe that employers primarily view qualifications as stand-ins for the actual knowledge and abilities needed to do the job. However, even when they were not just relying on qualifications, they still looked for qualities like job experience and soft skills, which are all referred to in literature as examples of human capital. These results strongly imply that the human capital theory is more important in explaining and influencing hiring decisions for engineering candidates. Human capital theory appears to have replaced qualifications as the predominate mechanism for explaining employment choices in the engineering sector, despite a few modest hints that qualifications served as a sort of screening function. In a discipline like engineering, where the body of knowledge is very closely correlated to the job that needs to be done, this makes sense.

Key words: educational qualifications, credentials, worker productivity, hiring decisions, human capital theory, sorting (screening and signalling) theories, credentialism theory.

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CHAPTER 1: INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 INTRODUCTION THE STUDY

Higher education has historically been seen as a path to engagement in the economy at large. Education has been credited by policymakers, businesses, academics, and the general public for enhancing both society and people's possibilities for economic success (Milian et al., 2020). People try to get educational credentials (such as degrees and diplomas) since they are typically considered as passports for securing employment, and companies use credentials as one of the primary determinants for hiring decisions (Milian et al., 2020). This perceived value placed on education appears to have resulted in increased public and private investments, as well as the expansion of higher education in both developed and developing countries (Milian et al., 2020).

Despite this widespread belief in education, societal changes and the shift of national economies to knowledge-based economies are gradually affecting the worth of educational credentials (Florida & Spencer, 2015; Milian, et. al., 2020). According to Milian et al. (2020). The rise of disruptive technologies like robots, the internet of things, and artificial intelligence, among others, has caused a rapid change in the skills required by the economy. According to Milian et al. (2020), this leads to shortages in several in-demand professions, requiring companies to seek beyond educational qualifications when filling openings.

This is the focus of this study, where I evaluate employer recruiting decisions from the perspective of qualifications to understand how qualifications affect employers' judgments. In order to throw more light on the relationship between qualifications and employment decision-making processes, the study examined three of the major theories in the field of education and work. It does this because it recognizes that different theories offer divergent perspectives in this regard. My empirical goal is to comprehend employers' perceptions of qualifications, or the significance they give to them during the hiring process. I have concentrated more intently on the precise qualities that employers in the engineering sector look for when reviewing applications from different engineering job hopefuls for entry-level and junior management roles. In order to accomplish this, I looked at how companies use the credentials listed in Curriculum Vitae (CVs) when making hiring decisions. In order to better understand employer perceptions of qualifications as a selection factor during hiring decision-making processes, I tried to glean insights from each theory in my examination of empirical data.

1.2 BACKGROUND TO THE STUDY

South Africa's combined socioeconomic dilemma of high unemployment and a skills gap is the first contextual aspect for this study (Du Toit et al., 2018; Oosthuizen & Bhorat, 2005). For instance, the Quarterly Labour Force Survey (QLFS, Q2:2022) revealed that the unemployment rate was 34.5% in the first quarter of 2022, down by 0.8% from the 35.3% reported in the first quarter of 2021. (StatsSA, 2022). Although there has been a little increase in the number of persons in employment, the severity of unemployment is still high among young people, with the QLFS reporting that 37.0% of young people between the ages of 15 and 35 are still without a job. This percentage is almost twice as high as the 15.6% of adults between the ages of 35 and 64 who are unemployed. According to research, social exclusion, criminality, social instability, inadequate production capacity, a lack of economic welfare, and the depletion of human capital are all contributing causes to the destructive effects of unemployment around the world (Kingdon & Knight, 2004).

Furthermore, studies show that the majority of those who are unemployed either lack education or have low abilities (Oosthuizen & Bhorat, 2005), indicating that skills shortages constitute South Africa's second dual concern (Du Toit et al., 2018). Mateus, Allen-Ile, and Iwu's (2014) study found that South Africa lacks adequate supply of artisans, teachers, doctors, and engineers. The results of an earlier set of research by Erasmus and Breier (2009), who identified skill shortages in nine different professional categories, are likewise consistent with this. It is believed that the types of skills produced do not fit the demands of the labor market and the economy, leading to persistent skills mismatches that develop over time (Pauw et al., 2006). In addition, given a shift in demand from a low-skilled to a highly skilled and knowledge-based economy, skills shortages exacerbate the problem of unemployment (Pauw et al., 2006). In the field of engineering, this scarcity is much more pronounced (Akinshipe et al., 2019; Department of Home Affairs, 2022; Du Toit et al., 2018; Kraak, 2008; Manpower Group, 2011; Janse van Rensburg, 2017). Studies show that employers around the world have trouble finding engineers because of the ongoing lack of these talents (Akinshipe et al., 2019).

According to the Engineering Council of South Africa (ECSA, 2015), there are only about 19 523 registered professional engineers in South Africa. Ekwoaba et al. (2015) and Gamage (2014) provided more analysis on the employment process and the selection criteria for engineering professionals in South Africa. They found that in comparison to international norms, South Africa lags behind in terms of the population's ratio of engineers, with 1 engineer for every 3100

people as opposed to the global average of 1 engineer for every 360 people. According to Janse van Rensburg (2017) and du Toit et al. (2018), South Africa's successful implementation of their public infrastructure development program is highly dependent on adequate supply of engineering skills, particularly electrical and mechanical engineers. Janse van Rensburg (2017) makes the case that in order for the nation to maintain its competitiveness on the global stage, there must be an increase in the supply of engineers. In a similar spirit, Watermeyer and Pillay (2012) contend that there is a shortage of engineering talent in South Africa because the field has grown vital and in-demand. The Engineering Council of South Africa (ECSA, 2015) supports the idea that there is a skills gap in this industry and blames the problem to the low enrolment of engineering students in higher education due to poor matric scores and low enrolment in STEM-related courses.

This study focuses on the use of qualifications as a key factor in the hiring process, particularly to understand the ways in which employers interact with information about qualifications when screening CVs in the initial employee selection process. The engineering field is used as an example of an occupation in high demand where there is a short supply of skills. This resulted from conducting interviews with organizations regarding the initial CV screening procedure for hiring engineering specialists. An entry-level Electrical Engineering Technician and a Junior Manager for Mechanical Engineering were chosen as the two positions of focus in this study. The use of these two positions is motivated by two fundamental factors. The first is to elicit a general grasp of how hiring managers compare candidate qualifications to other factors. Second, I want to find out if credentials matter equally when hiring for management and entry-level positions.

The use of qualifications in recruiting decisions is not well understood, despite a recent upsurge in studies on this topic (Bills, 2004; Ionescu, 2012; Rospigliosi et al., 2014; van Broekhuizen, 2009; van de Werfhorst, 2011; Wolbers, 2007b). A thorough grasp of the meanings employers place on qualifications and how these meanings affect their hiring decisions is what is lacking in the existing research. Many theories provide various justifications for how educational requirements influence aspects of the labor market, such as the hiring process (Bills, 2003; van Broekhuizen, 2009). Moreover, Bills (2003) offers a more in-depth analysis of the ideas that emphasize the significance of educational qualifications (Arrow, 1973; Spence, 1973; Thurow, 1976) and divides them into three groups.

The first are theories of productive skills, which contend that people acquire productive talents as a result of their education. This group includes the human capital theory. Human capital theory's central claim is that education bestows onto individuals the knowledge and abilities that directly raise their level of workplace productivity (Becker, 1993). According to this viewpoint, people spend money on education in order to secure well-paying jobs. The second are the positional good theories, which contend that qualifications are a positional benefit, putting those who possess them in front of the line for well-paying jobs. This group includes the screening and signalling ideas (also known as the sorting theories; pioneered by Arrow, 1973; Spence, 1973; Thurow, 1976). These theories' central claim is that educational credentials are used as a screening and sorting tool to separate the highly educated from the rest because credentials indicate potential productivity in job candidates.

A social closure or categorization perspective is offered by the third group of theories. These theories contend that a person's capacity for productivity or trainability is unaffected by their level of schooling (Kasika, 2015, p.14). The central claim of these theories is that educational credentials only serve to institutionalize social class discrimination in society and to justify social exclusion or inclusion, where only a select group of highly educated individuals have exclusive access to the best opportunities, jobs, resources, and rewards at the expense of the majority of those who are less fortunate (Kasika, 2015). Based on this theoretical analysis, this study's theoretical framework, which is comprised of the human capital theory, sorting (i.e., screening and signalling) theories, and credentialing theories, is supported by these three theories.

The goal of this study was to determine which theory best explains how employers view qualifications and how they are used to choose which engineering professionals to hire. Four State Owned Companies (SOCs) from the Department of Public Enterprises' stable were used to accomplish this. These businesses were chosen for this study because of their significance to the South African economy, particularly the re-industrialization and economic reconstruction and recovery programs, but also because they all employ a variety of engineering specialties, including the electrical and mechanical engineering specialties that are the subject of this study.

1.3 PROBLEM STATEMENT

The most important factor for worker proficiency and business success is without a doubt the skills that individuals gain, both in developed and developing countries (Gholston, 2015). Several theories provide contrasting explanations for how educational credentials are employed in the

hiring process. According to theories like the human capital hypothesis, since employers link educational attainment to productivity, those with higher levels of education have a better chance of landing higher-paying positions. People engage in obtaining the greatest educational credentials available to gain more skills and knowledge that give them a competitive advantage in the job market because they believe that education has an economic payoff (Becker, 1964). More earning potential as well as personal and social advantages are additional benefits of schooling (Becker, 2009; Hanushek & Woessmann, 2008).

Both the sorting theory and the credentialing theory argue that educational credentials do not directly influence a worker's productivity, in contrast to the human capital theory's point of view. Qualifications, according to sorting theories, act as either screening or sorting mechanisms (Arrow, 1973). This means that while job seekers use qualifications to advertise their skills to companies, employers utilize qualifications to search for qualified job prospects. Some ideas contend that this provides certification holders with a competitive advantage over rivals who lack credentials. Similar to this, the credentialism theory sees qualifications as a means of maintaining social class prejudice and a justification for the inclusion of one class at the expense of another. Nonetheless, all three models support the notion that higher levels of education are associated with better work chances and greater earning potential (Hodgman, 2018).

There has been an increase in research on hiring decisions in the workplace over the years (Akintola, 2011; Asano et al., 2015; Bendick & Nunes, 2012; Bills, 2004; Bolander & Sandberg, 2013; Davidson, 2011; Gholston, 2015; Mansor et al., 2014; McKinney, 2015; Rozario et al., 2019), but there is little empirical scholarship examining the actual meanings that employers attach to qualifications (Kingdon & Knight, 2004; Rivera, 2012). A thorough grasp of the meaning's employers attach to educational degrees and how these meanings affect their hiring decision-making processes constitutes the gap in the body of existing work (Kingdon & Knight, 2004). This study set out to explore the frequently proposed but seldom validated hypothesis that the most crucial factor influencing company hiring decisions is educational qualifications (Rivera, 2012).

Thus, I wanted to learn how qualifications compared to all the other selection criteria when it came to recruiting, therefore I looked into employers' perceptions of qualifications. For instance, Rivera (2012) argues that even after taking into account measures of the applicants' qualifications, social capital, and demographic traits, there is still a significant amount of

unexplained variation in how employers actually view qualifications as a hiring criterion, particularly during the CV screening stage.

Several academics have unanswered concerns about a significant portion of what influences employer hiring decisions as a result of this knowledge gap. Rivera (2012) explains that this is due to a lack of data because there isn't much study being done in this area. Additionally, because talents are not immediately visible to employers at the time of hiring, the procedure is similar to playing the lottery and involves making an uncertain purchase (Spence, 1973, p. 356). The dynamics of how skills can be judged during hiring are not well understood, which results from the aforementioned (Piopiunik et al., 2020). According to Spence (1973), the employer must learn about the candidate after hiring them in order to determine what skills and capabilities they possess. This requires the company to observe the candidate for some time after hiring them. This is the discrepancy that the human capital theory cannot fill.

In light of this, the goal of this study was to comprehend the many methods through which employers evaluate and confirm qualifications in relation to job requirements. In light of this, the sorting (i.e., screening and signalling) theories and credentialism, as well as the human capital theory, were examined to determine which of the theories contributes insights into what a particular group of employers believe regarding qualifications, with a focus on the hiring of engineering professionals within particular SOCs in the South African context.

1.4 RESEARCH OBJECTIVES

The objectives of this study were:

i. To understand what employers make of individuals' educational qualifications in hiring decisions, and what they think credentials tell them about prospective employees.
ii. To understand the role of qualifications in relation to other criteria and characteristics when hiring electrical engineers at different levels.

1.5 RESEARCH QUESTIONS

This study sought to answer the following research question:

What meanings do employers attach to educational qualifications in hiring decisions, and what do these meanings tell us about employers' hiring criteria of prospective employees?

The sub-questions answered in this study included the following:

i. How does the screening of CVs/resumes fit in the overall hiring process?
ii. What criteria do hiring managers/officials employ when screening candidates' qualification?
iii. Are these criteria the same when considering qualifications for different positions of engineers?

1.6 AIM OF THE STUDY

The aim of this study was to examine how qualifications influence employer decisions during the hiring process of engineers in four SOCs in South Africa. Its specific focus was on the meanings that employers attach to qualifications when screening candidates' CVs in the engineering sector during the selection process. This was achieved by examining competing theories about how education influences labour market outcomes and sought to understand which of the theories better explain what employers make of qualifications when screening CVs for selection purposes.

1.7 SIGNIFICANCE OF THE STUDY

The primary aim of this study was to gain new insights and knowledge with regard to the use of qualifications as a hiring criterion by employers during the hiring process, particularly to understand the meanings employers attach to qualifications when screening candidates' CVs in the engineering sector during a selection process. New knowledge gained about how qualifications weigh as a hiring criterion when compared to other selection criteria contributes to the body of knowledge, research and theory. This knowledge also contributes towards elucidating which theory better explains the phenomenon of qualifications-based decisions during the hiring process and how these theories complement each other. From the human resources perspective, human resources managers will be able to understand how other managers in their field handle the hiring process. This may be able to improve their current hiring decision making process by learning from other professionals.

1.8.THE ROLE OF ENGINEERING SKILLS IN ECONOMIC DEVELOPMENT

Internationally, engineering skills and knowledge are acknowledged to be the fulcrum to innovation and technological development necessary for economic growth and help solve societal challenges (Trevelyan, 2019). For instance, Ettridge and Sharma (2020) opine that engineering professionals are critical for all aspects of human development, from construction, technology, transportation, infrastructure development and maintenance, to education and health provision, among many other services. Trevelyan (2019) seem to corroborate this assertion, when he claimed that productivity improvement is engineering's ultimate purpose, its very essence. According to Gerber and Mammen (2019), the ideal global ratio of technicians to technologist to an engineer is 4:2:1. Unfortunately, the dire scarcity of engineering skills in the South African labour market, is said to be responsible for most of the infrastructure development backlogs in the country (Department of Home Affairs, 2022; Kraak, 2008; Manpower Group, 2011; Rasool and Botha, 2011).

Studies further show that the supply of engineering skills in South Africa is very low when compared to other countries, with a ratio of 1:3100 (i.e., one engineer to every three thousand one hundred population), when compared to other countries such as the USA, UK and Japan, which all have a ratio of 1:310. Furthermore, studies reveal that Brazil's ratio of engineering to population is 1:227 while Malysia has a ratio of 1:543. This statistics confirm the suggestion that South Africa has a low supply of engineering skills. This state of affairs is blamed on the low uptake of learners in the science, technology, engineering and mathematics (STEM) subjects at high school.

It is thus of interest in this study to understand the engineering labour market from the perspective of hiring criteria of engineering professionals, to understand factors that drive employer hiring decisions of these professionals.

1.9 CHAPTER ORGANISATION

This study is organized as follows:

Chapter 1 provides the introduction and background of the study which outlines the research problem and research objectives.

Chapter 2 presents the literature review of the study which describes the human capital theory. This section will cover the exploration of the concept of human capital theory, and covers its origin, and main claims. Secondly, the section also provides the critiques and some of the limitations of the theory. Subsequently, I then consider alternative theories to the human capital theory. For the purpose of this study, I confined my analysis to the sorting (i.e., screening and signalling) theories, and the credentialism theory.

Chapter 3 outlines the research methodology of the study which describes the research design, population and sampling method, research instrument and other relevant aspects of the research methodology.

Chapter 4 describes the data analysis of the study. It outlines the results and findings from the data collected.

Chapter 5 is the conclusion and recommendations chapter. It consolidates the results and findings to come up with a conclusion against the research objective. Furthermore, study limitations are also outlined, and appropriate recommendations were also formulated in this chapter.

CHAPTER 2: LITERATURE REVIEW

2.1. THE ROLE OF ENGINEERING SKILLS IN ECONOMIC DEVELOPMENT

Internationally, engineering skills and knowledge are acknowledged to be the fulcrum to innovation and technological development necessary for economic growth and help solve societal challenges (Trevelyan, 2019). In South Africa, these skills are described as scarce, meaning the vacancies in engineering occupations are difficult to fill. This study thus sought to explore the engineering labour market from the hiring point of view, to understand the criteria for hiring engineering professionals, and the factors that drive hiring decisions in this field. Globally, population expansion results in increases in industrial activities such as infrastructure development and construction which are the backbone of every nation's human and economic development (Bengesai & Pocock, 2021; Munir, 2021; Sharp, 2011). These factors affects the engineering profession, making the profession the fulcrum of economic development, especially for developing economies such as South Africa which needs to enhance its global competitiveness (Bengesai & Pocock, 2021; Munir, 2021; Okoroigwe et al., 2022).

Engineering permeates every aspect of human development, from buildings, transportation, machinery, technology, consumer electronics, software development, power generation and distribution to the provision of education and healthcare services (Ettridge & Sharma, 2020, p.86). Engineering skills are, therefore, key drivers in the delivery and maintenance of construction and infrastructure development programmes (Akinshipe et al., 2019; Du Toit et al., 2018; Janse van Rensburg, 2017; Watermeyer & Pillay, 2012). In South Africa, the success of the country's economic reconstruction and recovery programme is dependent on the adequate supply engineering skills, in particular civil, electrical and mechanical engineering skills (Akinshipe et al., 2019). As Janse van Rensburg (2017) and Akinshipe et.al. (2019) note, the country's global competitiveness and successful implementation of massive infrastructure projects hinge on adequate supply of a wide range of engineering skills. In the next sub-sections I provide a brief overview of the supply, education and regulatory regime of engineering skills in South Africa and conclude the section by reflecting on the country's engineering labour market.

2.1.1 An overview of the supply of engineering skills in South Africa

Studies have shown that South Africa has a dire scarcity of engineering skills, which is responsible for backlogs in most infrastructure development projects (Department of Home Affairs, 2022; Kraak, 2008; Manpower Group, 2011; Rasool & Botha, 2011). Kraak (2008) attributes the slow progression to the country's economic development to this challenge. According to Watermeyer and Pillay (2012), engineering skills have become a domain of critical and scarce skills in South Africa, suggesting a short supply. This assertion is corroborated in the country's recently released National Critical Skills List (Department of Home Affairs, 2022).

In terms of how South Africa measure up internationally on the supply of engineering skills, Watermeyer and Pillay (2012, p.47) report that South Africa's engineering density is far less when compared to other global economies. For instance, South Africa's ratio of engineering to the population is 1:3100, whereas countries such as the USA, UK and Japan each have a ratio of 1:310. ECSA (2015) further reports that Brazil's ratio of engineers to the population is 1:227 and that of Malaysia is 1:543. Consistent with this trend, Akinshipe, et.al (2019) found that the USA has a ratio of 380 engineers to a population of one million people, whilst China and India each have 95 engineers servicing one million people, compared to South Africa with only 45 engineers serving a million people. This picture suggests that South Africa has a dire shortage of engineering skills. Rasool and Botha (2011) and the Engineering Council of South Africa (ECSA, 2015) attribute the challenge to inadequacies in the current education system, particularly poor-

quality matric results in the STEM subjects, which affect the uptake of engineering students at university level. As Watermeyer and Pillay (2012) note, the implication of this is that for South Africa to remain globally competitive, it has to ramp up its production of engineering skills.

2.1.2. South Africa's engineering education and regulatory framework

Engineering is defined as the practice of science and technology designed to provide solutions to social and economic problems and those essential to the advancement of society (ECSA, 2020).' Hanrahan (2014) add the dimension of prudent, efficient, economical and risk sensitive usage of available resources to the definition. Trevelyan (2019, p821) distinguishes between engineering education and practice, which affect the employability of these professionals. Embedded within the practice of the engineering profession is the utilisation of scientific and mathematical knowledge to solve multifaceted human problems (Bengesai & Pocock, 2021; Hanrahan, 2014; Munir, 2021). Trevelyan (2019) maintains that the practice has to do with how to deliver practical results within predefined standards and expectations. Furthermore, the practice is made up of a series of elaborate socio-technical performances, which comprise the provision of solutions to technical problems, informal leadership and learning and teaching, mobilisation of human resources, and technical coordination within multi-party negotiations (ibid, p.823).

Therefore, Trevelyan (2019) concludes that productivity improvement is engineering's *raison detre*, its very essence and ultimate purpose. Studies show that most often, misalignment between these two components has dire economic consequences, which include the weakening of global productivity (Cramer, 2006, cited in Trevelyan, 2019). According to Munir (2021), the sustainable solution to future economic, social, cultural and environmental systems will require engineering professionals who are able provide precise application of scientific analysis and holistic synthesis of problems. This leads me to a brief discussion of engineering education in South Africa.

Klassen (2018) traces the origin of the South African engineering profession to the mining sector with the discovery of diamonds and gold in the country. According to ECSA (1995), the core engineering qualification offered in South Africa is a four-year Bachelor of Science Engineering (B.Sc. Eng.) degree, which offers sound foundational knowledge in science coupled with strong problem-solving skills. This qualification is generally offered by the traditional elite universities.

Kloot et.al. (2009, cited in Klassen, 2018, p.58) also note that students who are less prepared for engineering, often from poorer and low-quality schools, are helped to easily transition through an internationally recognised foundation programme. Universities of technology offer national diplomas as a basic qualification, which is made up of four semesters of academic study and a full year of experiential training. Because of its strong focus on practical skills, this qualification provides diplomates with some kind of plug and play (i.e., ability to be immediately productive) ability. Furthermore, students take two more semesters of study to progress from a national diploma to a BTech degree, and the programme strongly focus on specialised knowledge and managerial training to enhance career development. Regulation of the engineering profession is provided by the Engineering Council of South Africa (ECSA), which among other things also oversees the accreditation of programmes through its Accreditation Committee (Klassen, 2018).

According to Case (2014, cited in Klassen, 2018, p.5), a shift to outcomes-based accreditation in engineering focuses more on what graduates can do rather than what they know. This implies that from the training point of view, engineering graduates more or less enter the labour market with some assurance of performing to the required level and standard. Klassen (2018) provides that the responsibilities of the Council include accreditation and registration of engineering professionals as engineers, technicians and technologists. With regard to the criteria for accreditation, Klassen (2018) explains that the system comprises seven components, which include: quality of teaching and learning, capacity for improvement and programme review, knowledge profile and coherent design, assessment of exit-level outcomes; quality of teaching and learning; resourcing and sustainability; and response to previously identified deficiencies and concerns. Furthermore, South Africa also has a number of national professional bodies such as the SA Institute for Civil Engineering (SAICE); the SA Institute for Mechanical Engineering (SAIMechE); and the SA Institutes for Electrical Engineering and Chemical Engineering (i.e., the SAIEE and SAIChE) respectively.

These institutes have delegated responsibilities for screening and licencing candidates in relation to the professional expertise of their disciplines. According to ECSA (2010), there are two stages for a candidate to attain professional status, the first of which is the acquisition of academic qualifications, which is followed by stage 2, which is usually a full three-year industry training. Furthermore, to maintain their professional registration status, all engineering professionals are required continuously engage in continuous professional development (CPD).

2.1.3. The South African Engineering labour market

From a labour market perspective, South Africa is reported to have an acute shortage of engineering professionals, i.e., engineers, technologists and technicians per capita when considering the country's population, when compared to developed countries (ECSA, 2020; Gerber & Mammen, 2019). According to Gerber and Mammen (2019), the ideal global ratio of technicians to technologists to engineer is 4:2:1. This shortage is attributed to the low uptake of learners in the STEM subjects at high school level, and is argued to be the reason for compromised service delivery in the country. This situation is corroborated by the Department of Home Affairs (2022), which lists a variety of engineering qualifications including electrical and mechanical engineers among occupations in high demand. Employers require graduates and diplomates to who have acquired a of combination of skills, knowledge, and attitudes requisite for them to be competitive economically, and responsive to modern day workplace needs (Lawless, 2011; Naicker, 2017).

Martin et al. (2005) assert that employers prefer appropriately skilled workers who can productively deliver results with minimal additional training. According to Martin et al. (2005), for and engineering graduate to be considered competent, they must demonstrate a good balance between the science and practice of engineering. Martin and his colleagues distinguishes between the science and practice of engineering, and argue the science pertains to the application of science and mathematical tools to solve problems of engineering nature, whereas practice pertains to the ability to recognise and formulate solution to problems, even if not engineering related. Therefore, the main attribute required by engineering employers are technical knowledge and skills of graduates, and form the core of many engineering curricular (Trevelyan, 2019). Munir (2021) further argue that global labour markets and engineering employers require practicing engineers to also possess a host of soft skills such as communication, collaboration, leadership, adaptability, creativity, social, interpersonal, and presentation skills among others, in addition to technical knowledge and skills. Lastly, Munir (2021, p.167) contend that because of their global footprint, major engineering companies such as BMW, VW, Samsung, Sony, Bosch would require graduates equipped to effectively work in multidisciplinary teams.

2.2 THEORETICAL PERSPECTIVES ON THE USE OF EDUCATIONAL QUALIFICATIONS IN THE LABOUR MARKET

Literature is replete with evidence showing the existence of a positive correlation between formal education and the outcomes of the job market, in particular employment and earnings potential (van Broekhuizen, 2009, p.1). The discussion about the rates of return to education has been the subject of many studies and has been explained from different theoretical perspectives. Theorists in the field are in constant debate and disagreement about how educational qualifications affects the job market. The bone of contention between theorists in this regard borders on two fundamental questions, namely: "why do some people acquire more education than others, and why are wages and education positively correlated (Graetz, 2017, p.2)?" Literature classifies theories explaining the significance of educational qualifications into three main categories (Kasika, 2015, p.11). The foremost category are productive theories (e.g., human capital theory) which argue that qualifications provide productive skills to individuals who holds them (Becker, 1962; Mincer, 1958; Schultz, 1961).The second category are theories in the positional good perspective (sorting theories comprising both the screening and signalling theories) pioneered by (Arrow, 1973; Spence, 1973; Thurow, 1976). The third category are theories that fall within the social closure perspective, one of which is the credentialing theory (Berg, 1970; Collins, 1979). In the next section I discuss in detail each of the theories.

2.2.1 HUMAN CAPITAL THEORY (HCT)

Human capital theory is the most dominant theory for explaining labour market outcomes of education (Bol, 2018; Fix, 2018, p.15). According to Becker (1964) and Mincer (1958), the theory is helpful for estimating employees' income distribution in relation to their investments in education and skills development. The theory suggest that further benefits of education to society may include tangible or intangible results such as higher productivity in human society (Gao, 2015, p.30). Higgins (2019, p.28) describe human capital theory as a multi-dimensional theory which rose into prominence mainly as result of the contribution of economists such as Mincer (1958), Schultz (1961) and Becker (1962, 1964). Hanushek and Woessmann (2008) later made an important contribution to the theory by elevating cognitive skills and the quality of learning as indicators of educational success.

The theory postulates that investments in education results in improved individual and subsequently organisational productivity (Olaniyan & Okemakinde, 2008; Psacharopoulos &

Patrinos, 2018). They theory is of great interest in this study as it is the basic theory for explaining human resource processes and practices related to hiring process (Acemoglu & Pischke, 1998; Becker, 1962). This is because the theory rests on the basic assumption that individuals who acquired skills through schooling, will be rewarded with jobs in the labour market because employers believe they are more productive as a result of their formal schooling (Becker, 1962). In the next two sub-sections, I examined the concept of human capital in more detail, the main claims made by the theory as well as some of the criticisms made against it.

2.2.1.1 The concept of Human Capital Explained

Historically, the skills that human beings possess are considered as a form of capital (Higgins, 2019). Possession of qualifications, knowledge, skills and work experience is regarded as human capital, and is associated with labour market success (Hilal et al., 2017; Rospigliosi et al., 2014; van Broekhuizen, 2009). Despite a lack of general agreement on the definition of human capital or what it constitutes among economists (van Broekhuizen, 2009), there is, however, consensus that a wide spectrum of variables such as previous work experience, on-the-job-training, knowledge, skills, formal education, health, parent's background, among others, are generally accepted to denote human capital (Becker, 1964). Advancing Becker's (1964) definition, Groysberg et. al. (cited in Higgins, 2019) suggest that human capital comprises of a bouquet of skills acquired over time, which are differing levels of application and transferability to different work environments. Schultz (1961, p8-9) adds variables such as labour migration, health and on-the-job-training as other forms of human capital.

From the foregoing, two important characteristics of human capital can be deduced. The first being that human capital can be acquired by way of formal schooling, and that it is embedded within individuals (Towse, 2006, p.17). Secondly, it is distinct from other forms of capital in that it is mutable (Schultz, 1961; cited in Higgins, 2019, p.29). The concept of mutability relates to the question whether human capital can be changed, i.e., enhanced or depreciated (Higgins, 2019). Schultz (1961) argue that both these are applicable to human capital, i.e., it can be increased or even decreased. Firstly, human capital can be enhanced by means of investment in formal schooling and workplace training (Becker, 1993; Schultz, 1961). According to Schultz, this is the main attribute that distinguishes human capital from other forms of capital.

On the contrary, Schultz (1961) argues that human capital can also depreciate. Two conditions are necessary for this to happen. The first is unemployment, a state wherein a person's skills lie idle over a period of time, causing human capital to deteriorate. For example, when acquired

skills are not applied over time, they become obsolete (Higgins, 2019). Secondly, a comparable situation occurs when there is technological development, wherein the demand for a particular occupation declines, rendering it completely redundant (Schultz, 1961; cited in Higgins, 2019, p.29). A typical example of this would be an occupation such as a blacksmith or carriage driver, which are rendered redundant owing to the introduction of automation (Higgins, 2019). Higgins (2019) cites similar occurrences of this in the information and communication technology (ICT) field, as a result of shifts away from mainframe computer systems, which led to changes in the type of programming skills required in IT occupations, shifting from COBOL to C++, SQL or Java.

Becker (1993, p.16) further differentiates between general and specific human capital. He describes general human capital as those skills that can be transferred from one organisation or industry to another. What this implies is that there are types skills and knowledge that can be acquired in one industry, and still be useful in another industry (Becker, 1993). In the labour market context, skills portability has two advantages, the first been for hiring purposes (Acemoglu & Pischke, 1998; Becker, 1962; Groot and van den Brink, 2000). Groot and van den Brink (2000) remark that skills portability manifests when employers base their hiring decisions on the job candidates' qualifications and previous work experience. Thus, as it relates to employment decisions making, Higgins (2019) argues that the portability of skills gives credence to the use of educational qualifications and previous work experience as criteria for making hiring decisions by managers. This further explains why this criteria is most commonly used for hiring new employees across different organisations.

The notion of skills portability also has implications for investment in education and training by both employers and employees. On the one hand, employers are reluctant to invest in general skills for fear of pouching by competitors. On the other hand, individual employees would prefer investing in these types of skills because they will increase their labour market mobility (Becker, 1962, 1964; Fleischhauer, 2007). As such, employees are more motivated to finance their own training, and then use this to justify the demand for higher earnings in different organisations (Galunic & Anderson, 2000; Nerdrum & Erikson, 2001).

In contrast to general human capital, Becker (1993, p. 17) defines specific human capital as skills that would not be useful when applied in other industries different from where they were acquired. Becker (1993) explains that this training is unique to a particular company's corporate culture, and may include induction of new staff into the company's policies, routines and

procedures, systems, as well as values and ethos. As such, Becker (1993) postulates that specific skills are not portable.

Lastly, an interesting feature of human capital raised by van Broekhuizen (2009) is that the concept is not the exclusive domain of HCT. He suggests that when viewed from the point of view that it encompasses all factors within an individual that affect productivity, then the concept of human capital is consistent with what is hypothesised by both human capital theory and sorting theories (p.6). This point is further explored later in this chapter, where I illustrate that the main area of contestation between the two theories lies specifically in the question of the mutability of human capital, meaning whether or not it can be enhanced through training, and if so, to what extent (van Broekhuizen, 2009). In the final analysis, Becker (1964) and Schultz (1961) argue that the economic logic of human capital is that when compared to physical capital, investments in both the general and specific skills have a long-term economic value. In the next sub-section I discuss the main claims of human capital theory.

2.2.1.2 The main claims made by the HCT

The main claim of human capital theory is that education equips workers with the skills and knowledge that directly increase their level of workplace productivity, as well as their future earnings potential (Becker, 1962; Mincer, 1958; Schultz, 1961). Becker (Becker, 1962, 1964, 1994) proposes a direct and linear causal relationship model to explain how education affects the labour market outcomes. Lal Grero (2019) provides a simple illustration of this relationship as follows:

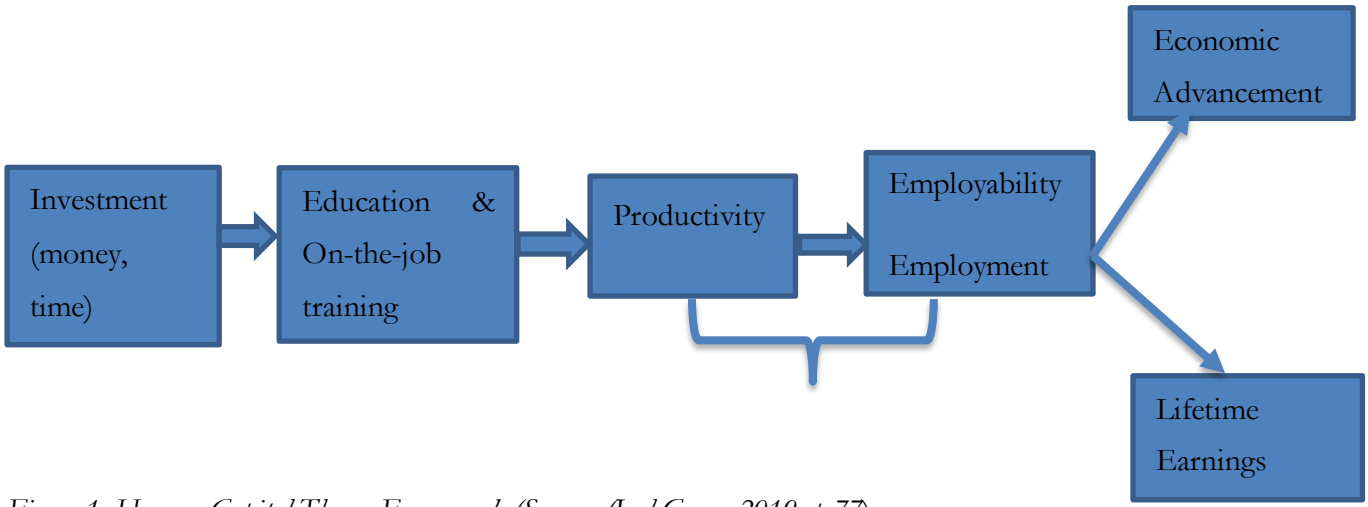

Figure 1: Human Capital Theory Framework (Source: (Lal Grero, 2019, p.77)

According to this model, individuals invest time and money in formal education and on-the-job-training to acquire skills and knowledge, which directly affects their productivity, and improves their chances of securing employment, personal advancement and lifetime earnings (Rafiq et al., 2019, p.2692). Following this argument, education affects three main labour market outcomes, namely: productivity, employability and lifetime earnings (Becker, 1964). Becker (1964) also maintains that the more efficient and individuals is at learning (i.e., the more intelligent ones), the quicker and more strongly they respond to this incentive, meaning that they are able to acquire more qualifications faster, or in a short period of time, thereby improving their productivity levels, which in turn earn them the most lucrative job opportunities in the job market. According to Becker (1964), this factor suggests that graduates are more efficient and trainable, an attribute that is also more attractive to employers, and shortens the time it takes for graduates to secure employment when compared to non-graduates.

The central argument of human capital theory therefore is that schooling directly affects worker productivity, in the sense that the resultant skills and knowledge are valued in the marketplace, guaranteeing them employment and higher earnings (Rospigliosi et al., 2014; van Broekhuizen, 2009; Van der Merwe, 2010). This idea is substantiated by Cole et.al (2004), whose study examined employers' perceptions of recent graduates' employability based on their qualifications, experience and extracurricular activities. This study found that there was a positive correlation between the recruiters' ratings of graduates' employability in relation to their qualifications and extracurricular activities. Furthermore, the same study found that the recruiter's perception of the graduate's employability prospect, was strongly related to the graduates' possession of some form of academic qualifications (Cole et al., 2004). Consistent with this argument, Raffe (2007, cited in Allais and Nathan, 2014, p.107), argues that there are strong linkages between education and work.

Furthermore, this relationship is argued to be more pronounced in vocational occupations. For example, Blommaert et. al. (2020) remark that graduates with vocationally specific qualifications are able to better elicit their productivity. They argue that because of their vocational training orientation, these graduates find employment quicker than those who possess more general qualifications (Blommaert et al., 2020). In concert with Blommaert and his colleagues, Allais and Nathan (2014) argue that this often happens in countries with strong institutional complementarities, i.e., where employers strongly collaborate with education and training institutions and trade unions) in the development of learning programmes. In this way, skills that

are developed in vocational programmes reflect employer needs, and makes it easy for graduates in these programmes to be recruited for jobs in similar occupations (Allais & Nathan, 2014)

Within the South African context, this idea was supported by Moleke (2005; cited in Van der Merwe, 2010) who found that, there was a more rapid labour market uptake of graduates in greater professionally focussed fields such as commerce, natural and medical sciences as well as engineering, when compared to the more general fields of knowledge such as humanities. Similar to Blommaert et al. (2020), she speculates that this may be explained by perceptions that commerce and science graduates offer capabilities required by employers. Van der Merwe (2010) suggests that if this argument holds true, then it means that qualifications, in most circumstances, are the pre-eminent criterion for graduate employment. Furthermore, holders of higher educational qualifications were found to experience lower unemployment internationally, relative to those without such credentials (Van der Merwe, 2010). In concert with this view, Moleke (2005; cited in Van der Merwe, 2010) found that graduate unemployment was lower in relation to overall rate of unemployment and that over 60% of graduates found permanent employment in jobs matching their field of study. This idea is further supported by Blommaert et al. (2020) who contend that possession of vocationally specific qualifications reduces the risk of unemployment and positively affect the process of job matching.

The second claim of human capital theory is that education affects individual's earnings in the labour market (Becker, 1964; Mincer, 1958). For instance, Mincer (1958) theorised that on-the-job experience contributes to a rise in earnings. Furthermore, Hanushek and Woessmann (2008, p.615) and Mincer (1958) found that an additional year of schooling will yields an increase in the percentage of annual earnings (Hanushek & Woessmann, 2008, p. 615; Mincer, 1958). In fact, Hanushek and Woessmann (2008) estimate that the rate of return to a year's earnings is 10% relative to the scarcity of individuals with various levels of education. In concert with Mincer and Hanushek and Woessmann, Higgins (2019, p.31) concur that one of the consequences of increased skills base, is relative to low effects on individual salary scales. Mincer (1958) introduced the standard human capital earnings function which became the measurement of lifetime income and wealth. In this regard, classical human capital theory suggests that those who invest in schooling and training are strategically calculating their capital which will in turn lead to higher income, evidenced by graduates' higher earnings as compared to their non-graduate counterparts (Spring, 2018).

In summary, the main take away point from this discussion on human capital theory is that education strongly affects the job market outcomes such as employability, earnings potential and productivity. Human capital theory claims that this relationship is linear in character, with causality flowing from education to productivity, and then to higher earnings (van Broekhuizen, 2009). According to van Broekhuizen (2009), this is the major area of contestation between human capital theory and other theories examined in this study, i.e., sorting theories and credentialism theory, as demonstrated later in this chapter. In the next section, I highlight some criticisms levelled against the human capital theory's hypothesis, and examine the sorting (screening and signalling) theories and credentialism theory which provide an alternative explanation of how educational qualifications affect labour market outcomes.

2.2.1.3 Some critiques and limitations of Human Capital Theory

Even though it is credited as being the dominant theory for explaining labour market returns to education (Walters, 2004), human capital theory has not escaped scrutiny and has attracted much criticism from various quarters. This section analyses some of the criticisms against human capital theory. Firstly, Hanushek and Woessmann (2008) contend that skill acquisition cannot be measured by simply counting the number of years one has spent in school. They argue instead that schooling success should be measured by the quality of what has been learnt, reflected by the cognitive skills that an individual has acquired in learning. This critique was necessary for understanding employer perceptions of what constitutes quality education, whether this was measured in terms of the content of qualifications being studied, or even institutions where their qualification was obtained.

Secondly, Brown et. al (2020) challenge human capital theory on two grounds. They first challenge the suggestion that education makes people productive. They argue that employers may interpret qualifications as representing other things than productivity, such motivation, resilience and dependability (Brown et al., 2020, p.76). In concert with Brown and his colleagues, Moodie et. al., (2019) argue that human capital theory fails to fully explain how qualifications are used by employers in the workplace. They argue that the graduates' higher earnings can be attributed to their other abilities independent of what they have learnt in education. Similar to Moodie et.al., Rosenbaum (1986) challenges the theory on the basis that it fails to explain why individuals with high qualifications do not always find their way in high positions in job hierarchies. Another point they raise is that qualifications do not explain the phenomenon of skills mismatches, where graduates become employed in fields that do not match their

qualifications (Moodie et al., 2019; Moodie & Wheelahan, 2018). The second ground upon which Brown and colleagues challenge human capital theory is the narrowness with which the theory views the labour market. Human capital theory assumes a linear causal relationship where an acquisition of a qualification leads to productivity and then higher earnings in the workplace (Fix, 2018, p.16), and therefore suggest guaranteed entrance into the workforce.

Brown et al., (2020, p.2-3) contend that this assumption does not take cognisance of the current labour market dynamics, characterised by steep global competition, emergence of modern technologies and economic inequalities, all of which create scarcity of both jobs, skilled and qualified labour. In this sense, they argue that the theory does not fully explain the phenomenon of graduate unemployment. Livingstone (2012) argues that failure to account for graduate's unemployment is the biggest limitation of human capital theory, a notion that flies in the face of the theory's claim that education enhances one's chances of securing employment. This particular limitation may significantly influence how employers view qualifications. Thirdly, Moodie et al (2019) critique human capital theory on the ground that it does not recognise education's externalities, such as social benefits which are not related to employment. One of the most important roles of educational attainment is arguably its impact on individual and social welfare (Moses, 2011, p.3). The higher social capital gained from acquiring education enables graduates to easily integrate in society and to participate in civic and political activities, including other benefits such as better health outcomes, reduced fertility and crime levels (Moodie et al., 2019; Moses, 2011; Psacharopoulos, 1994).

Furthermore, human capital theory is criticised for its narrowness in assuming a causal relationship that investments in education increases the worker's knowledge, skills and productivity, which leads to lifetime higher earnings, without taking cognisance of other human attributes like intellect, which is difficult to estimate, into consideration (Gao, 2015, p.41). Moodie et.al., (2019) argue that human capital theory does not account for other qualities developed in graduates through participation in extra-curricular activities, which are not necessarily required for work. Over and above these contestations, the theory also receives criticism on a number of other fronts. For instance, Fix (2018) challenges the theory's productivity income logic, and argue that productivity is more of a social rather than individual trait, because when objectively estimated, connection between productivity and income is weak given that observed levels of income inequalities cannot be fully explained by the small differences between workers (Fix, 2018).

Furthermore, Rosenbaum (1986) finds it curious that the theory perceives the measurement of ability as a trivial challenge. One of the fault lines he finds in the theory is that whilst it accentuates ability as its central argument, it fails to operationalise or even define it, conveniently assuming that it can be evaluated with ease by managers, as evidenced by extant literature (p.164). Bowles and Gintis (1975) bring a Marxist perspective to the debate. They criticise human capital theory on the grounds that it categorises labour as a commodity and not as active agents in the production process (p.75). They also argue that theory disregards the significance of social class differences when trying to explain the labour market phenomenon (p.75). Furthermore, they argue that education occurs within social contexts, wherein social relations determine how students are being prepared for future positions they will occupy in the workplace (Bowles and Gintis,1976). In this regard, they argue that the schooling system, through its different socialisation patterns, reinforces hierarchical divisions of labour based on social class (Bowles & Gintis, 1976).

Lastly, as I have demonstrated later in this chapter, this argument resonates with views presented by the sorting theories, particularly signalling theory. For instance, Spence (1973) contends the idea that worker productivity is a direct result of educational attainment. He instead content that at best, educational attainment is a strong signal of the worker's valuable productivity related attributes such as resilience, motivation, general aptitude and application, which are attractive to employers. According to this argument, these abilities signal potential for labour market productivity. Consistent with this view, Bills (2003), while conceding that education still adds substantially to graduates' productivity, argues that some of the returns on investment in education are owing to its 'sheepskin effect,' described as the notion that possession of an academic qualification such as a degree or diploma gives an individual an advantage of earning better than someone who only has one year of schooling (p.452). In light of these criticisms and limitations, I found it prudent to explore alternative assumptions that help to elucidate the intricate and complex correlation between education and the job market outcomes. This study confines itself to the analysis of two more theories in this regard, namely, the sorting (i.e., screening and signalling) theories and the credentialism theory.

These theories refutes the idea that worker productivity has anything to do with their earnings potential, but instead argue that employers offer higher earnings in a quest to attract and retain highly skilled and educated workers (Benson, 1978; cited in Gao, 2015, p.41). Despite its criticism and limitations, human capital theory still remains the bedrock of much research within

the field of economics of education (Gao, 2015, p.41). As such, despite a barrage of criticism against it, Gao (2015) suggests that the theory will remain a critical template for analysing an array of educational topics and policies that facilitates the clearer understanding how educational choices are made, assessed and their implications.

Lastly, it is important to also highlight that the alternative theories analysed here, do not in any way disregard the importance of human capital theory as a foundational frame of analysis for understanding the economic role and benefit of education, but they instead highlight theoretical, logical and practical fissures that constrain the application of the theory in real life situations.

2.2.2 SORTING (SCREENING AND SIGNALLING) THEORIES

Screening and signalling theories, collectively termed the sorting models of education (Weiss, 1995, p.133), fall within the second category of theories classified as the positional good perspective (Kasika, 2015). Founded by Arrow (1973), Spence (1973), and Stiglitz (1975), sorting theories provide the second main explanation of the economic return to education. Screening and signalling theories are opposite sides of the same coin, and hypothesize that labour markets are imperfect and beset with information asymmetries. On the one side of the coin, Spence's (1973, p.355) signalling theory provides that stakeholders use signals to reduce information asymmetries. This happens when market actors who are better informed (usually job seekers) take the first step by signalling information (often about their not directly observable characteristics) to the less informed party (employers). On the flip side of the coin, employers equally react to imperfect information by using the screening mechanism to determine the quality of job applicants (Arrow, 1973; Stiglitz, 1975). According to Annen (2021, p.7), in the signalling model, job seekers act first, and in the screening model, employers do. Annen (2021, p.7) depicts a simple illustration of the signalling and screening models as follows:

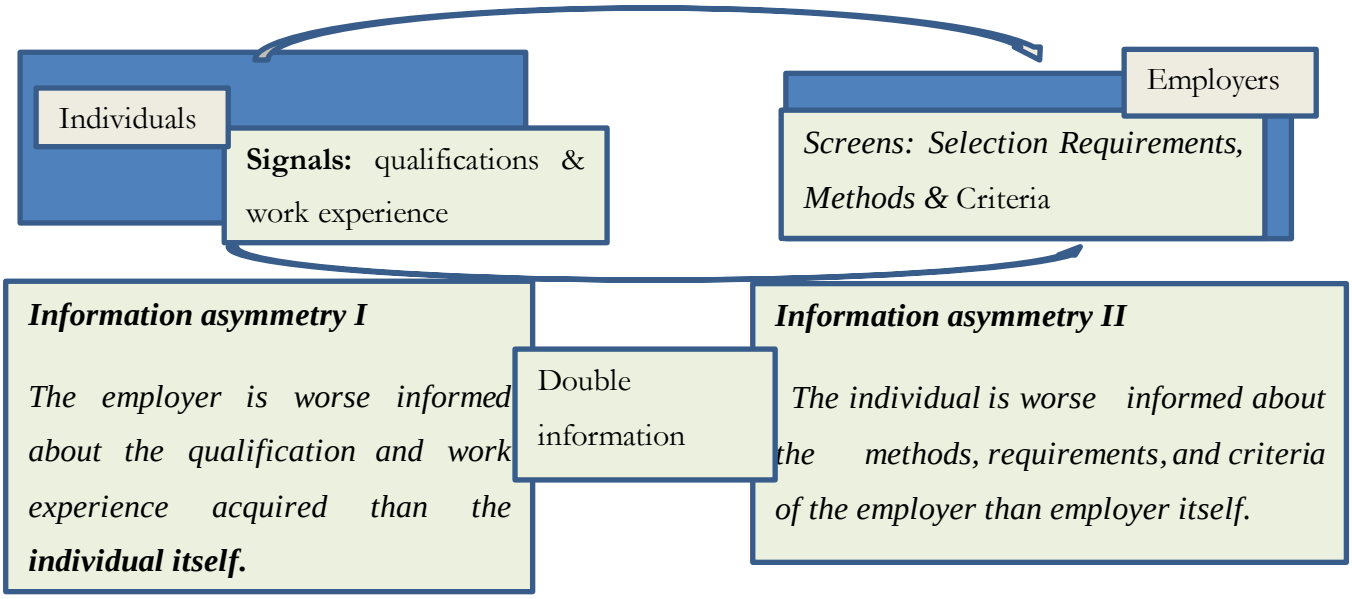

Figure 2: The Screening and Signalling Model (Source: Annen, 2021, p.7)

The core argument of the sorting theories is that employers are neither certain nor aware of the potential employee's marginal productivity at the point of hiring (Spence, 1973, p.351). According to these theories, employers cannot vouch for the knowledge or skills that employees bring to the workplace, or even confirm which of these will influence their levels of productivity (Spence, 1973). As such, to make inferences about the candidates' potential productivity levels, employers scrutinise employee characteristics to look for certain behavioural cues that may signal such productivity instincts (Spence,1973). Accordingly, employee characteristics such as educational qualifications may be sufficient cues signalling the likely value addition of the employee to the employer (Kasika, 2015). According to Kasika (2015), university degrees can provide information about plausible productivity of anyone who holds them. In this regard, qualifications are used by employers to screen employees and make estimations of their possible productivity (Arrow, 1973; Thurow, 1976). Furthermore, Thurow (1976) maintains that when screening qualifications, employers do not only seek to estimate employee productivity, but more importantly, seek to determine the costs associated with the training that will be required by the new hireling.

Thurow (1976) developed a job competition model, wherein he explains that job selection and allocation are determined on the basis of available job vacancies, and the complexity of available jobs. According to Thurow (1976), the most complex jobs in the labour market are allocated to the highest qualified individuals as a way of reducing subsequent training costs. This point

supports the view that education is a positional good, meaning that an individual's position or rank in the qualifications queue, determines the complexity and level of remuneration of the job they obtain in the market (Wolbers, 2007b). Based on this rationale, Weiss (1995) termed the screening and signalling theories the sorting models of education. Furthermore, this argument buttress the idea that qualifications primarily do not affect or reveal an individual's productivity, but instead sort them out according to their inherent characteristics (Kasika, 2015). According to Kasika (2015, p.13), these include characteristics such as perseverance, intelligence or motivation (already possessed even before entering school), which are not affected by schooling; as well as those they obtained in school, such as knowledge and skills. This, according to Kasika (2015, p.13) implies that education is a positional good.

Sorting theories are premised on a number of assumptions, three of which are relevant to this study. Firstly, the theories argue that the labour market is beset with information asymmetry (Spence, 1973, p. 356). On the one side, employers do not certainly know the marginal productivity of potential employees, except only for what they can infer from their qualifications. On the flip side, job seekers on their part, know fully what their skills levels are (Spence, 1973). Spence (1973) equates the hiring process to the game of lottery, what he terms 'procurement under uncertainty.' To resolve this conundrum, both employers and job seekers use educational qualifications to reduce lop-sided flow of information that inhibits the employer's ability to make informed selection decisions (Spence, 1973). From the signalling perspective, qualifications at best only signal or predict the possibility of potential productivity, not a certainty thereof (Spence, 1973). It follows then that employers only use educational qualifications to make inferences about workers' potential productivity (Hung & Ramsden, 2021), rendering qualifications as a signalling and screening device to predict productivity.

Secondly, the sorting theories assume that inherently, people possess varying degrees of workplace proficiency, which is not caused by their level of educational attainment, but instead revealed by it (Connelly et al., 2011). According to Weiss (1995, p.133 and 141), these include dispositions and habits such as perseverance, motivation and superior intelligence, all of which are preferred by employers. As opposed to human capital theory, the sorting theories contend that education does not directly affect productivity, but reveals the individual's efficiency in learning, which is positively correlated with productivity (Graetz, 2017, p.2). What this implies is that fast learners acquire more qualifications easily, which signals their ability and propensity to learn (Graetz, 2017; Hung & Ramsden, 2021). For the mere fact that at the point of hiring,

employers cannot directly determine the prospective employee's level of productivity, they instead rely on the signals and cues, such as qualifications to make inferences about possible productivity, estimate commensurate wage levels, and make selection decisions (Hung & Ramsden (2021, p.4). From this point of view, possession of more qualifications is regarded as a superior signal of productivity (Graetz, 2017). However, Hung and Ramsden (2021) argue that for this supposition to obtain, more individuals who are productive must elect to obtain more qualifications.

Thirdly, sorting theories also assume that more schooling attracts more costs, and that this affects low and highly productive workers differently (Thurow, 1976). What this implies is that individuals who are more intelligent, will be more inclined to acquire higher levels of qualifications as a way of signalling their productive prowess to employers, when compared to their less talented counterparts. (Spence, 1973). In essence therefore, the argument here is that education functions more like signpost for signalling ability, as opposed to increasing an individual's actual level of skills (Spence,1973; Stiglitz, 1975). Within the labour market, qualifications are used by both employers and job seekers as a screening and signalling device (Bills, 2003, p.445). Simply put, van Broekhuizen (2009, p.5) surmises that the main contention of the sorting theories is that the primary function of schooling is to reveal the innate – productive qualities of job seekers to employers in the labour market. Consistent with the preceding assumptions, sorting theories are presented as the fiercest criticism of human capital theory (Sobel, 1982).

In essence, soring theories challenges the basic preconception upon which human capital theory is predicated, which Sobel (1982) calls the human capital "transmission belt," i.e., the education – productivity and earnings causality rationale. For instance, the strong version of the screening theory views qualifications exclusively as a signal of ability, which has absolutely no effect on the productivity levels of anyone who acquires them (Bills, 2003, p.445). In the same vein, van Broekhuizen (2009, p.5) adds that productivity is an entirely innate attribute that is immutable, making education's only function that of revealing this to employers. However, Koch and Ntege (2008) concede that the screening process can perfectly reveal information about productivity, necessitating no need for employers to first have to learn to know the employee in order to identify their productive potential. A weaker version of screening theory argues that the screening process cannot readily reveal information about productivity (Koch & Ntege, 2008). This view is consistent with Spence's (1973) argument that employers cannot certainly screen

and know if the prospective employee is productive or not, despite information about their qualifications contained in the CVs. Spence (1973) argue that it takes time to learn the job, as well as to learn the productive capabilities required to do and master the job (p. 356); which makes employer learning necessary. This supports the sorting theories' rationale that qualifications can only be used as proxies to productivity or potential, but not as certainly representing productivity because the enhancement of one's skills through learning does not directly affect their labour market productivity (Bills, 2003).

In this regard, what fundamentally differentiates the sorting theories from human capital theory is predicated on the assumption that education is responsible for equipping individuals with knowledge and skills which ultimately enhance their productivity, whereas the sorting theories are predicated on the assumption that education only reveals the individual's inherent abilities associated with productivity (Kasika, 2015). With the sorting theories, focus is given more to an individual's relative position, and the training costs that are associated with hiring an individual who holds certain qualifications (Thurow, 1976). To this extent, Thurow's (1976, p.77) job competition model suggests that the marginal product exist in the job and not in the incumbent. The main difference here is that within the human capital theory, productivity is connected to the job incumbent, whereas in the sorting theories' perspective, it is more connected to the job, rather than the individual (Kasika, 2015, p.13).

Despite its sharp contrast to human capital theory's education-productivity causality rationale, Weiss (1995, p.134) contends that the sorting theories and human capital theory are not completely irreconcilable. Both theories predict a positive correlation between education and earnings, and between schooling and skills indicators such as intelligence quotient (IQ) (Graetz, 2017, p.2). According to Weiss (1995), the only difference between the two theories arises because the sorting theories allow for some productivity differences that employers do not attribute to be directly related to schooling (p.134). In this sense, Weiss (1995) sees the sorting theories as an expansion of human capital theory. For instance, when compared to the sorting theories, human capital theory on the one hand is more preoccupied with the effect of learning on the return to schooling. On the other hand, the sorting theories, although they recognise the need for learning, are more focused on how schooling serves to differentiate individuals according to their capabilities, which employers cannot directly reward (van Broekhuizen, 2009; Weiss, 1995).

Secondly, the sorting theories acknowledge that individuals inherently possess some form human capital, which is immutable (Weiss, 1995, p.134), and that it shares some commonalities with human capital theory. For instance, where human capital allows for the expansion of productivity through education, the sorting theories' main contention is that there are many productivity-related attributes which cannot be readily observed by employers at the point of hiring, which are not enhanced by, but are correlated with the education process (Weiss, 1995,p.135). Van Broekhuizen (2009, p.6) identifies among such attributes a lower propensity to quit, strong self-motivation and drive, the ability to deal with abstract and complex information and concepts, emotional maturity and ability to work well under pressure. Furthermore, van Broekhuizen (2009) argue that all these have a significant bearing on productivity and are all especially important for employers (p.6). Consistent with this point of view, Weiss (1995) and van Broekhuizen (2009) argue that workers choose the length of schooling to acquire the highest possible qualifications in order to raise their prospect of employment and earnings. Employers on the contrary, set minimum qualification requirements, and use possession of superior levels of education to screen the worker's potential ability (Weiss, 1995; van Broekhuizen, 2009). Thus Weiss (1995) conclude that the screening and signalling theories both function as sorting devices, used to categorize individuals according to their unobservable capabilities.

2.2.3 CREDENTIALISM THEORY

Credentialism theory is rooted in Weberian (1922, 1978) stratification analysis (Berg, 1970; Collins, 1979; Thurow, 1970). The theory falls within the social closure perspective (Kasika, 2015). According to this perspective, formal qualifications that individuals possess determine their access to rewarding positions in the job market and allocation to social status (Bol, 2018, p.2). The core argument of this theory is that qualifications entrenches social class differences in society (Collins, 1979). According to credentialism, education affects wages because educational credentials such as degrees and diplomas are used to determine who gets well-paying jobs in the labour market, thus controlling individual's access to elite professions associated with high social status (Berg, 1970; Collins, 1979). Therefore, the basis of social closure is that of gatekeeping, i.e., monopolising access to resources and rewards by individuals with high social status, at the expense of low social status class (Kasika, 2015, p. 14).

Within the credentialism perspective, qualifications are a form of exclusion because by demanding formal qualification, employers are actually controlling entry into privileged job

positions in the labour market (Kasika, 2015). For instance, Bowles and Gintis (2002) argue that career success of the highly educated cannot exclusively be attributed to their productive and cognitive capacities, but rather more to the aspect of the educational system that produces workers with incentive - enhancing preferences that give the employer more authority such as subservience, compliance and future orientation. Buttressing the idea of education as a means of social closure, Bills et al. (2017, p.194) and Collins (1979, p.9) argue that the wages associated with certain educational levels in the job market, are not necessarily linked to the skills the individual job incumbents have acquired, but rather shows that educational level is an artificial stratagem for monopolising entrance into high paying jobs and professions.

Consistent with the foregoing argument, Collins (2019) argue that people acquire educational qualifications for two reasons, firstly to gain access into elite professions such as medicine and engineering, whose entry is regulated through the use of credentials (Abbott, 1988; Milian et al., 2020); and secondly, to gain competitive edge in procuring good and better paying jobs in the highly competitive labour market (Collins, 1979). Milian, et al. (2020) attribute the expansion of post-secondary education to this phenomenon. In this way, credentials are used as a gatekeeping mechanism to managing entrance into lucrative jobs (Bills, 2003; Collins, 1979). Accordingly, when lucrative and better paying jobs are allocated in the job market to the highly educated during the hiring process, this is not because they are more productive or skilled, but because their high qualifications fits them into a particular social class (Bills, 2003; Collins, 2011).

Similar to human capital theory and sorting theories, proponents of credentialism (Berg, 1970; Collins, 1979; Thurow, 1970) also explain that education is positively related to wages. The theory postulates that the average wage increases with each year of education, with individuals holding a college degree getting a higher return in the job market (Bol, 2018). In contrast to human capital theory, credentialism highlights what it deems as a loose connection between education and workplace productivity (Bills, 2003). The theory does not associate the acquisition of educational qualifications with the quest to acquire more skills or become more productive in the workplace (Bills, 2003), but rather deems it as a response to labour market demand and supply dynamics which results in increased supply of educated labour (Brown, 2001). When viewed from this perspective, the role of qualifications and grades is that of social categorisation, wherein credentials are viewed as a positional good, giving those who hold them an advantage queue for jobs (Bills, 2003; Brown, 2001).

Lastly, the credentialism perspective contends that companies use educational qualifications differently to respond to the business cycle the company is traversing at a particular point in time (Smyth & McCoy, 2011). For instance, Smyth and McCoy (2011) identify two elements of education which are used differently as signals by employers. These are qualification level and test scores. For example, they argue that during times of economic expansion, only qualification levels are relied upon by employers to signal ability, however, during periods of economic contraction when employment opportunities are fewer, more stricter criteria such as test scores in specific modules may be adopted by employers as a fine comb to screen the most suitable job candidate (p. 92).

Having analysed these three theoretical perspectives on how education affects labour market outcomes, and how educational qualifications are perceived, interpreted and used by both employers and job seekers, the next sub-section focuses on the hiring process, which is necessary to further explicate the criteria used by employers during the hiring process, of which educational qualifications are amongst the most important. This process provides more light into understanding the meanings employers attach to qualifications.

2.3 THE HIRING PROCESS

Differences in how jobs are allocated in the job market have been the focus of much social and economic research, and have been explained from various perspectives (Higgins, 2019). This necessitates a brief reflection on the hiring process as a phenomenon, because as Rivera (2012, p.999) notes, hiring transcends just the sorting of skills, because the decision to hire is the most crucial moment in the labour market stratification. In the same vein, Bills (2003, p.442) notes that at the end of the day, securing a job or achieving a professional status are both dependent on the hiring decision. All the three theories analysed so far converge on one important point, which is that possession of an educational qualification has significant implications for the possibility of finding a job (Bills, 2004; van de Werfhorst, 2011; Wolbers, 2007a). All the three theoretical accounts identify a positive correlation between educational qualifications with earnings (Bol, 2018, p.4). Human capital theory is premised on the assumption that the companies competitive advantage and organisational success rests on the ability of individuals to deploy their shared skills, abilities and experience, in the interest of their employing organisation (Armstrong, 2006).

In view of this, proponents of the theory argue that differences in people's skills levels, are largely responsible for different ways in which jobs are allocated (Becker, 1962). This resonates with the popular maxim in management literature that 'an organization is as good as its people,' and explains the importance of the selection function in the process of making hiring decisions, where the best person-organisation fit has to be achieved (Hilal et al., 2017). Unfortunately, very little is understood about the individual qualities which are available to employers during the initial job selection process. This prompted me to foreground the selection criteria employers follow during the hiring process in the next sub-section, with a particular focus on understanding the meanings employers attach to qualifications when hiring engineering professionals.

2.3.1 Employee selection

Employee selection is one of the strategic domains of human capital and talent management (Gamage, 2014). Gamage defines employee selection as the process through which choices are made about the most suitable job candidate from a pool of applicants recruited to fill a job vacancy. The main aim of the selection function is to identify the person that best fits the available vacant position (Gamage, 2014). The process utilizes various methods and criteria to evaluate the fitness of available candidates to make the correct selection decision (Ekwoaba et al., 2015). Higgins (2019) suggests that selection systems are intentionally selective in nature, enabling the employer to assess differences among applicants, in order to arrive at the best selection decision. (Higgins, 2019). According to Spence (1973), the hiring process is tantamount to investment under uncertainty, as a result of the imperfect labour information available to the employer at the time of hiring.

2.3.2 Selection Criteria

Research in industrial and organisational psychology has identified elements in the labour market which are useful for predicting worker performance and job outcomes (Ekwoaba et al., 2015; Higgins, 2019). These factors are often deployed in the selection process as criteria for selecting the most suitable candidates, and include among others, educational qualifications, previous work experience, general cognitive ability, behavioural traits, and different forms of suitability (Higgins, 2019). This focus of this was to understand how educational qualifications influences employer hiring decisions. In this regard, examining the selection process will be key in uncovering the employers' perspective on how the hiring process is influenced by the individual's human capital related attributes. Following is the description of the factors comprising the selection criteria, which are the role of educational qualifications (i.e., degrees and

diplomas), previous work experience, general cognitive ability, personality factors and diverse types of fit. It is important to examine qualifications first, as educational qualifications are regarded as a multi-faceted hiring criterion that precede all other criteria.

2.3.2.1 The role of educational qualifications (i.e., degrees and diplomas)

Among its many claims, human capital theory suggest that acquisition of educational qualifications improves one's chances of securing employment (Becker, 1964). According to Baker (2011), the theory explains three important uses of qualifications. Firstly, it explains why qualifications (e.g., degrees and diplomas) are used to allocate individuals in the labour market; secondly, it explains that qualifications are used as job entrance requirements throughout occupational structures. In the same vein, Ng and Feldman (2009, cited in Higgins, 2019) accentuates qualifications as the topmost candidate screening criterion during the selection process. Typically, schooling is considered and estimated in terms of qualification level, and is expressed in the form of degrees, diplomas and certificates acquired by job applicants (Higgins, 2019). Thirdly, higher education primarily serves as preparation for work and career (Baker, 2011; Hodgson, 2014). In this regard, Hodgson (2014) elevates education as an important economic arbiter and contends that it is the initial explanation for career success and earnings potential.

The preceding argument explains why employers use education level as a proxy for cognitive ability, which according to Hanushek and Woessmann (2008), is a significant measure of skills level, as well as an indicator for motivation, and potential productivity (Ballafkih, 2017; Higgins, 2019). Moreover, the field of study may be an indicator of specialisation associated with certain jobs, as it is the case in fields such medicine and engineering (Ballafkih, 2017). In addition to qualifications, indicators such as grades are also used by employers as filters to screen productive employees (Ballafkih, 2017). Therefore, when employing educational level as a selection criterion, employers use a number of constructs, such as the applicant's ability to learn, motivation, critical thinking skills, and willingness to take initiatives and sustain work-related behaviours (Higgins, 2019). Highly educated individuals are therefore mostly preferred by employers as they are believed to possess these qualities (Becker, 1962).

Finally, because of their perceived reliability as signals of human capital, employers often correlate qualifications such as degrees and diplomas with compensation (Mincer, 1958). This makes education a prerequisite or screening criterion for employee selection (Ng & Feldman,

2009). Although qualifications are obtained from a number of sources such as university or college courses; vocational school courses; Ng and Feldman (2009) posit that the standard measurement of educational attainment is determined in terms of degrees or diplomas obtained by the job applicant. As Higgins (2019) observed, educational qualifications precedes all other criteria in the hiring process.

2.3.2.2 Previous Work Experience

Another form of human capital that is most commonly used as a selection criterion in the hiring process, particularly when filling positions at management levels, is work experience (Higgins, 2019). Work experience is preferred also because it is credited by employers for the creation of critical soft skills that are portable to other work environments (Ballafkih, 2017). What this means is that when recruiting individuals with previous work experience, employers are sure these will come equipped with a host of other skills that will add value to the bottom line. Together with cognitive ability, work experience is believed to be helpful for predicting future individual performance (Higgins (2019). Like educational qualifications, work experience is an important selection criterion in the hiring process, which represents the portfolio of knowledge and skills acquired over the candidate's career path (Brown & Campion, 1994). According to Humburg et al. (2013), previous work experience is particularly important to compensate for situations where a candidate's grades are lower than those required for the position advertised, or where the qualification held is not relevant for the position or industry.

2.3.2.3 General Cognitive Ability

According to Schmidt (2002, cited in Higgins, 2019), general cognitive ability is a skill that develops over time, and relates to one's aptitude for learning. According to Higgins (2019), general cognitive ability is an important construct that positively influence the acquisition of job knowledge, skills and motivation. Schmidt (2002, cited in Higgins, 2019) found general cognitive ability to have consistently predicted job performance across all jobs. This makes general cognitive ability another vigorous selection criterion, and can also estimate future performance.

2.3.2.4 Personality factors

Research evidence have also shown that behavioural attributes are used by employers to reduce counterproductive behaviour at work (Ballafkih, 2017; Higgins, 2019). Personality is defined by Higgins (2019, p.41) as the persistent and unique human characteristics that shapes and influence how an individual interacts with society or their surroundings. These unique qualities are also

regarded as useful for making forecasts about future job performance (Ballafkih, 2017). According to Ballafkih (2017), in the work environment, personality manifests in the form of traits such interpersonal relationships, exhibition of leadership abilities, teamwork and job satisfaction, among other things.

2.3.2.5 Fit

Higgins (2019, p. 43) identifies four forms of fit that employers considers when undertaking selection. Higgins (2019) suggest that the purpose of fit is to match the individual with the job, with supervisor, with the team and finally with the organisation. Within the context of the hiring process, fit is useful for estimating the extent to which an individual is compatible with the job, manager, teammates and company. According to Brown and Campion (1994), person-job fit relates to the individual's skills and knowledge which affects their performance on the job, whereas person-organisation fit relates to the extent to which the individual will remain devoted or loyal to the organisation, thus reducing their propensity to quit. On the other hand, person-group fit relates to the estimation of the level of teamwork, interpersonal interaction and team support that will affect job performance (Brown & Campion, 1994).

Fit has commonly been conceptualised and measured as the extent to which the applicant matches the job requirements in terms of organisational, supervisor and group values, skills and knowledge, behavioural attributes, as well as organisational climate and culture (Higgins, 2019).

2.3.3 Selection Methods

During the hiring process, employers deploy an array of approaches to collect and process an applicant's data necessary to help make proper hiring decisions (Brown & Campion, 1994). According to Knouse (1989), the principles of attribution theory are critical for understanding how applicants' biodata is evaluated by hiring managers. This theory suggests that for the application of a variety of selection techniques, such as resume screening, interviews, evaluation of recommendation letters, and applicant testing (Knouse, 1989). While there are a number of selection methods, of relevance to this study is resume screening, which is briefly discussed briefly below.

2.3.3.1 Resume (Curriculum Vitae) Screening

Resume (CV) screening is an important and often the starting point in the process of evaluating applications during the selection process (Brown & Campion, 1994; Cole et al., 2003a).

According to Cole et.al., (2004), the process of CV screening and reviewing often examines the extent to which an individual matches with the job, considering related job characteristics such as skills, required knowledge and educational expectations, among other things. Brown and Campion (1994) further note that in screening resumes, screeners (who are often human resource professionals or hiring managers), make inferences about the applicant's educational qualifications, in order to forecast future job performance. According to research, several applicant's characteristics (such as abilities, cooperation, conscientiousness, sociability, positive attitude, sincerity, trustworthiness, maturity, sense of humour, interests, and extracurricular activities) are valued by hiring managers when screening CVs (Brown & Campion, 1994).

In screening CVs, recruiters consider several issues such as qualifications and person-job fit, to make inferences about future job performance (Higgins, 2019). For example, possession of an accounting degree may suggest that an applicant has knowledge of accounting principles and may thus be successful as an auditor. Therefore, the CV screening process helps to shorten the list of applicants to a manageable size, by eliminating those who are regarded to not have the required qualities to perform the job (Brown & Campion, 1994). According to Russel (2007, cited in Higgins, 2019), resume screening may erroneously omit suitably qualified applicants, especially in situations where large volumes of applications are being reviewed. This is possible because once omitted from list, the application is never recovered.

In summary, it is apparent from the foregoing that the hiring process is a critical component of the human capital management function. This process is the critical link between companies and job seekers and attempts to determine the best fit between companies and individuals. The hiring process deploys several sub-processes, one of which is the selection process. This is described as the process by which an organisation attempts to make a selection of the most qualified candidate from the list of applicants in order to fill an existing job openings. To achieve its objective in finding the best person-organization fit, the selection process deploys various criteria and methods, which include qualifications, measures in general cognitive ability and personality factors. This is achieved by determining how the job candidate fit into the organisation by matching their qualities with those of the job, supervisor, peers and team. CV screening in this regard is found to be a very important method and the very first step in the selection process. CV screening is of particular importance for this study as it helps elucidate how employers use information about qualifications contained in the CV to make hiring decisions.

2.4 THEORETICAL AND ANALYTICAL FRAMEWORK

This section describes the theoretical and analytical framework underpinning this study, premised on the understanding that theoretical knowledge is critical for clarifying how education affect labour market outcomes.

2.4.1 Theoretical Framework

Grant and Osanloo (2014, p.13) describe a theoretical framework as 'a formal theory-based structure that guides research, designed through the use of clear and tested methods of explaining events and relationships among them. Concomitantly, the section also outlines the conceptual framework for this study.

In earlier discussion of the theories, I have illustrated how theories differ on the productive capacities associated with educational qualifications and have outlined three ways in which qualifications can affect performance. In the next sub-sections the theoretical framework underpinning this study is briefly described.

2.4.1.1 Human Capital Theory

Human capital theory falls within the group of theories categorised as productive skills theories. This theory posits that education makes people productive (Becker, 1993). The theory proposes a simple model to explain the labour market returns to education. It claims that educational level is positively correlated with earnings. It specifies a mechanism through which this correlation results and claims that schooling increases skills and knowledge which increase the worker's productive capacity. The theory claims that higher productivity in return is rewarded through higher earnings in the labour market (Becker, 1964; Mincer, 1974). The theory also claims that earnings are positively related to age, and argue that the older workers earn more than younger ones because they have acquired more on the job experience (Becker, 1964; Schultz, 1961). From this standpoint, it can be surmised that both schooling and workplace learning affects the worker's level of productivity (Becker, 1964).

From the foregoing, it is clear that because of the prospect of long term earnings potential is closely tied to educational attainment, individuals will continue schooling for as long as the rewards of education are more than its marginal costs (Mincer, 1974). Secondly, as Brunello and Rocco (2015, p.9) argue, the productive effect of education is more pronounced in vocational occupations such as engineering, wherein curriculum is designed to integrate theory and practice,

and thereby producing graduates who are more work ready. Brunello and Rocco (2015) ascribes this to the fact that the training of engineers and other vocational occupations incorporate a significant amount of practicals, simulations and on-the-job, all of which mimic the real world of work. This further lends credence to the argument that on-the-job-training, like education, makes people more productive. This productive-effect of education argument of the theory makes it particularly useful for understanding the meanings employers attach to educational qualifications during the hiring process (Hung & Ramsden, 2021, p.8). As Kasika (2015, p.16) notes, if the argument of human capital theory holds, then the coefficient of schooling predicted by Mincer's (1974) earnings function offers a good estimation of the effect of educational qualifications on worker efficiency and performance.

In this study, I have particularly tested this education-productivity rationale with the hiring of engineering professionals, classified as a regulated vocational occupation (Brunello & Rocco, 2015), to verify if indeed employers perceive engineering graduates as automatically productive, just by virtue of holding engineering qualifications. If the claim of the human capital holds true, then qualifications should be the main selection criterion when screening CV of engineering job applicants, when compared to other selection criteria.

2.4.1.2 Sorting (Screening and Signalling) theories

According to the sorting models of education, workers do not receive higher wages because they are necessarily more productive or have received valuable skills at school, but primarily because information about qualifications is used as a screening and signalling device to filter high quality workers from low-quality workers (Spence, 1973; Arrow, 1973). The main idea underlying these theories is that the worker's educational qualifications do not increase their productivity, but reveals an individual's inherent qualities that are not affected by schooling, which enhance productivity (Kasika, 2015, p.17). Weiss (1995, p. 134) argue that changes in the earnings of an individual who attends school for some time do not necessarily reflect how schooling has affected their productivity. Contrary to the human capital theory where productivity is connected to the individual job holder, within the sorting hypothesis, the marginal productivity is connected to the job. According to Thurow's (1976, p.77) job competition model, the marginal product resides with the job and not the employee. In this regard, Kasika (2015, p.17) suggests that if the argument of the signalling theory is correct, then the coefficient of education estimated by the earnings function may exaggerate the effect of schooling on productivity.

According to Kasika (2015), the signalling perspective does acknowledge that schooling has some effect on worker productivity, but denies that the idea that schooling is responsible for all of it. The argument here is that even though two people may obtain the same qualification, at the same level, they may not necessarily exhibit the same level of productivity. This is so because they may have been exposed to different environments which may affect how education enhances their productivity (Kasika, 2015). Going by this line of thinking, one can argue that the effects of schooling is dependent on the environment one is exposed to. Thus, the effect of education may be higher in dynamic and complex work environments because those with higher qualifications may be better able to understand and decode complex information, and access to information and modern technology.

Within the HRM environment, the screening and signalling theories are conceptualised to describe the process of hiring as relating to job seekers showcasing their qualifications to signal their ability to recruiters (Pernkopf et al., 2020; Twyman et al., 2020, p.850). Screening theory acknowledges qualifications as central to determining entry into the labour market, and are equally used by employers as minimum requirements for appointment (Arrow, 1973). In this study, the sorting theories were used to test whether employers of engineering professionals recruit them based only on their qualifications, or whether there are other factors that influence their hiring decisions.

2.4.1.3 Credentialism theory

Credentialism theory is rooted in the stratification model, and views formal qualifications as tools to regulate entrance to employment (Pfeffer & Skrivanek, 2018). The theory assumes that qualifications are used as a means for social classification to discriminate the highly educated from the less educated in allocating jobs and wages in the labour market (Bol, 2018, p.2). The central argument of the theory is that qualifications are used to establish distinctions between its holders and others, such as between specialists and regulars, for example, between doctors and patients (Pfeffer & Skrivanek, 2018). Used this way, qualifications then serve as a gatekeeping mechanism to control access into certain elite professions (e.g., such as engineering, medicine or law) whose entry is regulated through the use of credentials (Abbott, 1988; Bills, 2003; Collins, 1979; Milian et al., 2020).

According to the theory, formal qualifications are an essential prerequisite for recruitment and allocation of jobs in the labour market (Pfeffer & Skrivanek, 2018). Credentialism theory was used in this study to test if qualifications of engineering professionals were used by employers as

a way of gatekeeping mechanism, or whether employers believe their qualifications represent other things, such as productivity.

2.4.2 Analytical Framework

Coral and Bokelmann (2017, p.1) define an analytical framework as the framework that provides a glossary of terms and words necessary to convey and explain the types of relationships provided by a particular theory. This analytical framework describes key concepts drawn from the three theoretical models examined in this study. The main concepts described here include educational qualifications, worker productivity, screening and signalling potential, and gatekeeping.

2.4.2.1 Educational Qualifications (Degrees and Diplomas)

The concept qualification is defined by the South African Qualifications Authority (SAQA, 2000, p.8) as a blend of learning outcomes planned to develop a set of applied skills, designed to be learned over a period of time. Within the context of the South African National Qualifications Framework (NQF), qualifications are categorised into three major groups, namely: National Certificate which carries 120 or more credits; a National Diploma which bears 240 or more credits, and lastly an Undergraduate Degree which carries 360 credits (Samuels & Keevy, 2005b, p.3). According to SAQA (2000, p.22), to satisfy the requirements for registration on the NQF, a qualification must be approved and meet the needs of all major stakeholders. It follows from the above that qualifications, expressed in degrees, diplomas and certificates, are a direct result of investment in formal education (Samuels & Keevy, 2005).

Within the labour market context, extant literature is littered with evidence that formal schooling is closely associated with labour market outcomes, such as employability and earnings potential (van Broekhuizen, 2009, p.1). For instance, it is generally accepted that qualifications serve as an important prerequisite for appointment during the hiring process, with employers using them as minimum requirements when advertising to fill vacant positions (Becker, 1994; Collins, 1979; Spence, 1973). Despite this overwhelming evidence, there is no consensus on what educational qualifications actually represent from an employer's point of view.

Different theories offer different perspectives in this regard. Although human capital theory, the sorting theories and credentialism theory all acknowledge that there is a link between qualifications and earnings in the labour market, they do not agree on what employers read into qualifications when faced with the task of making hiring decisions. This concept is therefore

critical for this study as I need to examine the different meanings that employers attach to qualifications, which then influence their decisions to hire one applicant, and reject the other. In this regard, three sub-concepts, arising out of the three different theoretical perspectives underpinning this study, namely human capital theory, the sorting theories and credentialism theory (hereafter referred to as the theories), are discussed under qualifications to explain the three different perspectives on what qualifications represent to different employers.

2.4.2.2 Worker Productivity

The first sub-concept is (worker) productivity. Throughout this thesis, I have adopted Spence's (1973, p.361) definition of the concept productivity, described as 'what the individual is worth to the employer, based on what they are actually able to do.' This concept is of significance in this study because it is the axis around which contestations among the theories revolve, on what exactly do qualifications represent to the employers. Firstly, human capital theory associate qualifications with productivity, i.e., the workers' overall ability to perform a particular job-related task (Becker, 1964). Hanushek and Woessmann (2008) argue that when measured accurately, schooling success should be evaluated by the acquisition of cognitive skills, which further reflect the productive abilities of holders of qualification. Accordingly, Becker (2002, p.4) postulates that holders of higher educational qualifications are more productive, hence they are more preferred by employers, and usually attract more lucrative and better paying jobs in the market for jobs.

In the same vein, human capital theory postulates that human capital has spill-over effects, a phenomenon where the presence of a highly educated and skilled worker makes their co-workers more productive, which may result in co-workers' motivation to also acquire productive skills (such as communication) and behaviours to enhance their own productivity (Sun & Wang, 2014, p.160). Following the same rationale, individuals pursue the highest possible levels of qualifications to demonstrate their high productive capacity to employers, and use the premium of education to justify demand for high wages (Agwuocha, 2019; McConnell et al., 2009; Mincer, 1958; Schultz, 1961). Viewed from the human capital theory's perspective, employers allocate jobs to the highly qualified individuals because they are more capable to deliver results for their organisations.

2.4.2.3 Screening and signalling for potential

Contrary to human capital, the sorting theories argue that educational attainment does not directly affect people's productivity levels (Arrow, 1973; Spence, 1973). According to this rationale, people may illicit productive abilities not because they were obtained in education through schooling, but rather because they possess innate abilities, which are rather revealed by education, though not caused by it (Graetz, 2017, p.2). Sun and Wang (2014,p.161) elaborate that people may increase their productivity through investment in formal education in school and workplace learning activities. However, the potential productivity of a new hire is difficult to ascertain by those involved in the hiring process. Thus, while job applicants may acquire more qualifications to increase their proficiency levels, this improved productive capacity may not be immediately recognisable to the employer at the time of hiring (Spence, 1973; Sun & Wang, 2014).

In the context of this argument, qualifications are at best a screening and signalling device, through which individuals signal their potential to employers on the one hand; and on the other, employers screen qualifications to sort out the qualified from the unqualified (Arrow, 1973; Spence, 1973). In this case, employers on the one hand use qualifications to screen for potential productivity, whereas job seekers on the other use same to signal their potential (Arrow, 1973; Lofstrom, 2000; Spence, 1973). Screening theory suggests that qualifications are also used to screen for inborn qualities such as perseverance, motivation, and superior intelligence, all of which are preferred by employers (Arrow, 1973; Weiss, 1995, p.133 and 141). According to Sun and Wang (2014, p.163), job screening happens at two levels, firstly in screening for educational qualifications when CVs are evaluated, and secondly in on-the-job-screening. This second layer of screening happens after the actual hiring, wherein various tools such as performance appraisal and techniques are used to solicit additional information about the employee's productivity and performance. Decisions are then made on the interventions that must be given to the employee in cases where performance expectations are not met.

According to Thurow (1976), the screening process is also necessary to estimate and reduce possible training costs associated with new hires, which can be large if the newly hired fails to meet expectations (Sun & Wang, 2014, p.161). In this sense, the screening theory was developed to ease the potential financial burden of making well-informed staffing decisions (Sun & Wang, 2014). In line with the sorting theory's hypothesis, the concepts of screening and signalling for potential are thus used in this study to examine if qualifications are used by employers in hiring

decisions to determine potential, i.e., to identify the job seeker's innate abilities which signal productivity, or whether they believe the qualified are already productive as claimed by human capital theory.

2.4.2.4 Gatekeeping

Within the credentialism theory (Berg, 1970; Collins, 1971), qualifications have no effect on the individual's work proficiency levels. The theory postulates that credentials or formal qualifications only serve as a regulatory mechanism through which to determine who gets hired, and who does not (Pfeffer & Skrivanek, 2018). According to the proponents of the credentialism theory, qualifications are not related to skills or even productivity (Collins, 1979, p.21). Accordingly, this perspective argue that qualifications only serve as mechanisms for social closure, used as a means for legitimising social inclusion or exclusion (Bol, 2018, p.2). This manifests when the more advantaged groups in society use qualifications or other variables such as race and gender as a means of closing off opportunities to the less advantaged groups (Allais & Nathan, 2014, p.111). In this way, qualifications are used as a gatekeeping mechanism to control entry into certain elite professions (e.g., such as engineering, medicine, or law) whose entry is regulated (Abbott, 1988; Bills, 1988; Bol, 2018; Collins, 1979; Milian et al., 2020). The concept of gatekeeping is used in this study to establish if employers in their hiring decision making process ever use qualifications to control access to certain occupations such as engineering.

2.4.2.5 Previous Work Experience

Previous work experience is another variable of human capital that is most commonly used as a selection criterion in the hiring process, particularly when filling positions at management levels (Higgins, 2019). Employers regard work experience as being critical to for developing soft skills which are valuable and transferrable across industries (Ballafkih, 2017). Again, Allais and Nathan (2014, p.110) explain work experience within the context of a positional good, suggesting it gives one advantage over others in the job market. Thus, by preferring workers with more work experience, young people, regardless of holding requisite qualifications, are inadvertently relegated to low positions in queue (Allais & Nathan, 2014). According to Allais and Nathan (2014), by preferring experience over inexperience, employers are managing the potential hiring risk because experienced workers are a known quantity.

I have established earlier that work experience, like qualifications and general cognitive skills, is regarded as an accurate predictor of future performance (Higgins,2019). In this sense, previous work experience, similar to educational qualification, can be used to estimate a job candidate's knowledge and skills, hence it becomes the second most important selection criterion (Brown & Campion, 1994). According to Humburg et. al (2013), previous work experience is particularly important for compensating educational credentials, such as in situations where a candidate's qualifications, or test scores are lower than those required for the position advertised, or where the qualification held is not relevant for the position or industry. Lastly, work experience is argued to be critical for the development of soft skills, such as problem solving, communication, leadership, socialisation, and presentation skills, all which are preferred by employer (Ballafkih, 2017; Fadhil et al., 2021, p.257; Lok et al., 2021,p.384); and are considered critical success factors for management and leadership positions (Malik & Ahmad, 2020, p.1154).

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

This chapter describes the research design and methodology used in this study. According to Leedy (1997, p.195) a research design is a plan upon which the study is anchored, which outlines how the data will be collected. In order to answer the research questions, this plan must include decisions about the data collection procedures, research sites to be considered and the subjects of the research to be surveyed (MacMillan and Schumacher, 2001, p.166). According to Creswell (2007), the process starts with making philosophical assumptions that informs the rationale for the study. On the other hand, Schwardt (2007) defines a research methodology as the description of the principles and procedures to be followed in the study, and outlines the assumptions, analysis and theory of how an inquiry will proceed. Furthermore, the research method explains the research problem and determines whether it is worth researching, and outlines the research hypothesis and how it will be tested, as well as the design and the procedure suitable for collecting and analysing the data (Cresswell & Tashakkori, 2007; Schwardt, 2007; Teddie & Tashakkori, 2006).

This study has adopted the use of qualitative methods. Data were collected through the use of semi-structured focus group interviews. To support and enrich the study, hypothetical Curriculum Vitaes (Mock CVs) were utilized for the purpose of role playing a real live CV screening process, in order to improve our understanding of the lived experience of hiring

managers during the selection process. This was necessary to help understand what employers read into qualifications, in relation to other biodata included in the CVs.

3.2 QUALITATIVE RESEARCH APPROACH

Qualitative research methods allowed me to study the phenomenon of employee selection (i.e., the hiring process) in its natural setting, and for it to be interpreted in accordance to meanings that the hiring managers bring to it (Denzin, & Lincoln, 2005; Merriam, 1998). A descriptive phenomenology was particularly selected to gain insight into the lived experiences of the hiring process of study participants (Giorgi, 2009, p.127). The advantage of this method is that it afforded me the opportunity to gain deep and profound understanding of the employers' real-life experience when screening job applicant's CVs. The method also allowed for direct observation, interviewing, recording and documentation of participant's understanding and experiences of the hiring process (Hays & Wood, 2011; Leedy, 1997). In this way, I gained much understanding of employer perceptions about qualifications, and meanings they attach to them during hiring decision making process.

This process was enriched through the use of hypothetical CVs, the screening of which is the critical first step preceding the actual employee selection in the hiring process (Forsberg, 2016, p.1). Rightly as suggested by Cresswell (2013) and Worthen and Sanders (1987), the other benefit of this approach was that it allowed me to be at the centre of the data collection and analysis process. The research was approached with a completely open, receptive and naïve mindset which allowed participants to express their views and experiences with regard to screening of CVs. This was necessary to mitigate the risk of being tempted to bring personal biases into the study (Higgins, 2019, p.91; Creswell, 2013).

3.3 RESEARCH QUESTIONS

The main research question that this study attempted to answer was:

"What meanings do employers attach to qualifications in hiring decisions, and what do these meanings tell us about employers' hiring criteria of prospective employees?"

Three sub-questions that were asked in this study for additional inquiry were the following:

i. How does the screening of CVs/resumes fit into the overall hiring process?
ii. What criteria do hiring managers/officials employ when screening candidates' qualifications?

iii. Are these criteria the same when considering qualifications for different positions?

3.4 SAMPLING DESIGN AND SAMPLE SIZE

3.4.1 Sampling Design

Sampling methods are intended to maximise the efficiency and validity of a study (Patton, 2002). This study applied a non-probability sampling technique, which is recommended for studies that do not seek to generalise study results outside the study population been surveyed (Cohen et al., 2007). This technique allowed me to select and identify information-rich participants, who are both knowledgeable and experienced with the phenomenon of CV screening during the selection process (Cresswell & Plano Clark, 2011; Patton, 2002, p.230; Tongco, 2007). Using criterion sampling technique (Cresswell, 2013; Omona, 2013), I compiled a list of HR Executives in each of the companies being studied. I know these executives personally as I work closely with them in my work environment, wherein my department provides oversight over their companies. This was helpful as it made it easy for me to identify the participants and gave me easy access into the entities which are the subject of this research. These executives were very helpful in identifying and selecting a homogenous group of employees who are well-versed with the recruitment process. This method is described as the snowball technique (Noy, 2008; Omona, 2013, p.180). This technique is used when study participants are accessed through the help of third parties.

The following procedure was followed for selecting and inducting study participants:

i. I made contacts with the Group HR Executives in each of the four SOCs which were the subject of my study. These executives are based at the head offices of each of the SOCs. These professionals are the researcher's key stakeholders in his day-to-day job of oversight of the SOCs' learning and development functions. Therefore, these contacts have been established over the years of the researcher's career at the Department of Public Enterprises.
ii. Each of the contacts was requested to help nominate five (5) professionals who have experience of the hiring process within their organisation, both at head office and in different operating divisions (ODs).
iii. These identified groups of HR professionals were then written letters to invited them to take part in the study **(Appendix A: Invitation Letter)**.
iv. Initial telephone calls were made for introduction, screening, obtaining informed consent **(Appendix B: Informed Consent),** and induction into the study, and for

the planning of the study. Screening was necessary to ascertain that selected participants were suitable for inclusion in the study (e.g., experience in the screening of CVs in the recruitment of officials at both entry level as well as management level positions) in the study as participants.

v. At the conclusion of the interview process, participants were requested to recommend any other HR official in their company, who they knew would be willing to participate and add more value in the study. Steps 3 to 4 described earlier were then repeated in cases where additional names of participants were suggested.

3.4.2 Sampling Size

Sample sizes in qualitative research designs are small because these studies examine real life phenomenon with no intention of generalising results beyond a sample of the population (Omona, 2013; Yin, 2013). Creswell (2013, p.78) and Omona (2013, p.173) advice for a sample of between 6 and 15 individuals in a phenomenological study. Moreover, Omona (2013) suggests that a qualitative researcher should use at least six participants in investigations where the objective is to appreciate the crux of the experience. Following this guidance, a total of 17 participants for this study were selected from four SOCs reporting to the Department of Public Enterprises. The companies were also selected because they employ various categories of engineering professionals at different levels. To enrich and improve the quality of the focus group discussions, diversity was ensured in the group selection in terms age, gender, ethnic and social class (Nyumba et al., 2017).

3.4.3 Profile of Study Participants

A sample totalling 17 participants was purposely selected from four SOCs to participate in this study. Each group has been categorized according to their sector, which were allocated No.1 to No.4, to denote their different economic sectors. Table 1 below outlines job categories of participants, the codes allocated to each category, and the number of participants according to each category:

Category of Participants	**Code**	**Total**
Human Resource Official	HR	12
Hiring Manager	HM	5
Total	**17**	

Table 1: Categories of participants

Table 2 below depicts a summary of the names, demographic profile of the study participants, their job categories, number of years' experience in employee selection, and lastly the code of the sector they were representing. For example, the No.1 denotes the energy sector, No.2 denotes the transport and logistics sector, No. denotes the defence and manufacturing sector, and lastly, No.4 denotes the fibre and forestry sector. These sectors represents the four economic sectors represented by the four SOCs from which study participants were drawn. In order to maintain anonymity, and for ethical reasons, pseudonyms were used instead of the real names of study participants.

Name	Gender	Race	Participant Category	Work Experience	Sector No.
1.Thembi	Female	A	Hiring Manager (HM)	15	2
2.Adele	Female	A	HR	7	1
3.Shaba	Male	A	HR	4	4
4. Glass	Male	A	HR	5	4
5. Tom	Male	W	Hiring Manager	28	3
6. Sue	Female	W	HR	21	3
7. Thandi	Female	A	HR	13	2
8.Queen	Female	A	HR	17	2
9.Tshepo	Female	A	HR	18	2
10. Tumi	Female	A	Hiring Manager	16	4
11. Lerato	Female	A	Hiring Manager	19	2
12. Boipelo	Female	A	HR	11	3
13. Nono	Female	A	HR	7	1
14. Gomolemo	Female	A	HR	12	1
15.Chris	Male	W	Hiring Manager	25	1
16.Ayanda	Female	A	HR	11	2
17.Ben	Male	A	HR	9	4

Table 2: Study participants (NB: Not their real names)

3.5 DATA COLLECTION AND ANALYSIS

According to Antonius (2003, p.2) data constitutes information that is collected, recorded and organised in an orderly way during the research process that is necessary to enable correct and appropriate interpretation by the reader. This section describes the strategy and method deployed to collect and analyse data in this study.

3.5.1 Data collection strategy

Primary data for this study was collected through the use of focus group discussion method. Focus groups are described as carefully planned discussions with an informal group of individuals to obtain their perceptions about a specific topic (Gundumogula, 2020; Lewis, & Sheppard, 2006). Focus groups were useful for gaining in-depth understanding of social issues, for providing useful insights on a particular topic and also useful for manging group dynamics (Gundumogula, 2020; Nyumba et al., 2017). Consistent with this description, I conducted interviews with six focus groups each comprising of a minimum of three group members. Benefits of this technique include that it yields an array of diversified responses given that participants were drawn from different operating divisions (Lewis, & Sheppard, 2006), and allowed me to ask questions without pre-empting answers and to make necessary follow-ups (Panagiotakopoulos, 2011). I developed an interview guide (discussed further below), which is attached as **(Appendix C: Interview Guide)**.

Interviews were conducted virtually through the Microsoft Teams (MS Teams) platform to adhere to the COVID-19 pandemic protocols. The advantage of the virtual platform is that it improves efficiency and convenience, meaning that interviews were conducted online and at times more convenient for the participants, thereby reducing study costs (Creswell, 2013). Another advantage of the virtual platform is that is has built-in tools for both recording and transcribing proceedings. To supplement these tools, I also took additional notes to capture the participants' responses (Simpson, 2011). I also personally transcribed the interview responses and reconciled my own notes with the virtual transcripts. To certify the correctness of the transcriptions, the interview records were shared with each study participant via email, for them to review and effect corrections were necessary, as advised by Carlson (2010). Carlson (2010) and Creswell (2013) concurs with this view, and add that in this way, the trustworthiness of the study will be improved. I requested participants to review, edit, or clarify and return the transcript within one week.

3.5.2 Resume/CV Screening

CV/resume screening is always the first critical step when evaluating job applicants during the selection process (Brown & Campion, 1994; Cole et al., 2003a). According to Cole et.al., (2003a), CV screening and reviewing often involve examining the person-job fit or match, considering related job attributes such as skills, required knowledge and educational expectations, among other things. Brown and Campion (1994) further note that in screening resumes, screeners (who

are often human resource professionals or hiring managers), evaluate the applicants' biodata such as qualifications in order to predict or determine the extend to which the applicant will be successful in the job.

3.5.3 How CVs were designed?

In designing the CVs, I ensured that all the CVs were measured on the same variables, such as qualifications, work experience, institution of learning and demographic profile of candidates such as race, gender, and age. To ensure diversity in the CVs, variations included differences in NQF levels in terms of qualifications, ranging from N6, National Diploma, Degree, Honours Degree including even master's qualifications. To make the CVs even more diverse, some qualifications were added which were not specific to the engineering field such as MBA, Certificate in Project Management, and other social science qualifications such as Postgraduate Diploma in Organizational Development and Labour Law. Other variations included the level of working experience, measured in years, ranging from three up to 11 years for the Junior Engineering Manager position, to 1 to 2 and half years for the entry-level position. Candidates were also varied in terms of institution where the qualifications were obtained, age, gender and race. Here, one qualification was obtained internationally.

3.5.4 How CVs were piloted?

Before the actual interviews, I requested HR colleagues in my department to role play the interview session as a dry run. They were first given three CVs each and were asked to rank them in order of suitability based on the job profile provided. The idea was to first assess the quality of questions in terms of preciseness, and to estimate the duration of the interview session. This session gave me a sense of critical questions that must be asked, and those that can be integrated together, as well as estimate the duration for the interview. The first interview session was critical as it was also used as a dry run to pilot the CVs. This helped to strengthen some of the questions, and I had also realised critical areas where further probing was required.

3.5.5 How CVs were used in the Interview process?

This study aimed to understand how qualifications influence employer hiring decisions. As such, a set of CVs was sent to the study participants two weeks prior to the actual interview sessions. The idea was to give them time to screen and review the CVs, in preparation for the actual interview session, which was based on their assessment of the CVs. In this sense, CVs formed a critical component of the primary data collection process. I distributed two sets of hypothetical

CVs (each set comprising a maximum of five CVs) to the participants and probed the criteria they followed to select the best candidate for two different positions in the engineering field, one being the Junior Manager: Mechanical Engineer, and the other being an Electrical Technician. This was done to understand how CV screening as a phenomenon was conducted in real life situations. Participants were asked to describe the criteria they normally follow in the sifting of CVs to shortlist those that are most suitable for the position they have applied for, and to rank CVs for each position according to the order of priority based on this criterion.

3.5.6 Semi-structured Interview Questions that were used

The following are some of the key semi-structured interview questions that the study participants were asked, with further probing where necessary:

i. Please describe your company's typical employee selection process.
ii. Who composes the hiring team?
iii. What significance do you attach to qualifications as a hiring criterion?
iv. Do qualifications mean the same thing when recruiting for different positions?
v. Do you think a CV is a helpful tool for identifying the suitability of a candidate for the job?
vi. Does the presentation of the CV matter when screening the CVs?
vii. Please tell me how you have ranked the CVs for both the entry-level position and those for the junior management position? Please elaborate on the criteria.
viii. Apart from qualifications, what other variables are important for considering candidates for management positions?
ix. Between the level of qualifications obtained and work experience, which one carries the most weight when determining the most suitable candidate?
x. In your view, are qualifications a good indicator that a candidate can actually do the job?
xi. Does the institution where the qualification was obtained have a bearing in the CV screening process?
xii. What about qualifications obtained internationally?
xiii. Do you think higher education institutions adequately prepares students for the world of work?

3.6 DATA ANALYSIS

Data analysis and interpretation are central to the research process (Yin; 2014). Data analysis involves the process of arranging the mass of collected data in an orderly, structured and meaningful way during the research process (De Vos et al., 2011; Marshall & Rossman, 1999,p.150). Within the qualitative research paradigm, data analysis is complicated by the volume of data generated, necessitating an in-depth analysis (Haradhan, 2018, p.16). Qualitative data analysis involves the use of analytic procedures to transform collected qualitative data into a clear, original, trustworthy, insightful and understandable analysis (Cohen et al., 2007, p.461). Against this backdrop, Creswell (2013, p.44) and Leedy and Ormrod (2010, p. 135) suggest that the analysis of qualitative data requires the use of theoretical frameworks. They argue that this enables for assumptions to be made that ensure the voice of participants, and the researcher's own reflections, are clearly articulated in the final written research report. This also enables for the accurate description and interpretation of the stated research problem and increase its value addition to the body of knowledge (p.135).

Data collected through focus group interviews was transcribed, coded and analysed thematically to identify main themes and sub-themes, and to facilitate better clarity of the information received. Continuous re-grouping of data was used to ensure thorough investigation of collected data (Yin, 2011). Finally, Giorgi (2009, p.218) suggests that in a descriptive phenomenological study, content analysis be conducted for a full interview transcript of each participant.

3.6.1 Analytical Framework

Haradhan (2018) advises that data collection and analysis should happen simultaneously if an orderly and coherent interpretation of data is to be achieved in qualitative studies. Following this guidance, data coding system was used in this study to improve the quality of the data analysis and findings. This system also enabled me to reduce large volumes of data to manageable chunks that made the data readily accessible for analysis (Linneberg & Korsgaard, 2019,p.3). In qualitative studies, coding involves the examination of a coherent portion of the empirical data to identify words, phrases, paragraphs and labelling them in short phrases that summarise its content (Linneberg & Korsgaard, 2019). According to Saldana (2015, cited in Linneberg and Korsgaard, 2019, p.7-9), some of the advantages of coding include that it helps with the acquisition of a profound, in-depth and detailed insights into the data; and makes the data easily accessible and retrievable; helps ensure validity, transparency and with the sorting and structuring of the data; and finally helps with giving a voice to study participants.

Following this guidance, my data were organised in the manner that enables a logical and coherent presentation, analysis and interpretation. In developing the analytical framework, therefore, I have firstly identified five key themes from both the interview transcripts and literature review. The actual phrasing of the themes were derived from the findings as follows:

(i) CVs are valued as an important recruitment tool;
(ii) Educational qualifications matter in employee selection;
(iii) Some relationship exists between the worker's qualifications and their productivity;
(iv) Previous work experience matter in employee selection; and
(v) Individual attributes of candidates matter in employee selection.

Furthermore, as further clarified below, three different codes were used in this analytical framework to denote each of the themes identified, the category of the participant and the key words from the excerpts or quotations.

The framework also included the key recurrent concepts drawn out of the main theories that were analysed. The concepts were "educational qualifications," "worker productivity," "screening and signalling for potential" and "gatekeeping." These were helpful in drawing associations and meanings during the analysis of semi-structured focus group interviews. According to Scott and Usher (2011, p.74), a qualitative research must produce findings, and this process is aided through the use of words, phrases and images to create a frame for conveying the message about what the data reveals. As such, a typical qualitative analytical framework may include the use of codes to classify field notes by making inferences from words that are used by participants repeatedly and producing certain patterns (Scott & Usher (2011, p.89).

In light of the aforesaid, the following analytical framework **(see Table 3)** was developed to incorporate the following important elements: Firstly, I identified five key themes from the interview transcripts and the literature review **(Column 1)**. I have assigned a specific code to each of the themes **(Column 2)** and identified one or more concepts from the literature review aligned with each of the themes **(Column 4).** Both the themes and concepts identified specifically responded to either the main research question or sub-questions **(Column 3).** To substantiate on the importance and relevance of each theme to the study, direct excerpts or quotes were derived from the empirical data to illustrate views of the participants **(Column 5 for examples)**. In capturing the quotations, key phrases that captures and accentuates the main idea being expressed were emboldened in black. A number was assigned to show how many times ideas associated with that quotation were expressed **(Column 6).** Key words that summarizes

the main idea expressed in the quote were provided in **(Column 7).** Finally, participants were categorised into two groups, namely the human resource officials (HR) who participate in employee selection, and the hiring managers (HM) who were either line managers or technical experts for the positions that needed to be filled. These were depicted in Table 2 and in the last column of Table 3 below:

Theme	**Code of the theme**	**Research Question the theme 'speaks to'**	**Key concepts**	**Examples of quotes/excerpts or extracts from the data**	**Number of mentions**	**Key word/s in the quote/extract**	**Category of participant**
CVs are valued as a recruitment tool	**RT** (recruitment tool)	Sub-Question **(1)**	Screening and signalling for potential	A CV provides a summary of **a candidate's career path and history, profiling a person's journey in terms acquired work experience, qualifications, and skills.** Because the **CV indicates candidates' suitability to the position**, it guides the shortlisting process.	5	Profile of career path (CR) & CV indicates suitability of candidates (IS)	HM
Educational qualifications matter in employee selection.	**EQ** (educational qualification)	Sub-Question **(2)**	Qualifications (Degrees and Diplomas)	**Qualification is the minimum requirement**, followed by work experience and other things, and this applies to all positions. The role profile indicates the tasks that need to be performed in the job advertised, and **clearly stipulates the knowledge and skills** that are required for one to be able to succeed in performing these tasks. This **knowledge and skills are expressed in qualifications.**	14	Minimum requirement (MR) & Knowledge and skills (KS)	HR

Theme	Code of the theme	Research Question the theme 'speaks to'	Key concepts	Examples of quotes/excerpts or extracts from the data	Number of mentions	Key word/s in the quote/extract	Category of participant
			Screening and signalling for potential	Qualifications are important because **they are a good indicator of an individual's understanding of the theoretical content** related to the occupation or field of work, **and to some extent, of the practical knowledge and skills** as well.	8	Indication of theoretical knowledge and skills (TKS)	HR
			Gatekeeping	There are times when **academic records, or even test scores in core modules related to the position, are considered as additional criteria**. This is usually in situations where you have to choose the most suitable candidate, especially when there is a tie, where there are two or more candidates who meet all the minimum requirements and only one must be selected. In essence, you use the same criteria that is used by universities when selecting competing students for admission in different field of study	4	Additional criteria (AC)	HM

Theme	Code of the theme	Research Question the theme 'speaks to'	Key concepts	Examples of quotes/excerpts or extracts from the data	Number of mentions	Key word/s in the quote/extract	Category of participant
Some relationship between the worker's qualifications and their productivity	**WP** (worker's productivity)	Sub-Question **(2&3)**	Productivity	I would say Yes and No. Let me explain. It entirely depends on the field of study, or the occupations studied for. For instance, in general fields like HR or communications, you have no assurance that an applicant can hit the ground running and deliver competently from the time of employment. This is one of the reasons that a system of internships was introduced to try and close the work experience gap. However, in **vocational fields which are very specialized, and here I can think of fields like engineering and related fields such as technicians and artisans; medicine, law, and even pilots** for that matter, chances are that once **qualified, a candidate is more likely to perform competently from the word go**. This is so because training in these fields include quite intensive on-the-job, such as apprenticeships and sometimes learnerships, which by nature comprise a reasonable amount of time of	11	Perform competently (PC)	HM

Theme	Code of the theme	Research Question the theme 'speaks to'	Key concepts	Examples of quotes/excerpts or extracts from the data	Number of mentions	Key word/s in the quote/extract	Category of participant
				practical training and simulations that prepare students for the world of work			
Previous work experience matter in employee selection.	**WE** (work experience)	Sub-Question **(2)**	Previous work experience	**Applied experience matters** the most. Fundamentally you must have minimum requirements in case of qualifications. However, depending on the level of the position, applied experience in senior management is important as the candidate must have been previously exposed to decision making and accountability responsibilities. I therefore think that at this level, qualifications and work experience are both very important, they both go together. Moreover, in certain circumstances, work experience can compensate for qualifications, for example, in an entry level position such as an artisan, a candidate with proven level of experience, who is not yet formally qualified or completed his qualification, i.e., who has not yet acquired a Red Seal certificate, can still be considered for a position on account of reasonable work experience.	9	Applied Experience (AE)	HR

Theme	Code of the theme	Research Question the theme 'speaks to'	Key concepts	Examples of quotes/excerpts or extracts from the data	Number of mentions	Key word/s in the quote/extract	Category of participant
Individual attributes of candidates matter in employee selection	**IA** (individual attributes)	Sub-Question **(3)**	Screening and signalling potential	Any employer would over, and above qualifications and work experience consider abilities such as communication skills, interpersonal skills, problem solving, resilience and leadership abilities.	7	Soft Skills (SS)	HM

Table 3. Analytical Framework

NB. At a glance, the above distribution of quotations show that the majority of the views expressed by respondents are the ones that associates qualifications with knowledge and skills. According the above table, 22 times participants expressed views that qualifications represents knowledge and skills; followed by 11 times where respondents emphasised that qualifications in vocationally specific occupations were associated with making graduates more productive and thus job ready; and 9 times where respondents felt that work experience was very important; and 7 times alluding to the significance of individual attributes of candidates; and 6 times that qualifications were minimum requirements; and 5 times alluding to the importance of CVs; and lastly, only 4 times that qualifications were either signalling potential or even used as a gate keeping mechanism. From this analysis, one can conclude that employer perceptions expressed more resonate with human capital theory, and the conclusion can thus be that in this study, employer perceptions are more explained from the human capital point of view.

3.6.2 Data Management

At the beginning of each interview session, participant's data were collected and profiled according to their demographics. This data was documented and organised according to codes allocated to each participant, and then stored in spreadsheets. The spreadsheet was then stored and kept on my password protected laptop, complemented by an external hard drive for safety keeping during the study. Similarly, post the completion of each interview session, the audio recording of the interview was copied from the Microsoft MS Teams platform and stored in password protected laptop computer, with duplicates saved in an external hard drive locked in the lockable filing cabinet at the researcher's residence. Interview transcripts were also stored in the same way. Upon the completion of the study, all email correspondence with participants were deleted from the researcher's email account. However, all supporting documents such as transcripts, demographic data and analysis files were stored in the researcher's external hard drive which is locked at his residence.

3.7 RIGOR AND ETHICAL CONSIDERATIONS

The following ethical principles of research were applied and observed in this study:

i. Written permission to conduct the study was obtained from the Group Human Resource Executives of each of the four SOCs under study through a letter in **(Appendix D).**
ii. All participants were taken through the principle of voluntary participation. Their right of refusal to participate in the study was also explained to them.
iii. Confidentiality pertains to ensuring that information about respondents is handled in a confidential way. In this regard, I assured the participants that their right to privacy and confidentiality will be respected and protected.
iv. I also ensured that no harm happens to participants by not breaching the right to privacy and confidentiality and all other participants' rights.
v. I also explained to the participants that their participation will enhance our understanding of the two variables being studied.
vi. Informed consent for the participants gave a clear description of the study.
vii. All information and records obtained from the study was kept in a secure place and was considered anonymous and confidential (Terre Blanche et al., 2006).

3.8 SUMMARY AND CONCLUSION

In this chapter I described the research design and methodology that was followed to answer the research questions for this study. Because the researcher endeavoured to understand the lived experience of the hiring process, particularly CV screening, the descriptive phenomenological method was applied in this study. This method was selected because it allowed the researcher to gain an in-depth understanding of the participants' lived experiences and perception of the phenomenon under study, in this case "the meanings that employers attach to qualifications in hiring decisions, and what do these meanings tell us about employers' hiring criteria of prospective employees." The selection of the phenomenological method meant that the researcher was committed to remain loyal to the method throughout the research process. This involved an effort to understand the method and its philosophical foundations, its procedures and techniques in detail and implementing them appropriately.

CHAPTER 4: FINDINGS AND DISCUSSION

4.1 INTRODUCTION

This chapter presents the findings synthesized from the focus group interviews. The study sought to examine employer perceptions about how educational qualifications are used in hiring, in particular the meanings employers attach to qualifications and how these meanings influence their hiring decisions. The findings are clustered around employer perceptions and are discussed in five themes describing these perceptions. Extracts of quotations from the empirical data are used to accentuate participants' views, and to support conclusions about the main findings against each theme. The chapter first analyses and describes the ways in which participants have ranked the CVs in different focus groups. The main findings drawn from analysing the empirical data for each of the five themes will then be discussed. The chapter then closes off with the discussion section which covers the main arguments arising out of the theories, the more recurrent ideas and concepts, comparison of the views of HR officials and hiring managers, as well as determining if the research question and its sub-questions have been adequately answered.

4.2 CV RANKING

CV screening was a critical component of the approach used in this study. This process involves examining the person-job-fit and is the first most important step during the selection process

(Brown & Campion, 1994). The process also attempts to predict whether the job applicant's future job performance, using the individual biodata contained in CVs (Brown & Campion, 1994). As such, participants were requested to rank both sets of CVs **(Annexure E)** for the two positions according to the order of preference, and to motivate for their ranking order. In total, six focus groups with a minimum of three participants were interviewed. Of the six focus groups, only five managed to rank the CVs. Participants in the sector one group designed a simple template for their ranking order based on the criteria derived from the requirements stipulated in the job profiles. I tweaked this template a little bit and adopted it for use by the rest of the other groups.

The template covered the following fields (see Table below): The names of candidates, reflected in pseudonyms for confidentiality, were captured in **Column 1**. This was followed by the position applied for in **Column 2**; and **Columns 3-7** capturing the main criteria for ranking. This included qualifications, comments on qualifications, work experience and comments on that, as well as any additional criteria from the job profiles. **Column 8** captured how each group ranked each candidate's CV based on the criteria outlined above. The ranking order was on a scale of 1 to 5, with 1 representing the topmost preferred candidate in terms of meeting requirements, and 5 representing the less preferred candidate, or the one who did not satisfy all or some of the requirements. The column also indicates the overall ranking derived from the comparison of all ranking order. Lastly, **Column 9** captured the general comments of participants about their overall impression about each CV. The analysis of the criteria followed to rank CVs across all the groups was based on the minimum requirements stipulated on the job profiles, i.e., minimum qualification and work experience requirements, supplemented by other additional criteria stipulated as added advantage. Colour coding was used to denote the following: green shows that the minimum requirements were met; amber denotes a partial satisfaction of requirements, and red denotes that minimum requirements were not met. The following is an analysis of how participants ranked CVs for each of the two positions respectively:

		Min Requirements												
Candidate	**Position applied for**	**Qual NQF 6 Level required**	**Notes on Qual**	**Experience 2 years working experience**	**Notes on Experience**	**Other Criteria Considered. E.g. Professional registrations, or other skills and experience**	**How CVs Were Ranked by Each Group**							**General Comments**
Position 1	**Electrical Engineering Technician**						**Gr.1**	**Gr.2**	**Gr.3**	**Gr.4**	**Gr.5**	**Gr.6**	**Overall Ranking**	
Karabo Kutlwano	As above	BTech	NQF level 7	2 yrs. Exp. as Eng. Tech- May not be related	Unrelated experience	Not yet registered as a candidate by ECSA to acquire full professional status	2	3	2	5	2		2	Have exceeded min qual requirement, i.e., NQF 7, however unrelated work experience
Lerato Bokitla	As above	National Diploma plus Trade Test	NQF 6- meets minimum requirements	Potential experience 3-4 years bearing in mind his apprenticeship done	Still acquiring work experience through an apprenticeship programme	Not applicable at this stage	4	2	3	2	4		3	CV a little scantly, but may be a rough diamond
Orettah Phistus	As above	Requires P1 & P2 - Inservice training, No mention of Trade Testing	Intern with institutional learning certificate	No work experience reflected	No work experience reflected	Not applicable at this stage	3	4	5	4	5		5	The candidate still requires to complete mandatory 6 months' work experience (P2) learning to acquire full level 6 qualification
Kirosh Wallington	As above	BTech Elec Eng. + National Diploma Civil	NQF level 7- meets minimum qual requirements	2 years Civil Eng. related, No Elect Eng. Related experience	2 years Civil Eng. related, No Elect Eng. Related experience	Candidate Engineering Technician registered with ECSA	1	5	1	1	1		1	Scored high on the basis of qualifications, although experience is not related
Zainab Potgieter	As above	National Diploma with Trade Test	Meets minimum quals requirements	Potential experience -3 to 4 years bearing in mind his apprenticeship done	Still acquiring work experience through an apprenticeship programme	Not applicable at this stage	5	1	4	3	4		4	The candidate still requires to complete mandatory 6 months' work experience (P2) learning to acquire full level 6 qualification

Table 4: CV Ranking Order for position of Electrical Engineering Technician

4.2.1 ANALYSIS

The following section provides the analysis of the ranking order for the first position, which was an entry-level position of electrical engineering technician:

4.2.1.1 Electrical Engineering Technician

The job profile stipulated the following minimum requirements for a candidate to be considered for this position: Firstly, the minimum relevant qualification (i.e., in electrical engineering) at NQF level 6 was the sole primary requirement for this position. Secondly, the job profile added three requirements that would give the candidate an added advantage, and these were a minimum of two (2) years' working experience in the related field; professional registration; and possession of all or some of the following personality and interest traits: logical thinking skills, mathematical skills, observation skills, problem solving and good writing skills. A closer look at these criteria show that the NQF level 6 qualification was the only compulsory selection criterion for this position, coupled with some of the personality and interest traits. Work experience and membership of a professional body, as well as personality and interest trait were additional criteria that gave candidates the advantage. I found that all the groups followed these criteria in their ranking of CVs, except that none seem to have considered personality traits and interests.

In analysing how participants ranked the CVs for the above position, I made the following findings: Firstly I found that all the groups that managed to rank the CVs followed the same criteria. This was understandable as they indicated that the criteria for ranking were based on what the job profile stipulated as minimum requirements for the position. Based on **Table 4.1**, it shows that four candidates, namely: Karabo Kutlwano, Lorato Bokitla, Kirosh Wallington and Zainab Potgieter met the minimum qualification requirements of an NQF level 6, with Karabo and Kirosh both exceeding the NQF level 6 with each having a BTech degree (NQF level 7), and Lorato and Zainab respectively holding a National Diploma complemented by a Trade Test Certificate. The only candidate who was considered not to have met the minimum qualifications requirement was Orettah Phistus, who was still doing in-service training to obtain a P1 and P2 (NQF level 6) National Diploma for the Technician qualification. As indicated earlier, none of the groups seemed to have considered the personality and interest traits in the job profile as a criterion.

The second finding was startling because even though all the groups seemed to have extracted the same criteria from the job profile, they differed materially in how they each ranked the CVs.

For instance, the ranking order in **Table 4.1** shows that Groups 1, 3, 4 and 5 respectively all ranked the candidate Kirosh Wallington No.1 (meaning the most preferred) whereas group 2 ranked the same candidate at No.5 (meaning the least preferred). According to the groups that ranked the candidate No.1, the candidate met the primary and one of secondary requirements which was professional registration. I found that groups 1, 3 and 5 respectively agreed with the candidate ranked No.2, which was Karabo Kutlwano. The candidate met only the minimum requirement, and none of the other additional criteria that gave added advantage.

The same obtained for Lorato Bokitla, whose overall raking was No. 3, having been ranked at no.2 by groups 2 and 4; and at no.3 by group 3 and lastly at no.4 by groups 1 and 4 respectively. Zainab Potgieter, who possesses exactly the same qualification and level of experience as Lorato Bokitla, i.e., an NQF level 6 National Diploma complimented by a Trade Test as well a minimum of 4 years' work experience as a result of an apprenticeship training programme, obtained an overall ranking at No.4, with groups 3 and 5 raking her at no.4, group 4 ranking her at no. 3, and groups 2 and 1 ranking her at no.1 and no.5 respectively. It is interesting that group 2 ranked Zainab and Lorato, both of whom were having the same qualification level and number of years' work experience at no.1 and no.2 respectively. The rationale for this was further probed in the ensuing discussion, and in the analysis of the employer perceptions.

Startled by the glaring difference of how the groups ranked the CVs, particularly group 2's which differed materially in terms of how candidates No.1 and 2 were ranked , my analysis went a bit further to understand why this startling difference. I found that this group was coming from the energy industry where the occupation under review, i.e., electrical engineering was an occupation in demand, i.e., it was core to the company and industry. I found that in this industry, qualifications went together with work experience as core selection criteria across all occupations, regardless of the seniority of the position. This group in their ranking considered both the minimum qualification requirement and work experience, even though the job profile had elevated only qualifications as minimum core criteria. This was confirmed later in the actual group discussion where I found that in the energy sector, particularly the energy plant operations, safety considerations were very crucial, making work experience one of the key requirements for employment across all occupations, including entry-level positions.

The group also ranked Zainab Potgieter and Lorato Bokitla at No.1 and 2 respectively, who both possessed an NQF level 6 qualification plus a Trade Test, and a minimum of four years' work experience when considering the years spent in an apprenticeship programme. According this

group, 'they recruit their candidates from TVET colleges when they complete their N2 which covers most of the theoretical component of training, and put them into an apprenticeship programme, for about three to four years, depending on the pace of the trainee.'[1] This group explained that the 'work experience acquired was critical to familiarize apprentices with all the safety standards and requirements at a power plant.'[2] I found that the group expanded the criteria to include work experience; hence candidates like Kirosh Wallington and Karabo Kutlwano who both had BTech degrees, therefore exceeding the minimum qualification requirement, were ranked low by this group, because they did not meet the minimum work experience requirement, even though it was not a primary requirement for the position according to the job profile.

In the final analysis, the above discussion suggests that employers' decisions or criteria for ranking CVs was more driven by considerations for industry practices and requirements, more than what the job profiles only stipulates. This made sense to me since the said job profile was an artificial profile developed by the researcher and could not incorporate real life industry specific requirements. In the next sub-section I consider the ranking of CVs for the Junior Manager: Mechanical Engineering position.

[1] HM, RT, Tom, Feb 2022
[2] HM, RT, Tom, Feb 2022

		Min Requirements												
Candidate	**Position applied for**	**Qual NQF 6 Level required**	**Notes on Qual**	**Experience 2 years working experience**	**Notes on Experience**	**Other Criteria Considered. E.g. Professional registrations, or other skills and experience**	**How CVs Were Ranked by Each Group**							**General Comments**
Position 2	**Junior Manager: Mechanical Engineer**						**Gr.1**	**Gr.2**	**Gr.3**	**Gr.4**	**Gr.5**	**Gr.6**	**Overall Ranking**	
Eric Peters	As above	UK City & Guilds NQV 3/NQF 5 equivalent	Qualification level below requirements	11years working experience	Adequate experience and have supervisory experience	Not registered member of a professional body	4	6	6	2	6			Can be considered for interview on the basis sufficient relevant work experience which include supervisory roles.
Lihle Zungu	As above	BTech	NQF 7 -adequate qualification	5 years' work experience	Lack supervisory experience	Registered member of ECSA	2	2	2	5	3			Can be considered for interview albeit not having supervisory experience
Melanie Naicker	As above	BTech	NQF 7- adequate qualification	5 years plus work experience	Have some level of supervisory experience in acting capacity	Not registered as a member of a professional body	1	1	1	3	2			Should definitely make it to the next stage- i.e., interview. Should she be considered, she will be encouraged to complete her registration with the relevant professional body
Monica Else	As above	Diploma in Engineering	NQF 6 -meet minimum qual requirement	3 years' work experience	Inadequate experience (3 years) and lacks supervisory experience	Not registered as a member of a professional body	5	5	5	4	5			Do not meet requirements for interviews
Nadia Koelman	As above	BTech	NQF 7-adequate qualification	5 years' work experience	Lack supervisory experience	Registered as a member of a professional body	3	3	3	1	1			Can be considered for interview albeit not having supervisory experience
Zimele Patrice	As above	MSc. Mechanical Engineering; National Diploma in Mechanical Engineering	Adequately qualified	3 years' experience	Inadequate experience as an Engineer with no supervisory experience	Not yet registered or accepted as a professional engineer	6	4	4	6	4			Do not have adequate experience to be considered for interviews

Table 5: CV Ranking Order for position of Junior Manager: Mechanical Engineer

4.2.1.2 Junior Manager: Mechanical Engineer

With regard to the Junior Manager: Mechanical Engineering position, the minimum requirements stipulated in the job profile were an NQF level 6 qualification in mechanical engineering or mechanical engineering technology field and engineering design. Further requirements were reasonable exposure to practical application of engineering principles, a minimum of five (5) years' working experience with at least one (1) year in a supervisory capacity. Membership of and/or possession of a professional licence was an added advantage. Additional personality and interest requirements included creativity, listening skills, mechanical skills, mathematical skills and problem-solving skills.

Six fictitious candidates were supplied to participants as potential applicants for this position. With regard to qualifications, of the six candidates, only one did not meet the minimum qualifications requirement which was a Mechanical Engineering qualification at NQF level 6, holding a City and Guilds qualification equivalent of the South African NQF level 5. Of the remaining five candidates, three were on par with a BTech Mechanical Engineering degree plus a national diploma in engineering, two in mechanical engineering, and the other one in nuclear submarine engineering and engineering systems. One of the remaining two candidates had a Master of Science (MSc) degree in Mechanical Engineering plus a National Diploma in the same field and the last candidate only had a National Diploma in Mechanical Engineering.

With regard to work experience, four of the six candidates met the minimum work experience requirements. Of these, two also had some supervisory experience. The remaining two candidates did not meet the requirements altogether, with neither work nor supervisory experience to their credit. On additional criteria, only three of the six candidates were registered with professional bodies, two with ECSA and the other one with the Chartered Management Institute. On the balance between qualifications and work experience, three candidates fully met the qualification and work experience minimum requirements, one candidate met only work experience requirement, and the other two met only the qualification requirement and three had professional registrations.

In my analysis of how participants ranked candidates in this position, I found that there was a complete departure in terms of criteria followed when compared to how the ranking was done with the previous position. In this case, I found that qualifications and work experience were considered equally by all the groups that managed to rank the CVs. For instance, the candidate who was ranked No.1 by 3 out of five groups, Melanie Naicker, met both qualifications and

work experience requirements, complemented by some supervisory experience. The candidate had a BTech degree in Mechanical engineering, coupled with a National Diploma in Nuclear Submarine Engineering and a Certificate in Engineering Systems. The candidate also had a total of ten years working experience with one year supervisory experience and was also registered with the Chartered Management Institute as a Level 3 First Line Manager. This candidate was ranked at No.2 and 3 respectively by the other two groups.

Second in the rank was Lihle Zungu and third was Nadia Koelman. Both candidates possessed a BTech degree in Mechanical Engineering degree coupled with a National Diploma in Mechanical Engineering, and both with six years of work experience, and were registered with ECSA. Similar to a case in the earlier position, Zungu was given a nod ahead of Koelman because participants indicated that they considered test scores in the candidates' module on mechanical engineering for a BTech degree. The candidate who was ranked at No.4 by three of the five groups, Zimele Patrice, had a MSc degree in Mechanical Engineering as well as a National Diploma in the same field. However, the candidate only had three years of work experience and was therefore not considered by the participants for the next stage of the process, despite been the highest qualified in the group. My analysis here shows that participants in this position ranked or weighed work experience equal to educational qualifications. Monica Else was ranked at No.5 by four of the five groups given that she holds a National Diploma in Mechanical Engineering with five years' work experience.

The last candidate, Eric Peters, whose international qualification was an equivalent of an NQF level 5, was ranked at No.6 by three of the five groups on the basis of not meeting the minimum qualification requirement, even though he had the most number of years work experience, which was 11 years. Of interest, however, was that participants felt that this candidate may still be considered for the interview stage, despite the qualification gap. In the final analysis, I found that although the overall ranking order for this position was equally based on both qualifications and work experience, work experience seemed to weigh a bit more than qualifications. My assumption was based on the following observations: The first was that Melanie, who was ranked No.1, had ten years work experience coupled with one year of supervisory experience which gave her an edge above Lihle and Nadia who possessed the same level of qualifications with her, except with a smaller number of years work experience. Secondly, Eric had the most number of years work experience and was considered for the next stage of the selection process, even though he did not quite meet the minimum qualification requirements, and thirdly, Zimele

was the highest qualified of all the applicants, with a Master of Science degree in Mechanical Engineering coupled with a National Diploma in the same field and was not progressed to the next phase on account of having less number of years work experience.

Based on the foregoing analysis therefore, it was safe to conclude that although both qualifications and work experience were critical for consideration in his position, work experience seemed to have an upper edge over qualifications. This conclusion seemed consistent with the finding in the previous position where one group of participants considered work experience as an important criterion on account of safety requirements. I found that because of the responsibilities going with being a manager, work experience was an equally important, if not more important selection criterion for management positions. This resonates with Humburg et al. (2013), who found that work experience would at times even compensate for qualifications in cases where these were not adequate (as in the case of Eric Peters above), or where qualifications were not relevant to field.

4.3. Employer Perceptions

This section provides employer perceptions and is organised around five key themes identified in the analytical framework described earlier in chapter three. These themes were identified as follows:

(i) CVs are valued as an important recruitment tool;
(ii) Educational qualifications matter in employee selection;
(iii) Some relationship exists between the worker's qualifications and their productivity;
(iv) Previous work experience matters in employee selection; and
(v) Individual attributes of candidates matter in employee selection.

4.3.1 CVs are valued as a tool for employee selection

This sub-theme is linked to the sub-question on CVs below:

'How does the screening of CVs/resume fit into the overall hiring process?'

Participants view a CV as an important and integral part of the selection process. I found this to be consistent with literature where resume screening is presented as the first most important step during an employee selection process (Brown & Campion, 1994). My interest with the CV screening process in this study was to determine the place of qualifications in the CV, to understand how employers interpret information about qualifications presented in the CVs to

select candidates for the next steps of the selection process. Three important but common-sense findings emerged from my analysis of the empirical data in relation to CVs and their value in the overall hiring process.

Firstly, I found that all participants viewed the CV screening as a sub-process within the overall hiring process. Participants described a CV as 'a tool for introducing yourself to the prospective employer,'[3] which 'provides a summary of a candidate's career path and history, which also profiles a person's journey in terms of acquired work experience, qualifications, and skills.'[4] I found this consistent with Brown and Campion's assertion, that a CV is an important tool for employee selection through which job seekers indicate their suitability for advertised positions. As such, I found that participants' views were consistent with extant literature that the CV profiles an individual's career path and is used by job seekers to communicate information about their educational qualifications, skills, work experience and other abilities, to indicate to potential employers that they meet the job requirements. The above views were captured in the following quotations:

A CV provides 'a summary of a candidate's career path and history, profiling a person's journey in terms of acquired work experience, qualifications and skills.' These provide an indication of their suitability to the position. So, in my view, a CV is a very necessary document to provide specific information about the job applicant, which can be verified and helps in hiring decision making. So, from the CV, one can immediately determine if an applicant meets the requirements or not.

Another participant echoed the same sentiment, and said that:

Remember, 'a CV is a tool for introducing yourself to the prospective employer, and must therefore be clear about who you are, your qualifications, skills and other abilities that the employers require.' If a candidate's CV is not aligned to the job requirements, then you will not even be considered for the next stages of the recruitment process.

[3] HM, RT(5), Chris, Feb 2022
[4] HM, RT(6), Tom, Feb 2022

Most importantly, participants emphasized that it is this information contained in the CV that they 'use to screen and sort applicants, to determine if they match the job profile.'[5] In this instance, a CV is used to sift out candidates whose profiles mostly match the job profile, separating them from those who do not match the job profile. Participants explained that they 'scrutinise the CV to determine if the candidates' information about qualifications and work experience and other attributes such as professional registration meet the minimum requirements stipulated in job profiles.'[6] In this sense, I found that by profiling a candidate's qualifications and work experience in a CV, the candidate accentuates their potential ability to the employer, signalling their suitability for the advertised position. Viewed from this angle, I found that the participants' understanding of the role of CVs fits the description of a sorting device, which resonates with the sorting theories. These theories hypothesise that in an imperfect labour market beset with information asymmetry, job seekers use information about their qualifications and other characteristics to signal their abilities to employers, and employers on the other side use the same information to screen the applicant's potential.

Consistent with the preceding idea, participants also regard CV screening process 'as necessary for narrowing down the pool of applicants to a manageable size,'[7] wherein 'applicants who do not meet the minimum requirements in terms of education and experience are eliminated.'[8] This point of view resonates with the claims of both the sorting theories and the credentialism theory that qualifications put those who hold them in front of the queue for jobs in the labour market (Kasika, 2015). I also found that CVs are important because recruiters use them to develop guidelines for the subsequent step of actual interviews. One participant emphasised that 'remember, you have to use both the job profile and the CV as the main source of your interview guidelines because one stipulates minimum requirements, and the other sort of responds directly to these minimum requirements.'[9]

Participants mentioned that it is possible to mistakenly exclude adequately qualified candidates, especially when they are dealing with a huge number of applications, particularly because once

[5] HR, RT(6), Gomolemo, Feb 2022
[6] HR, RT(7), Thandi, Feb 2022
[7] HR, RT (4), Sue, Feb 2022
[8] HM, RT (5), Thembi, Feb 2022
[9] HR, RT (4), Nono, Feb 2022

eliminated from the pool, the applicant is never recovered. For instance, one participant remarked that 'sometimes you deal with large volumes of applications, and under very tight timelines, therefore, if a CV is not well presented, I do not have time to try understand what the candidate is trying to say, if the quality is bad, it disadvantages the candidate.'[10] In this case, it is possible to miss out adequately qualified candidates because their CV was poorly written. This view was echoed by Russel (2007; cited in Higgins, 2019) who says that resume screening may exclude suitably qualified candidates in situations where large volumes of CVs are dealt with. Russel notes that this often happens when the quality of a CV is scrappy and untidy, making it easy to be overlooked by the screeners. Therefore, by screening CVs, employers use applicant's information about qualifications, work experience and other candidate attributes to discriminate those deemed not adequately qualified, even before testing their capabilities.

Related to the foregoing argument, the third finding is that participants believe that in screening the CVs in certain occupations, they can make inferences or predictions about a candidate's job-fitness and future performance or productivity on the job. For instance, participants believe that when you screen CVs for occupations such as engineering, medicine and accounting, possession of a degree may suggest that the candidate already possess the skills and knowledge of practice principles related with the particular occupation. In fact, one participant puts it that 'in vocational occupations, chances are that he will hit the ground running.'[11] This view resonates with the human capital theory which claims that education makes people productive. This point gives further credence to the notion that associates qualifications with knowledge and skills, and explains why employers can predict future performance, just by analysing a candidate's qualifications in CVs.

In summary, the main take away points from the preceding discussion reviewing how the CV screening fits into the hiring process, are that: CVs are valued by employers as an important and essential part of the employee selection process without which recruitment will be difficult. Second, CVs are regarded as mechanisms through which information about the job seeker's qualifications and work experience among others, is exchanged between parties in the labour market, therefore reducing information asymmetries between employers and job seekers. As

[10] HR, RT (3), Glass, Feb 2022
[11] HR, RT(5), Nono, Feb 2022

such, a CV is viewed as a particularly important document that profiles the job seekers' career history, work experience, educational qualifications, and other attributes, e.g., hobbies and interests, which may indicate their suitability to the employer. Information about the job seeker's educational credentials contained in CVs enables both job seekers and employers to respectively signal and screen for suitability.

What stood out for me about CVs was that they fit the description of a sorting device because when employers screened CVs for candidates' biodata about qualifications and work experience and other attributes, they were effectively seeking to eliminate those candidates deemed not suitably qualified. Participants also emphasised that the onus is on the applicant to present his/her information in a manner that is simple, accurate and clear, suggesting that the quality and accurate presentation of a CV gives one an edge above those whose CVs are not presented well. As indicated earlier, this was further support to the employers' belief that qualifications represent knowledge and skills, suggesting productivity or ability to successfully perform job tasks. This, therefore, explains why the qualified were mostly preferred by employers, and had an edge above their counterparts in the job market.

4.3.2 Educational qualifications matter in employee selection

The significance of educational qualifications were discussed in relation to the main research question, which sought to understand:

'What meanings do employers attach to educational qualifications in hiring decisions, and what do these meanings tell us about employers' hiring criteria of prospective employees?'

Evidence from literature shows that qualifications, often expressed in degrees, diplomas and other forms of certificates, are very important screening criteria when individuals are allocated jobs in the labour market (Baker, 2011; Higgins, 2019). Baker (2011) further maintains that qualifications are also used as job entrance requirement throughout most occupational structures. What is not obvious from literature is what exactly qualifications represent in the eyes of employers, and what meanings do they attach to them. Theories offer different explanations on what employers actually read into qualifications, and how these meanings influence their employment decisions. As discussed in Chapter 2, proponents of human capital theory argue that qualifications represent productivity. It is argued that skills and knowledge acquired through investments in formal education and on-the-job-training make people productive (Becker, 1964). In contrast, the sorting and the credentialism theories respectively contend that qualifications

serve as a positional good for social closure, putting those who hold them in front in the job queue (Kasika, 2015, p.16).

The sorting theories claim that employers do not certainly know the extent to which potential employees will be productive on the job, or certainly confirm the types of skills and knowledge they bring to the workplace, or even how these aptitudes will affect their productivity (Spence, 1973; Arrow, 1973). Accordingly, qualifications at best only serve as a screening and signalling device for potential, used by both employers and job seekers to either screen for, or signal potential (Arrow, 1973; Spence, 1973). On the contrary, credentialism theory does not associate qualifications with productivity at all, but rather claims that qualifications are used to control access into jobs (Collins, 1979). According to this theory, people do not acquire qualifications primarily to be productive. At best qualifications legitimise social inclusion and exclusion, and serve as gatekeeping mechanisms, ensuring access to jobs and professions is controlled through the demand for qualifications (Kasika, 2015).

In analysing the empirical data, I made a few findings in relation to the meanings that employers attach to qualifications, which affect how they use them in deciding how to allocate jobs. The first and more obvious finding was that all participants agree that qualifications were indeed a central criterion for making employment decisions in the labour market (Baker, 2011; Ekwoaba et. al., 2015). One participant explained 'that because qualifications are the minimum requirements for every job,'[12] 'they tick the first box when screening CVs.'[13] This perception is consistent with the literature, as already acknowledged by the claims of all the three theories analysed (Higgins, 2019). Furthermore, participants also indicate that 'every position in the organisation has its minimum qualification requirement.'[14]

Secondly, the participants suggests that in order of priority, 'qualifications precede experience as a selection criterion.'[15] What this means is that the recruiters first screen for qualifications, and then experience and other variables. I found that although this view was consistent with Brown and Campion's (2014) ranking of selection criteria, where qualifications came at the topmost, it

[12] HR, EQ (7), Tshepi, Feb 2022
[13] HM, EQ (5), Lerato, Feb 2022
[14] HM, EQ (7), Lerato, Feb 2022
[15] HR, EQ (7), Tshepi, Feb 2022

was not consistent with the empirical data, particularly how participants have ranked CVs for the junior management position, wherein work experience was weighed equally with or above qualifications. For instance, as discussed in section (4.3.1), I found that for the entry-level Electrical Engineering Technician position, qualifications weighed more than work experience as a selection criteria. The ranking order of CVs was primarily based on the possession of the minimum qualification requirements. In contrast, in the second position, the junior manager Mechanical Engineering position, work experience had a slight edge over qualifications in order of priority. Two scenarios in the ranking of CVs demonstrated this. In the first scenario, one candidate did not meet the minimum qualifications requirement, having an NQF level 5 qualification instead of the required NQF level 6. However; because the same individual possessed the highest number of work experience coupled with supervisory experience, he was considered for the next round of the selection process based on their previous work experience. The second scenario within the same position was that another candidate, this time with the highest qualification, a master's degree in mechanical engineering, who did not meet the minimum work experience requirement, was ranked low and was not considered for the next stages of the selection process, despite having the highest qualifications. This idea is further discussed in subsection **(Refer to 4.3.4).**

With regard to the value of qualifications, the following were some of the views expressed:

For starters, every position advertised will have a formal qualification stipulated as a minimum requirement for consideration. 'Qualifications tell you whether an applicant has the skills and theoretical knowledge of the field for which the position is advertised.

Another participant supported this view as follows:

'Qualification is the minimum requirement, followed by work experience and other things, and this applies to all positions.' The role profile indicates the tasks that need to be performed in the job advertised, whether in management or lower-level positions, and clearly stipulates the knowledge and skills required for one to succeed in performing these tasks. 'This knowledge and skills are expressed in qualifications (HR, EQ (7)Tshepi, Feb 2022).'

The third participant, Lerato (HM, Feb 2022), put it as follows:

> 'During the initial screening of CVs, qualifications tick the first box, and such a qualification must be relevant to the position being applied for. In my company,

> qualifications are graded according to job categories, from the lowest position to management positions. So, the higher you go up the occupational categories, the higher the minimum requirements become. For instance, an NQF level 5 qualification (e.g., a National or Higher Certificate) will be a minimum requirement for an entry-level position, graded at category F. If you get to category E, the minimum requirement will be NQF level 6, (i.e., a National Diploma). Supervisory positions start from category D and require a minimum of a Degree (NQF level 7), plus some level of relevant work experience. Categories C, B and A require a minimum of an honour's degree up to PhD (i.e., NQF level 8 to 10). These categories are usually from professional, middle, senior and top management levels, and also have additional requirements such as experience and other things, for example, for a CFO you will need a CA qualification and related professional association registrations or licences."[16]

From the foregoing arguments, it is evident that there was no dispute among participants about the centrality of qualifications as an important hiring criterion. However, it was also clear that consistent with claims made by the different theories, there was no consensus among employers on what exactly qualifications represent, or what meanings they attach to them as a criterion for employment decision making. Using Lerato's (HM, EQ (5), Feb 2022) statement as an example, I discuss how this statement fits the meanings attached to qualifications from the three theoretical perspectives.

The first meaning of qualifications that can be deduced from the above statement resonates with the human capital theory's claim about educational qualifications, that they represent knowledge and skills and therefore denote productivity. For example, by requiring 'a CA qualification for the position of a CFO,'[17] employers seem to believe that with such a qualification, a CFO will be successful in executing the functions of his job. It can be surmised that this belief is derived from the understanding of the rigorous process undergone by candidates in acquiring a CA qualification. Given this understanding that education makes a person productive, and the rigorous training process of a CA as a professional, the employer can reasonably predict a successful execution of the CFO responsibility. This assumption resonates

[16] HM, EQ (5), Lerato Feb 2022
[17] HM, EQ (5), Lerato 2022

with Baker's (2011) argument that employers can use qualifications to predict future performance, that a person with an accounting qualification can fairly become a good Accountant or Auditor. A CA qualification in this case is associated with mastery of the financial accounting practices and principles, suggesting an in-depth knowledge and skills of the profession, all of which are critical for success as a CFO. Most participants echoed the same view, explaining that people in possession of 'qualifications in fields such as law, engineering and artisan trades are more likely to perform their jobs more effectively from the word go.'[18] As discussed in Chapter 2, the foregoing argument encapsulates the essence of the human capital theory, which claims that employers prefer the highly qualified and are willing to pay more salaries because they believe they are productive (Becker, 1964). Echoing the same view, Blommaert, et al. (2020) concur that this is more pronounced in vocational qualifications. I found that this view was generally shared among most of the participants.

The second interpretation derived from Lerato's (HM, EQ (5) Feb 2022) statement which enunciates the second possible meaning attached to qualifications by employers, was that qualifications do not only indicate knowledge and skills to employers. Using the same example of a CA qualification for the CFO position, it can be surmised that by requiring a specific qualification such as a CA, employers are using the qualification to sort out applicants who hold the qualification from those who do not have it, therefore narrowing down a list of applicants competing for the same job. Given that the CA qualification is the highest possible in the accounting field, its use as a selection criterion for the CFO position suggests that the qualification is the strongest signal of potential success for the CFO position, prompting employers to screen specifically for the qualification, and to eliminate those who do not have the CA qualification. If this interpretation is correct, then qualifications in this instance serve as both a signalling and screening device, whereby holders of the highest qualification signal their potential ability to better perform the job than the rest of other candidates, and employers screen specifically for the holders of such qualifications (Spence, 1973; Arrow, 1973), in the process discriminating against those that do not have the qualification. As discussed in (4.3.1), the use of

[18] HR, RT(5), Nono, Feb 2022

a CV also seems to support this notion, wherein recruiters screen for the highest possible signals in the CV to sift out applicants with suitable qualifications from those who do have them.

The third interpretation and possible meaning derived from Lerato's (HE, Feb 2022) statement resonates more with the credentialism perspective about qualifications, which claims that qualifications legitimise social inclusion and exclusion (Collins, 1979; Kasika, 2015). For example, by putting the CA qualification (which is the highest possible qualification within the accounting field) as the minimum requirement for filling the CFO position of a CFO suggests that the qualification is used to exclude other candidates who would have likely applied for the position, such as those with other accounting or finance degrees, but who are not certified CAs. This finding corroborates the literature that qualifications can be used to determine entrance into respectable and well-paying jobs, which are also associated with social status (Bol, 2018, p.2). As discussed in chapter 2, it can be surmised that the CA qualification is used here to legitimately exclude other potential applicants, who do not have the same qualification (Collins, 1979; Berg, 1970). Kasika (2015, p.14) suggests that when used in this way, qualifications become a gatekeeping mechanism, used to control access or entry into certain jobs and professions.

This study results also show that apart from degrees and diplomas, employers at times consider academic records to determine candidates' suitability. One participant explained that much 'as qualifications are the first important criterion for consideration of applicants, there are times when they have to expand the criterion to further probe for suitability.'[19] She explained that this often happens in cases where there is a tie between two or more applicants who are contesting for the same position, i.e., when these candidates meet all the requirements and only one must be selected. The same participant elaborated with the example that when selecting candidates for an Electrical Engineering position and there is a tie, she 'will compare the scores that all the applicants achieved in their electrical engineering module, to determine which one has more acumen in the subject.'[20] In this instance, the actual exam/test scores are used as additional criteria to select the best possible candidate between contestants, which suggests screening

[19] HR, EQ (3), Sue, Feb 2022
[20] HR, EQ (4), Sue, Feb 2022

because the higher scores signals more ability to the employers, who then screens specifically for better subject matter acumen.

The participant explained that:

> 'There are times when academic records, or scores in certain modules related to the position, are considered as additional criteria. This is usually in situations where you have to choose the most suitable candidate, especially when there is a tie, where there are two or more candidates who meet all the requirements and only one must be selected. In essence, you use the same criteria that is used by universities when selecting competing students for admission in different fields of study (HR, EQ(3), Sue, Feb 2022).'[21]

This participant further elaborated follows:

> 'In the case of Electrical Engineering for instance, I will compare the scores that all the applicants achieved in their electrical engineering module, to determine which one has more acumen in the subject. For a management position, I would consider a number of factors, such as experience as an additional criteria, or a further qualification in management such as an MBA or certificates in management.'

I found this statement to be resonating more with the human capital theory, wherein selection is based on the best performance in terms of scores within the same qualification. However, there were also elements of screening theory at play because the recruiter screens for more credentials and qualifications, over and above the initial minimum requirement. In this case, the best performers, or the one with the most qualifications, make it into the shortlist.

The main take away points from the foregoing discussion was that there was general consensus among participants that qualifications first and foremost are seen to be associated with skills and knowledge, and general aptitude to execute tasks associated with certain jobs, therefore, representing productivity according to the human capital theory. According to participants, this seemed to be 'the topmost reason why qualifications are central to the criteria for employee selection during the screening of CV.'[22] Going by this explanation, one can surmise that the

[21] HR, EQ (3), Sue, Feb 2022
[22] HR, EQ (5), Glass, Feb 2022

dominant theory for explaining employer perceptions on the use of qualifications for hiring decisions is human capital theory. According to this theory, when evaluating qualifications during the CV screening process, employers seek to select candidates who are more capable of performing the job.

Secondly, by screening for the highly qualified, employers are in actual fact trying to reduce the training costs associated with hiring decisions, as claimed by the sorting theories (Thurow, 1976). Thirdly, although qualifications often form the minimum requirements for selection, participants acknowledge that circumstances sometimes dictate that additional criteria such as a higher qualification, e.g., a master's degree or an MBA, or even exam scores (examination of academic transcripts) be deployed to get the most suitable candidate for the position, which resonates with the sorting and the credentialism hypotheses. In this sense, the highly qualified or credentialled individuals are the ones who get shortlisted to get to the next stages of the selection process, or ultimately the ones who finally get the job.

4.3.3 Some relationship exists between the worker's qualifications and their productivity

The overriding thesis that defines this study has been clearly captured in the main research question that the study attempts to answer, which was:

What meanings do employers attach to educational qualifications in hiring decisions, and what do those meanings tell us about the employers' hiring criteria of prospective employees?

Debates and contestations ensue among scholars about whether there is a relationship between qualifications and worker productivity. Theorists provide different insights on the subject, from qualifications representing productivity, to signals and screening devices and gatekeeping mechanisms. Participants were probed on their views in this regard, and they also offered different views. Firstly, some participants argue that because some qualifications comprise of both theoretical and extensive on-the-job and practical component, the possession of such qualifications show that holders are productive in their fields. For example, one participant argued that in comparison, graduates of vocational occupations are likely to be more productive when compared to those of occupations in general fields. One participant explains that 'in specialized vocational occupations, and here I am thinking of fields like engineering and related occupations, chances are that once qualified, a candidate is more likely to perform from the word

go.'[23] With regard to general fields, this participant further argued that 'in general fields like HR or communications, you have no assurance that an applicant can deliver competently from the time of employment.'[24] This participant elaborated that 'graduates in occupational fields leave training institutions fairly prepared for real world of work.'[25]

Supporting Tom's view, another participant, Nono added that the relationship between qualifications and worker productivity 'depends on the field of study the graduate followed,'[26] because the 'curriculum in vocational fields incorporates a good amount of practical, on-the-job training and simulation work, which are a good preparation for the real world of work.'[27] In general fields, some participants argue that most of the times, newly qualified graduates who are first entrants to the workforce time 'often require additional support, more training and mentorship before they could gain full mastery of the job and get to perform at the expected level.'[28]

The participant had this to say:

> 'I would say Yes and No. Let me explain. It entirely depends on the field of study, or the occupations studied for. For instance, in general fields like HR or communications, you have no assurance that an applicant can hit the ground running and deliver competently from the time of employment. This is one of the reasons that a system of internships was introduced to try and close the work experience gap. However, in vocational fields which are very specialised, and here I can think of fields like engineering and related fields such as technicians and artisans; medicine, law and even pilots for that matter, chances are that once qualified, a candidate is more likely to perform competently from the word go. This is so because training in these fields include quite intensive on-the-job, such as apprenticeships and sometimes learnerships, which by nature comprise a reasonable amount of time of practical training and simulations that prepare students for the world of work.'

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[23] HM, WP(5), Tom, Feb 2022
[24] HM, WP(5), Tom, Feb 2022
[25] HM, WP(5), Tom, Feb 2022
[26] HR, WP (3), Nono, Feb 2022
[27] HR, WP(3), Nono, Feb 2022
[28] HM, WP(4) Tumi, Feb 2022

Two findings emerge from the analysis of the preceding arguments. Firstly, I found that qualifications in specialised vocational occupations are perceived to be directly associated with productivity, which resonates with human capital theory's argument. Participants seem to confirm that graduates in vocationally specific occupations turn to elicit productive behaviour immediately after employment, compared to those qualified in general fields (Blommaert et al., 2020; Allais & Nathan, 2014). Participants believe that because the curriculum of vocational programmes combine theoretical component complemented by practical and simulation learning, and on-the-job-training, graduates are bound to be better prepared for work. Therefore, it can be surmised that human capital theory is more applicable in vocationally specific occupations, where candidates' productivity can be easily predictable as a result of the type of training they have received.

The second finding resonates with the sorting theory's claim, that qualifications do not have a direct effect on productivity, which necessitates what Spence (1973) referred to as employer learning, a situation where the employer still has to observe the new employee over time before they could certainly know their productive attributes. As one participant puts it, 'graduates in general fields often require additional training, coaching and mentoring before they settle well into their jobs.'[29] The participants recognised that additional training is necessary to close the performance gap. In this regard, it will take a while before the employer can fully discover the employees' full potential and productive capacity. This point of view resonates with Thurow's (1976) argument that employers will still appoint a graduate even if they are uncertain of their immediate productivity because they believe that a graduate, by virtue of having a qualification, was trainable, and can therefore be provided with the necessary training that will make them productive.

Yet another participant suggests that 'sometimes it depends on where graduates have trained because some institutions really prepare their students for work.'[30] This participant suggests that institutions of training also contribute significantly to the perceived quality of graduates. This

[29] HR, WP(3), Nono, Feb 2022
[30] HM, WP (2), Thembi, Feb 2022

participant reasons that some institutions really produce quality graduates who are well prepared for success in the workplace.

This participant explained that:

> 'Sometimes it depends on where they trained because some institutions really prepare their students. Remember learning institutions are not the same, just like the quality of public schools is different from that of private schools, so it is with institutions of higher learning, some really produce better quality graduates.' (HM, WP(3), Thembi, Feb 2022)

The preceding statements suggest that participants view the structure of the curriculum for vocational occupation to be adequately preparing students for the workplace, as opposed to how those in services occupations were prepared, such as HR. This finding conveys two contrasting views about the relationship between graduates and their productivity.

Although some participants ascribed worker productivity (i.e., the actual ability to perform job tasks), to the type of qualifications acquired, such as for instance those vocational occupations as a result of the intense practical training in these fields, some participants attributed worker productivity to the institutions where the qualification was obtained, as they believed that institutions played a critical role in the quality of graduates produced. What this means is that even when vocationally specific qualifications are believed to be better preparing students for the workplace given their curriculum structure, institutions where these are obtained make a difference to employers.

In summary, there were few main take away points drawn from the preceding discussion. Two differing viewpoints emerged on what employers believed was the relationship between qualifications and the worker's productivity. Firstly, some participants believe that worker's productivity was directly linked to their qualifications, in particular those in vocationally specific occupations. This was credited more to the structure of the curriculum in these qualifications, which was designed to incorporate a fair amount of practical work component to the theoretical learning, enabling significant practical learning and making graduates to become more productive upon graduating. In generic fields however, this was not the case, as evidenced by the need for more support and additional training post-employment.

This view resonates with the sorting theories' claim, where Spence (1973) argues that it takes time for employers to certainly know the worker's productive capacity. The argument here was

that qualifications could not be directly linked to productivity, and would at best, only signal a potential for such. Finally, with regard to whether institutions where a qualification has been obtained has a role to play in the graduate's productivity, the study produced two different results. Firstly, the majority of the respondents argued that in South Africa, all qualifications are regulated by the same SAQA standards, and therefore, where the qualification was obtained did not matter in the selection process. This perspective resonates with the human capital theory because employers will consider qualifications more than any other thing in the selection process. There was, however, a minority view which suggested that institutions where the qualification was obtained had a bearing in the quality and calibre of the graduates. If this point of view holds true, then the credentialism perspective would have been the most appropriate explanation.

4.3.4 Previous work experience matter in employee selection

Previous work experience emerged as another critical variable that employers consider when making selection decisions. The discussion on previous work experience and other candidates' attributes were relevant in attempting to answer sub-questions two and three, which were:

What criteria do hiring managers/officials employ when screening candidates' qualifications? and

Are these criteria the same when considering the qualifications for different engineering positions?

The importance of previous work experience has already been touched in sub-sections **(4.3.1. and 4.3.2 above)**. This study has thus far demonstrated that previous work experience, like qualifications, is one of the variables of human capital that is commonly used as a selection criterion in the hiring process (Higgins, 2019), and is often associated with labour market success (Hilal, et al., 2017; Rospigliosi, et al., 2014; van Broekhuizen, 2009). One participant explained that 'previous work experience was one of the important criteria in employee selection which together with qualifications forms the two most important minimum requirements for selection in almost all the positions.'[31]As outlined in **(4.3.1 and 4.3.2 above)**, I found that whilst work experience and qualifications formed the two foremost primary selection criterion for almost all positions, the two variables weighed differently, in relation to the job level being filled. In comparison, I found that for most entry-level positions, 'qualifications always tick the first box,

[31] HR, WE(8), Gomolemo, Feb 2022

followed by work experience.'[32]This point is consistent with literature which ranked qualifications and work experience at the top of the selection criteria (Brown & Campion, 2014); and was further demonstrated by how the CVs were ranked in the entry-level position. Participants explained that when compared with qualifications, 'work experience was not always a strict requirement for entry-level graduate positions.'[33]However, another participant explained that for these positions, 'work integrated learning programmes (WIL) such as internships and apprenticeships are important work readiness programmes that are meant to close the work experience gap.'[34] From this statement, it shows that much as work experience is not a strict requirement, it is still valued even at entry-level positions.

Secondly, when it came to management positions, I found that work experience was either weighed equal with qualifications, or at times even above them. As discussed in sub-section **(4.3.2. above)**, this point was demonstrated by two scenarios in the ranking order of CVs for the junior management position. When analysing the ranking order of the CVs for this position, I observed the following interesting scenario. Firstly, there was a candidate who possessed the highest number of years work experience, but failed to meet the minimum qualifications requirement, i.e., the candidate held an NQF 5 qualification, when requirement was a minimum NQF 6. However, the same was ranked high and given the nod for further consideration in the selection process. The second candidate held the highest level of qualifications, i.e., a master's degree in mechanical engineering, which far exceeded the minimum required, but had fewer years of work experience than required. This candidate was ranked very low and never made it to the next level of the selection process. This demonstrates the conclusion that work experience ranked higher than qualifications in management positions.

This point was supported by most of the participants, who viewed work experience as a critical requirement for management positions. For instance, participants explained that 'for any management position, work experience is a core criteria and a primary requirement.'[35] This view was supported by another participant who elaborated that 'in management positions, employees are required to supervise subordinates, allocate responsibilities, manage performance, and

[32] HM, EQ (6), Lerato, Feb 2022
[33] HR, WE(8), Gomolemo, Feb 2022
[34] HR, WE (5), Shabba, Feb 2022
[35] HR, WE(6), Gomolemo, Feb 2022

provide reports, all which require for one to have prior relevant experience.'[36] This finding resonates more with the human capital theory's claim that work experience was associated with labour market success (Hilal, et al., 2017; Rospigliosi et al., 2014, van Broekhuizen, 2009). This participant further cited the example that 'in the engineering field, managers are required to oversee performance on the shopfloor, ensuring safety requirements are adhered to, and providing guidance and team supervision on work processes,'[37] hence the requirement for prior management experience.

One participant explained it thus:

> 'You see, for any management role, one of the requirements is to supervise employees, allocate responsibilities, manage performance, and provide reports. So, one will be required to have had some prior relevant experience or some exposure in executing these tasks. In the technical fields like engineering, reasonable experience in guiding and supervising teams on work processes, etc. A manager must provide solutions on work processes on the shop floor, and therefore previous relevant work experience must always be probed, lest we employ someone with no clue.'

Thirdly, work experience also emerged as critical for also been able to compensate for inadequate qualifications, as demonstrated in the example above, of a candidate who possessed more work experience and lacked adequate qualifications. This point was supported by participants who opined that 'in certain instances, work experience can compensate for qualifications,'[38]especially in occupations like artisanship where a candidate can be employed on the 'basis of sufficient on-the-job training, even before they are declared competent through the acquisition of a Red Seal Certificate.'[39]This finding is consistent with the arguments of Humburg et al. (2013) who opined that work experience is important to compensate for situations where a candidate's grades are lower than those required for the position advertised, or the qualification held is not relevant for the position or industry.

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[36] HM, WE (6), Tumi, Feb 2022
[37] HM, WE (6), Tumi, Feb 2022
[38] HR, WE (2), Shabba, Feb 2022
[39] HR, WE(5), Shabba, Feb 2022

In agreement with the other two, Shabba added:

> 'Applied experience matters the most. Fundamentally, you must have minimum requirements in case of qualifications. However, depending on the level of the position, applied experience in senior management is important as the candidate must have been previously exposed to decision making and accountability responsibilities. I therefore think that at this level, qualifications and work experience are both very important; they both go together. Moreover, in certain circumstances, work experience can compensate for qualifications, for example, in an entry level position such as an artisan, a candidate with proven level of experience, who is not yet formally qualified or completed his qualification, i.e., who has not yet acquired a Red Seal certificate, can still be considered for a position on account of reasonable work experience.'[40]

Lastly, I also found that work experience was critical for the development of soft skills that are not taught in any classroom. One participant explained that 'very important life skills such as communication, interpersonal and socialisation skills, how to lead, dependability, and problem-solving skills among others, are learnt and acquired during the course of one's career path, giving one valuable work experience.'[41] This point of view is consistent with Ballafkih (2017) who suggests that work experience results in the development of valuable general skills that are transferable to other work environments.

In summary, four main findings emerge from the preceding discussion in relation to previous work experience. Firstly, I found that work experience worked in tandem with qualifications as a primary selection criteria when filling most vacancies. Secondly, I found that the biggest distinction between the two variables was how each of them was prioritised by employers when making selections for jobs at different occupational levels. For instance, when hiring at lower entry-level positions, the results show that employers considered qualifications as the foremost selection criterion. However, when recruiting for senior level positions which carry more management responsibilities, work experience was given upper urge as the selection criteria, even above qualifications. The results also show that even at entry-level positions, employers deploy a

[40] HR, WE(5), Shabba, Feb 2022
[41] HR, WE (4), Ben, Feb 2022

number of work integrated learning programmes such as internships, and coaching and mentoring to build up work experience, and close the experience gap in graduates. Thirdly, I found that work experience was important mediator for qualifications, in that in situations where qualifications where insufficient, work experience was considered to compensate for such a gap. Fourthly, I found that work experience was critical for the development of soft skills, which developed over time through adequate exposure.

The main take away points from the preceding discussion was that work experience was considered by employers as a very important selection criteria, equal or even more important than qualifications when considering applications for management positions, as it can sometimes compensate for irrelevant or uncompleted qualifications. However, when it came to entry-level positions, I found that work experience came second to qualifications, and was sometimes not a requirement at all.

4.3.5 Individual attributes of candidates matter in employee selection

Theoretical debate on the relationship between employment prospects and soft skills resonates more with human capital theory (Fadhil et al., 2021, p.257). Lok et al. (2021, p.384) define soft skills as abilities and traits that pertains to personality, attitudes and behaviour. They also describe soft skills as been intrapersonal and interpersonal which are difficult to observe. According to participants, assessment of soft skills or individual attributes of candidates were a vital part of the selection criteria that employers consider when making selection decisions. Participants emphasised that individual attributes such as their soft skills were important for successful performance of their jobs in the labour market. The discussion on other candidates' attributes were relevant in attempting to answer sub-question three, which was:

Are these criteria the same when considering the qualifications for different engineering positions?

Consistent with the theoretical perspectives expressed earlier, I found that apart from qualifications and work experience, participants considered an array of candidate 'abilities such as communication skills, good interpersonal skills, leadership abilities, problem solving and

resilience among others, as very important particularly for management positions.'[42] These views were consistent with Malik and Ahmad's (2020, p.1154) argument that soft skills play a vital role in developing behavioural attributes, career attributes and social and emotional intelligence of graduates, which build their communication skills, improve their efficiency and cooperation with others in professional settings. Furthermore, Malik and Ahmad (2020) also list creativity, patience, persuasion, adaptability, technological skills and organisation as very important attributes that help graduates for better candidacy in the job market, suggesting a relationship between soft skills and graduate employability. One of the participants explained that these attributes, although not 'formally taught in any classroom, were the make or break for any person in leadership or management position to succeed in their roles.'[43] This view is consistent with Malik and Ahmad (2020) that soft skills were critical for addressing competitiveness job market concerns. This view further echoed Becker's (1993) argument that by learning soft skills, acquiring new skills and perfecting old ones, workers would increase their productivity and better the performance of the firm. Furthermore, participants argued that 'employers prefer candidates who are motivated, who can work independently with little supervision, and who were self-starters with exceptionally good work ethic and were also team players.'[44]

The following was how participants expressed this view:

> 'Any employer would over and above qualifications and work experience consider abilities such as communication skills, interpersonal skills, problem solving, resilience and leadership abilities. These are always attractive attributes to employers. In addition, personality and interest, as well as cultural fit also play a significant role. Employers require an employee who is a self-starter, responsible, dedicated, and reliable and has exceptionally good work ethic and is a good team player and can work independently who require minimal or no supervision. According to me, these attributes compliment technical knowledge and qualifications and are associated with achieving success in the workplace.'

[42] HR, IA (5), Nono, Feb 2022
[43] HR, IA (4), Ben, Feb 2022
[44] HR, IA (5), Nono, Feb 2022

Over and above other candidate attributes that were considered as important during the employee selection process, I found that there were other factors that employers consider when making hiring decisions, which in certain circumstances override even the core selection criteria stipulated in job profiles. The need to comply with legislation and regulatory frameworks was another important consideration when selecting employees for hiring. Participants explained that 'the need to comply with employment equity requirements were critical because there were employment equity thresholds that the company must comply with in terms of the national economically active population (NEAP) targets.'[45]

One other participant indicated that:

> 'I want to add that there are many considerations when making an employment decision. Things like employment equity requirements are critical because there are employment equity thresholds that a company must meet in terms of the national economically active population (NEAP) targets. This is important because sometimes it overrides other criteria. Secondly, sometimes things like professional association or even licensing can be the most important consideration.'

In summary, the main take away point from the preceding findings was the demonstration that employment decisions were based on a compendium of considerations that employers take cognisance when making hiring decisions. I found that over and above educational qualifications and work experience, employers consider a wide array of other factors which include individual attributes such as soft skills and regulatory requirements such as compliance to legislation such as employment equity. I found that much as qualifications and experience superseded all criteria, there would be instances where compliance with employment equity or BB-BEE requirements may be the overriding criteria. This finding reveals that although educational qualifications were the most important selection criterion in employment decisions, it was considered in collaboration with a number of other factors.

[45] HR, IA (4), Glass, Feb 2022

4.3.6 Conclusion

In summary, the previous section presented the main findings for the study. Firstly, I found that CVs form an essential component of the employee selection process and was a mechanism through which job seekers communicate information about their qualifications, work experience and other characteristics to the potential employer. In this way, a CV serves as a tool to reduce information asymmetry between the parties in the labour market and fitted the description of a signalling and screening device used by both job seekers and employers to respectively signal or screen for potential and suitability for advertised positions. In this regard, CVs are used as a tool to sort or sift out the qualified from the unqualified, and therefore fit most within the sorting theories perspective.

With regard to qualifications, two important findings emerged. I found that the first dominant view, shared by the majority of participants, was that qualifications, especially in vocationally specific occupational fields, are associated with skills and knowledge, and indicating the aptitude to do job. I found that this belief that graduates in these fields are more work ready when compared to other fields, explains the use of qualification as the foremost important selection criterion for allocating jobs in the labour market. From this point of view, I found that there was some perceived relationship between qualifications and the worker's productivity, or their ability to do the job. This view resonates with the human capital theory's claim that schooling improves people's productive capacities, and that this is signalled by the person's qualifications. The perception also supports the theory's rationale that the education-productivity - earnings nexus was the main reason why there was willingness to invest in education and training across societies, companies and individuals alike, as well as for employers to reward the highly skilled and educated workers.

With regard to previous work experience, an important finding was that work experience, like qualifications, was a core criterion for employee selection, particularly for management positions with supervisory responsibilities and the management of resources, people and processes. As it relates to qualifications, I found that work experience was sometimes read as a different criterion to qualifications, especially when considering management positions, and in certain circumstances, it was read into the criteria of qualifications. In these cases, I found that because the curriculum structure of certain vocational qualifications embeds simulations, practical experience and on-the-job training, work experience was thus read into the criteria of the qualification, which suggests that once an individual possesses the qualification, they would

inadvertently also possess the level of experience commensurate with the qualification. Similarly, in general qualifications, which do not embed any practical component to learning, I found that employers would still make up for the work experience gap by putting graduates through WIL programmes such as internships, apprenticeships and focussed mentoring and coaching interventions. Very interestingly, I also found that work experience sometimes compensates for qualifications in situations where qualifications are not relevant for the position, or they are yet to be completed. Finally, I found that work experience is seen to be crucial for the development and acquisition of critical soft skills, such as interpersonal and team relations, communication, and problem solving among others, which are also considered as an important selection criteria by employers, especially for management positions.

4.4 DISCUSSION

This section considers the main findings to determine the extent to which they lend empirical support to or contrast with both the literature and theoretical debates on the meanings employers attach to educational qualifications when allocating jobs in the labour market. More specifically, the analysis focused on highlighting areas where findings either corroborate or contrast the main theories underpinning the study, namely: the human capital theory, the sorting (i.e., screening and signalling) theories as well as the credentialism theory. This was achieved by analysing how each of the main concepts outlined in the analytical framework were either supported or not by the empirical data. The section then determines whether the research questions were answered, and whether there was material differences between how hiring managers and HR officials viewed qualifications as a hiring criterion, and the meanings they attached to them. The section concludes by determining what the main differences among theories in the study were, and which of the theories better explain employers' perception of educational qualifications and how they are used to allocate jobs; as well as the concepts that came out more prominently in the study.

The main research question for this study sought to understand *the meanings that employers attach to qualifications and how these influenced their hiring decisions*. To answer this question, I unpacked the views of respondents in relation to the five main concepts described in the analytical framework of this study, namely: educational qualifications, worker productivity, screening and sorting for potential, gate keeping mechanism and previous work experience. This study was complemented with the use of hypothetical CVs, to determine whether qualifications were interpreted in the same way for entry-level positions and management positions. Intertwined in the discussions to

answer the main research question, is also an effort to respond to the question about *How does the screening of CVs/resumes fit in the hiring process?*

The first main concept discussed in the analytical framework was *educational qualifications (degrees and diplomas)*. The first outcome of the study deals with the correlation between qualifications and the job market. Study results demonstrate that participants view this relation in a positive way. This finding is consistent with literature which abounds with evidence that formal education affects employability and earnings (van Broekhuizen, 2009). This study results explain the rationale for the use of educational qualifications in the allocation of jobs across all occupational groups, and why qualifications are often set as minimum requirements for consideration (Higgins, 2019; Ekwoaba et al., 2015).

Of importance with this finding is that it reflects the common factor between the three theoretical perspectives, namely, human capital theory, sorting theories and credentialing theory. All the theories provide a general explanation of the use of qualifications for allocating jobs in the labour market (Arrow, 1973; Becker, 1964; Collins, 1979; Spence, 1973); and share the basic assumption that educational qualifications affect labour market outcomes such as earnings (van Broekhuizen, 2009), and that individual characteristics such as personality, qualifications, social, cognitive and technical skills and effort are always rewarded handsomely by employers (Ballafkih, 2017, p.242). Therefore, all the three theories recognise the centrality of qualification in employer hiring decisions. This study results show that both the sorting theories (Arrow, 1973; Spence, 1973) and human capital theory (Becker, 1964; Mincer,1958; Schultz, 1961) explain that qualifications communicates information about knowledge and skills and were important in clarifying the selection criteria during the first phase of the selection process, which is the CV screening phase. This finding is consistent with literature that qualifications are used to allocate jobs in the labour market are used as minimum entry requirements across all occupations, and also form the core criteria during the hiring process (Baker, 2011). Furthermore, this study results also corroborate literature that CVs are a critical mechanisms through which the job seekers communicate information about their educational credentials to employers.

The concept of educational qualifications was the foremost important concept in this study and was discussed in conjunction with three other key concepts, namely: *worker productivity*, *screening and signalling for potential, and gate keeping mechanism,* all of which were selected with the view to explain the meanings that employers attach to qualifications; perceptions which ultimately influence how they use qualifications to allocate jobs in the labour market. An analysis of these

concepts highlight the area of divergence between the theories on what qualifications represent in the eyes of the employers. In particular, it was the discussion of the concept *worker productivity* that helped to elicit the different meanings ascribed to qualifications by employers from the three theoretical perspectives. Therefore, the main area of contestation on the meanings attached to qualifications centred around whether qualifications represent productivity or not.

As demonstrated in the literature, this study results show that the most dominant view held by most participants is that employers prefer qualified individuals because they are perceived to possess requisite skills and knowledge for optimal and successful performance of their jobs. This point suggests that managers are convinced that qualifications are related with productivity, hence their willingness to pay more salaries to attract the highly qualified individuals. These views resonates with human capital theory which says that acquisition of knowledge and skills through schooling will increase people's productive capacities, and therefore attractive to employers (Becker, 1993). Similarly, individuals also pursue education and training to acquire knowledge and skills to increase their marketplace value, expertise and efficiencies to their job tasks (Xu & Fletcher, 2017), which would then increase their chances of procuring employment.

This finding also corroborates other empirical studies, particularly Moleke (2005, cited in Van der Merwe, 2010) who found that in South Africa, there was a rapid uptake of graduates in the job market, when compared to non-graduates. In this sense, knowledge and skills embedded in qualifications are read to relate to some level of productivity. As discussed earlier, this rationale explains why employers always prescribe minimum qualification requirements for each job level. Respondents confirmed that jobs in their companies were graded according to levels of responsibility, and as such have minimum qualification requirements assumed to be commensurate with the skills and knowledge required for the job category. Therefore, the higher the job responsibilities, the higher the minimum qualification requirements. This in essence reveals the knowledge and skills level required. The views expressed here resonates with human capital theory, which associates qualifications with productivity.

The notion that qualifications are associated with productivity is further demonstrated by how employers evaluated CVs. This study results show that for entry-level jobs, qualifications always ticked the first box. Candidates with the highest qualifications and those who met minimum requirements were ranked high. What this suggests is that because qualifications are seen to be representing some level of knowledge and skills, employers when screening for qualifications in CVs, are also attempting to predict the job applicant's future job performance as suggested by

(Brown & Campion, 1994; Higgins, 2019). As Higgins (2019) argues, such predictions are made possible because it could be reasonably inferred that someone in possession of an accounting degree had a strong chance of being successful as an accountant or auditor. The assumption here is that qualifications are read to represent the knowledge and skills which help people to understand and apply prudent accounting principles, among other things. The views expressed above resonate with the claims of human capital theory. For instance, Schultz's (1961; cited in Kasika, 2015, p.85) study on the rate of returns to educational qualifications found that qualifications are critical for the development of a number of individual qualities necessary for successful performance. For instance, Kasika (2015) lists the following abilities, to: follow and apply work instructions to work tasks; build healthy and professional relationships; develop effective communication; receive and process new information; evaluate and adapt to a changing work environment; help reduce subjective uncertainty and doubt; and finally increase the ability to adapt to new technology which increases the individual's innovative and creative capacities (p.85).

Consistent with literature, this study results also corroborate the argument that the productive effect of education are more clearly expressed in qualifications in vocationally specific occupations, wherein graduates often enter the job market better armed with practical skills and knowledge that help them to succeed, when compared to their counterparts who held qualifications in general streams (Allais & Nathan; 2014; Blommaert et al., 2020, p.721; Brunello & Rocco, 2015). As shown in literature, this study results show that vocational occupations such as engineering and medicine are distinguished by their curriculum design, which incorporates three important components, namely, theoretical learning, practical learning, and on-the-job-training, all which impart critical knowledge and skills to student, making them more job ready when compared to non-vocational training (Kasika, 2015, p.15). This finding is consistent with human capital theory which postulates that holders of vocational qualifications tend to immediately elicit productive capacities when they first arrive at the workplace (Allais & Nathan, 2014; Blommaert et al., 2020; Brunello & Rocco, 2015). From this perspective, individuals invest in schooling to improve their productive capacity and economic value by acquiring knowledge and skills (often expressed in qualifications), which in return improves their chance of securing well-paying jobs (Becker, 1994).

In contrast to the *worker productivity* concept, the *screening and signalling for potential, and the gate keeping mechanism,* were discussed to convey a contrasting theoretical perspective on what

employers read into qualifications. The second meaning ascribed to qualifications by employers is drawn from the less popular view from the respondents. This study results show that some participants contend that qualifications are not always reflective of an individual's ability to do the work. These participants argue that sometimes highly qualified individuals may still require support and guidance before they could gain mastery of the job. This reasoning is consistent with literature wherein signalling theory postulates that qualifications at best just signals potential ability (Arrow, 1973; Spence, 1973). As discussed in Chapter 2, literature has shown that from the sorting theories' perspective, individuals choose to obtain higher levels of education not necessarily because it has a direct effect on their productivity, but rather because it strengthens their signalling capacity to employers (Arrow, 1973; Lofstrom, 2000, p.2; Spence, 1973).

Following this rationale, therefore, intelligent workers elect to acquire higher qualifications to demonstrate their higher efficiency levels to employers, thereby distinguishing themselves from the low-productive workers (Lofstrom, 2000). As literature has shown, when educational qualifications are used this way, they become a sorting device, separating those who are perceived to be more capable from those who are not (van Broekhuizen, 2009; Weiss, 1995). In the same way, employers use the highest qualification as a measure to screen for high-productive workers, eliminating those with lower qualifications, who are presumed to be less productive (Weiss, 1995). This rationale is clearly corroborated in this study, with the results showing that employers specifically set qualifications as minimum requirements for all positions that needs to be filled. This assertion is demonstrated by the example from the study data, which shows that employers set the highest possible qualification of CA, coupled with professional registration, as a minimum requirement for the job of a CFO. The CA qualification in this case distinguished the holders from others and a strong signal that they are high-productive workers. By demanding the CA qualification, employers therefore make inferences about the productive capacity of the applicant. According to literature, this is tantamount to a purchase under uncertainty (Spence, 1973). This finding resonates with the claims of the sorting hypothesis. According to literature, when used this way, qualifications become a screening and sorting device, and education is used to filter variances in proficiency that employers cannot reward directly (van Broekhuizen, 2009; Weiss, 1995, p.136).

According to literature, two interpretations can be drawn from the preceding argument. The first is that employers prefer the highly qualified individuals because they can make inferences about

the individuals' productivity from the qualifications (Graetz, 2017, p.2; Sun & Wang, 2014, p.161). The second is that employers are cognisant that people may elicit productive abilities not because they were obtained in education or through schooling, but rather because schooling or education has helped reveal these inborn abilities (Graetz, 2017, p.2; Sun & Wang, 2014, p.161). This notion supports the idea that while productivity may be enhanced through education, those improvements may not be immediately recognisable to the employers upon hiring (Sun & Wang, 2014). As the screening theory claims, when employers screen for qualifications, they are actually screening individual attributes such as perseverance, motivation and superior intelligence among others, all of which are preferred by employers (Arrow, 1973; Weiss, 1995, p.133). Consistent with literature, this study shows that over and above qualifications, employers screen for soft skills such as problem solving, motivation and leadership, as well as communication skills, particularly when seeking to fill vacancies for management positions (Fadhil et al., 2021, p.257; Lok et al., 2021, p.384; Malik & Ahmad, 2020, p.1154). In this sense, qualifications serve as a screening and signalling device.

The third meaning that employers attach to qualifications is revealed in the discussion of the concept of *gatekeeping mechanism*. This study results show that in seeking candidates with a CA qualification for the position of CFO, for example, the employer is intentionally excluding candidates who do not possess this qualification, thereby using the qualification as a mechanism to control and create a monopoly of access into the CFO position. This finding resonates more with the credentialism theory (Berg, 1970; Collins, 1971). According to this theory , the educational qualifications have no effect on the individual's productive capacities, but rather have to do with moderating between inclusion and exclusion in different organisations (Pfeffer & Skrivanek, 2018; Bol, 2018, p.2). In this way, the CA qualification is used as an access control mechanism (gate keeping device) into the position or even profession (Collins, 2019; Allais & Nathan, 2014, p.111). Possession of a qualification such as a CA puts one in the front row in the queue for the CFO job (Bills, 2003; Brown, 2001). The credentialism theory claims that individuals acquire more educational credentials mainly for two reasons. The first one is to gain a competitive edge in securing good and better paying jobs in highly competitive labour markets (Collins, 2019). The second reason is that in regulated occupational environments such as engineering, acquisition of more credentials relates to occupational dynamics wherein access into the profession is determined through higher educational credentials (Milian et al., 2020).

In both the *screening and signalling for potential or the gate keeping mechanism* instances, the CA qualification gives the holder a competitive advantage, putting them right in front in the queue for the CFO position. The first instance presents the CA qualification as a positional good, giving those who possess it a competitive advantage in the job queue. Secondly, the same qualification becomes a social closure, both giving its possessor the competitive advantage, and simultaneously creating a barrier of access to further competitors. This view differs with the human capital theory's claim that qualifications are viewed as synonymous with productivity. It can be surmised that when evaluating job applicant's CVs, employers are actually screening for qualifications, among other things, to determine potential for productivity or good performance.

The foregoing discussion was critical for answering the main research question, about the meanings employers attach to educational qualifications, and how these meanings influence their hiring decisions?'

This study sought to determine whether employers attached different interpretations to qualifications when evaluating CVs for two different positions. The results of this study reveal no variances in the meanings that employers read into qualifications when evaluating the CVs for both positions. What this implies is that the three meanings of qualifications that emerged from the preceding discussion were applicable to both the positions. The only main difference was the order of importance allotted to qualifications as a selection criterion. In the entry-level position, this study results show that qualifications alone, as an indication of acquired knowledge and skills, are enough to secure an applicant the job. This suggests that in this case, productivity is determined by only the skills and knowledge possessed by job applicants. However, in the second position, the results show that skills and knowledge (i.e., qualifications) attained through schooling and training alone were interpreted to not be enough to make one more productive, requiring a combination of work experience and soft skills. What this implies is that employers viewed productivity to be influenced by a combination of factors.

These results suggest that the three meanings that employers attach to qualifications, are consistent with literature. My analysis shows that employers read qualifications in vocational occupations to mean knowledge and skills that are needed for employees to effectively perform their jobs (Becker, 1993; Schultz, 1961; Blommaert et., al, 2020; Allais & Nathan, 2014). As literature shows, this perspective was founded on the rationale that employers are driven by the need to be profitable and would require workers that would enhance their profitability and competitive advantage. Skilled and competent workers who are adaptive, motivated, agile and

technologically savvy are the calibre of candidates mostly preferred by employers to achieve this goal (Hung & Ramsden, 2021, p.8; Milian et. al., 2020).

This study results also show two less popular interpretations about the meanings of qualifications emerged from the study. These are that employers also read qualifications to mean signals which they make inferences about potential productivity, and use to screen for suitable candidates (Arrow, 1973; Spence, 1973). Consistent with literature, the study shows that employers see qualifications as signals of productivity and use them to screen the most suitable candidates. This interpretation suggests that employers place their faith on the signal qualifications represents, since they cannot certainly know whether they are productive or not, until after hiring them.

Lastly, this study revealed that qualifications were also acquired for social status. Study participants argue that it is possible for individuals to pursue certain qualifications to earn social recognition, class and status, and not necessarily because qualifications make them more skilled and knowledgeable. What this suggest is that some people are motivated to pursue qualifications in elite occupations such as engineering, law, and medicine for example, because of the social status and class associated with these professions. This view support the argument that qualifications play a role in securing access into elite professions, which also bolsters people's social class and status. In this way, qualifications become some sort of a gatekeeping mechanism (Abbott, 1988; Bills, 2003; Bol, 2018; Collins, 1979; Milian et.al., 2020; Pfeffer & Skrivanek, 2018).

The concepts of previous work experience and other individual attributes were discussed in relation to answering the question about the criteria hiring managers employ when screening candidates' qualifications as well as whether these were applicable when considering qualifications of different engineering positions? As discussed in the literature, the study results show that employers consider a compendium of factors when making hiring decisions, with work experience and soft skills becoming more important when screening CVs for management positions. Results show that work experience made the core selection criteria together with qualifications for almost all positions in the organisation, although not a strict requirement in entry-level positions (Higgins, 2019). Results also show that work experience weighed either the same or sometimes more than qualifications in management positions (Higgins, 2019). This finding was consistent with human capital theory's claim that work experience, similar to qualifications, was associated with labour market success (Hilal et.al., 2017; Rospigliosi et. al., 2014; van Broekhuizen, 2009). This study produced four important findings in relation to work

experience. Results also show that even in cases where work experience was not a strict requirement, its importance is shown when graduates are put in WIL programmes to make up for the graduates' lack of prior experience.

In summary, this study results shows that work experience plays three critical roles, which include (i) being more important than qualifications when recruiting candidates for management positions (Ballafkih, 2017; Higgins, 2019); (ii) compensating for qualifications in situations where a candidate does not meet minimum qualifications (Humburg, et al., 2013); and (iii) that work experience is critical for developing soft skills such as communication skills, interpersonal skills, dependability, socialisation skills and problem-solving skills (Ballafkih, 2017; Fadhil et al., 2021, p.257; Lok et al., 2021, p. 384; Malik & Ahmad, 2020, p.1154).

In the final analysis, a few main take away points emerge in the discussion of study results. Firstly, this study results corroborate literature that qualifications do indeed matter in employee selection, and that there are primarily three main perception that employers have about them. Study results show that predominantly, employers associate qualifications productivity, i.e., the ability to do the job, and represents skills and knowledge acquired through formal education and training. Study results further suggest that this is more evidenced in vocational occupations, which are mostly characterised by intense on the job training and practical learning, which often contribute to the productive capacity and job readiness of graduates. This study results also show that in entry level positions, which often targeting first time entrants into the labour market, qualifications alone were sufficient to secure the graduate a job. However, for management positions which carry supervisory responsibilities, qualifications need to be complemented with previous work experience in order to translate into worker productivity. In this regard, results elevate the critical role of work experience and soft skills.

Secondly, this study results also reveal that prior to making the hiring decision, managers are not always certain about the productive capacities of job candidates and new recruits (Spence, 1973). In this regard, hiring is tantamount to a gamble by employers, or as Spence (1973) calls it a purchase under uncertainty. Consistent with literature, the results show that to mitigate this risk, employers often use qualifications a signals of productivity, and the higher the qualification, the more they are perceived to represent productivity, making qualifications a more reliable currency for transacting in the labour market (Milian et. al., 2020; Spence, 1973). For job seekers, qualifications equate passports for securing employment (Milian et al., 2020). Viewed from this vantage point, qualifications then fit the description of a screening and signalling device as

claimed by the sorting hypothesis (Arrow, 1973; Spence, 1973). Thirdly, this study results show that the least popular view in the study associates qualifications with a mechanism that employers use to either close out or open entrance into certain positions and professions.

CHAPTER 5: CONCLUSIONS

5.1. INTRODUCTION

Understanding the complex link between education and labor market outcomes, in particular, how the labor market assigns jobs based on educational credentials, was the starting point of my research. The goal of the study was to investigate the significance that companies place on qualifications and how this affects how they hire new employees. With the use of fictitious CVs, this study's use of the descriptive phenomenological methodology was creatively enhanced by replicating the real-world hiring process. The positions of a junior manager in Mechanical Engineering and an entry-level Electrical Engineering Technician were utilized as examples. The primary goal of the two roles was to determine if employers attached the same value to education when deciding whether candidates were qualified for these positions or whether they placed a different value on education. To entice applications from the labor market, a fictitious job description was created for each post, which was followed by the submission of fictitious resumes for each. In a mock hiring process, study participants were given these resumes and job descriptions. The major objective was to ascertain how employers would rank resumes and what significance they ascribed to qualifications when considering candidates for the two vacancies. Through focus group interviews with a sample of 17 individuals from four SOCs that employ a range of engineering experts, their ranking criteria and justification were further explored. This chapter presents a summary of the study's key conclusions, findings, study recommendations, and study limitations.

5.2. SUMMARY OF MAIN FINDINGS

The key research findings regarding employer perceptions of qualification meanings as explored in five different themes are summarized in this section. It is crucial to emphasize that the scope of analysis in this study was restricted to the initial stage of the hiring process, which is why the CV screening stage was the main focus. Firstly, the study discovered that CVs are an essential part of the hiring process since they help to close information gaps in the labor market. According to the study, a CV can compensate for the employer's ignorance of a job application. The study came to the following important conclusions on the meanings employers give to

qualifications. The study discovered that qualifications genuinely communicate information about knowledge and abilities, which is consistent with both the human capital theory and the sorting theories (Arrow, 1973; Becker, 1964; Spence, 1973). This explains why credentials are important in determining how jobs are distributed on the labor market.

According to the survey, qualifications have three key connotations for employers. The first was that education signifies knowledge and skills, and that knowledge and skills lead to productivity. The productive effect of education is more pronounced, according to the study, in occupations with specialized training, such as engineering, law, and medicine. This helps to explain why graduates in these fields land jobs more quickly than those in more general occupational fields, like human resources management. According to the study, the second interpretation that employers give to qualifications is that they serve as a possible ability signal to potential employers. The study also discovered that qualifications were linked to reputation, social class, and recognition, elevating individuals who possess them in society. From this perspective, credentials were seen as a gatekeeping tool, limiting and restricting entry into prestigious professions.

The study also discovered that productivity was linked to what graduates should actually be able to achieve once they had earned their degrees. Although qualifications did reveal knowledge and skills, the study concluded that qualifications by themselves did not increase worker productivity. The study discovered that a worker's prior job experience was a crucial complementary factor in increasing productivity. According to the survey, work experience was even more crucial for the selection of candidates for managerial positions and occasionally took the place of educational requirements as a recruiting factor. The study also discovered that, in situations where qualifications fell short of the minimal standards for appointment, work experience might occasionally make up for deficiencies in qualifications. This idea supports the use of work-integrated learning initiatives like internships and apprenticeships, which are essential for easing graduates' transition into the workforce. Last but not least, the study discovered that job experience was essential for the development of soft skills including leadership, teamwork, communication, and problem-solving abilities, among others.

5.3. STUDY LIMITATIONS

This study makes no claims to be typical of how recruiting decisions are made across the board in South Africa's State-Owned Companies or the engineering profession as a whole. This has

some limitations, such as the fact that I only spoke with a small number of employers and that I only interviewed 17 participants from four SOEs. Furthermore, my sample was not typical and simply provides anecdotal information about how qualifications affect hiring decisions by employers. Nonetheless, the survey does provide some intriguing insights into how engineering employers view qualifications when making hiring decisions. Also, the study used CVs as an extra tool to strengthen and improve the data collection methodology. The use of CVs caused additional constraints to the study because not all study participants were able to analyse and assess the CVs in-depth. This was attributed to a lack of time or time restrictions. Secondly, a CV's use as a selection tool has the drawback of being unable to reveal intangible aspects of a job applicants, such as personality traits, which can only be exposed during and after an interview.

5.4. RECOMMENDATIONS FOR FUTURE RESEARCH

This study's sole objective was to look at the meanings that employers place on the educational qualifications when recruiting engineering professionals. Further investigation would be interesting to see if qualifications in more generic fields, like human resources and communications, would have the same connotations as those in engineering, and if hiring decisions would be more influenced by the human capital theory, which views qualifications as a stand-in for knowledge and expertise, as is the case in engineering.

This study also took into account the utilization of curriculum vitae as a crucial tool for learning more about job applicants. While a CV remains one of the most reliable traditional methods of disseminating information about job applicants, the survey found that employers are increasingly turning to social media platforms (including Facebook, Instagram, and LinkedIn) to learn more about job seekers. Presently, the biodata found in applicants' CVs, which mostly contains information about qualifications and work experience, is what most heavily influences companies' hiring decisions.

More studies may be needed to explore the use of social media platforms in the hiring process, and how this affects the traditional use of a CV as a recruitment tool. These studies may focus on evaluating how the job applicants' biodata collected from social media affects hiring decisions and how this is rated in relation to CV data on educational credentials and experience. It will be required to draw conclusions from the usage of new employee selection tools in order to clarify additional factors that companies take into account when interviewing candidates and to determine whether or not qualifications continue to be the key factor in employee selection.

Furthermore, future research could explore the following areas which where not the focus of this study. Firstly, further research could focus on investigating whether qualifications in more generic fields such a human resources or communications have the same implications for employers as those in the engineering field. Last but not least, I have discovered that although educational credentials and prior work experience are the most important factors employers take into account when reviewing CVs of job applicants, there are other candidate characteristics, such as personality traits and cognitive assessments, that employers take into account. Therefore, future studies can explore the influence of factors such as personality traits and cognitive assessments and weigh them against qualifications as criteria in employee selection and hiring decisions. It is not always clear which personality traits employers find to be more critical. It will become clearer with more research in this area which candidate characteristics employers value the most.

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APPENDICES

APPENDIX A: PARTICIPANT'S INFORMATION SHEET

Dear Participant

My name is Abram Sello Sekokope. I am a part-time M.Ed. student in the Wits School of Education. I am currently conducting a research study in which I investigate the ways in which educational credentials influence employers' hiring decisions. I am inviting you to participate in this study by participating in short (approximately 1 and a half hours) focus group interview. Your participation will be kept anonymous and you will not be personally identified in the final report of this research.

I must stress that your participation in this research is voluntary, and should you wish to withdraw you may do so at any time.

The results of the survey will not be linked to any individual in the final report, this research is undertaken solely for academic purposes and data collected will not be disclosed.

I thank you in advanced for your willingness to participate and look forward to working with you! Please feel free to contact me if you have any questions.

Yours sincerely

Abram Sello Sekokope (student number: 2165426)

2165426@students.wits.ac.za

083 765 2221

APPENDIX B: PARTICIPANT CONSENT FORM

Please fill in the reply slip below if you agree to participate in my study called: **Investigating the ways in which educational credentials influence employers' hiring decisions,'** conducted in partial fulfilment of the requirements for a master's in education degree qualification at the University of the Witwatersrand.

My name is: Treasure Mngomezulu

Permission for the focus group interview

I agree to participate in the focus group interview for this study. YES

Informed Consent

I understand that:

- My name and information will be kept confidential and safe and that my name and the name of my organization will not be revealed.
- I do not have to answer every question and can withdraw from the study at any time.
- All the data collected during this study will be destroyed within 3-5 years after completion of this project.

Sign_____ Date 04 March 2022

APPENDIX C: PERMISSION TO CONDUCT THE STUDY

05 January 2021

The Group HR Executive

Denel SOC Ltd (Pty)

Johannesburg

Dear Mr. Teboho Moloi (pseudonym)

I hereby request your permission to conduct a study within the Human Resource Division at your five Operating Divisions. The title of my study is 'Investigating the ways in which educational credentials influence employers' hiring decisions.'

It is undeniable that educational qualifications play a critical role in employers' selection during the recruitment process. However, very little is understood how exactly employers use these in making the final hiring decisions.

This research aims to investigate ways in which educational credentials influence employers' hiring decisions and seeks to understand how employers use and interpret information about qualifications when hiring engineering professionals at different occupational levels. Among others, the study will attempt to answer the following research question: "What do employers make of the individuals' educational credentials in hiring decisions, and what do they think credentials tell them about prospective employees?" as well as "What factors and considerations do employers raise when discussing the CVs of potential candidates at different levels of employment?"

Artificial Curriculum Vitaes (MOC CVs) will be distributed to selected participants to help me understand how the selected hiring managers interpret information about educational qualifications when selecting potential job candidates. This will be followed by focus group interviews, comprising three participant per OD. The interview will not be longer than one and a half hours. This will be conducted either face to face or electronically. Data collected and reported from the interview will be kept anonymous and confidential. In addition the research participants will not be advantaged or disadvantaged in any way. They will be reassured that they can withdraw their participation at any time without any penalty. There are no foreseeable risks for participating in this study. The participants will not be paid to partake either.

Thank you.

Yours sincerely,

Abram Sello Sekokope (student number 2165426)

2165426@students.wits.ac.za (083 765 2221)

APPENDIX D: ARTIFICIAL CURRICULUM VITAES

D1.1: ELECTRICAL TECHNICIAN POSITION-ENTRY LEVEL

D2.1 JUNIOR MANAGER: MECHANICAL ENGINEERING