Exploring parents' perceptions of intelligence across gender: A systematic review

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Supervised by

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DECLARATION

A dissertation submitted in partial fulfillment of the requirements for the degree of Master of Social Science in Educational Psychology in the School of Applied Human Sciences, College of Humanities, University of KwaZulu-Natal

I, *Nolitha Duntsula,* declare that:

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ABSTRACT

This thesis focuses on the parents' perception of intelligence. It is important for socialisation of future citizens. Parents' perception of intelligence changes through the cause of time. The study aims to describe parents' perceptions of intelligence and how parents perceive intelligence today as compared to previous studies. This was a systematic review, that gathered and analyzed existing information from secondary sources. The study employed the social constructionism theoretical framework, in the interpretivist paradigm. The study focuses on discourse analysis and used the inclusion and exclusion criteria to determine the most relevant literature to review. The study sample was one book and ten journal articles were reviewed. The review was guided by a critical discourse analysis guide. The study finds that on average, females seem to be stronger than males in verbal fluency, writing, and perceptual speed, especially when they turn two years old. However, males tend to be stronger in visual-spatial processing, science, and mathematical problem- solving starting at the age of three. In addition, differences in intelligence are partially caused by factors such as family background, socio-economic status, school quality, and parental educational background. Even though females seem to be stronger than men in verbal fluency, writing, and perceptual speed. The study concludes that there are no significant differences in intelligence across genders. Therefore, the study recommends that prospective researchers continue with this study through empirical research in a South African context to gain an in- depth insight into how parents perceive intelligence across gender.

Keywords: *Gender, intelligence, perspective, parent, social constructionism*

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CHAPTER 1

INTRODUCTION

1.1 Background and context of the study

The concept of intelligence is one of the most studied phenomena over many centuries (Sternberg, 1990; Sternberg, 2012). However, its definition remains unknown and highly controversial. This may have resulted from the fact that individuals perceive, define, and measure intelligence differently in accordance with gender, culture, context, language, beliefs, and race (Furnham, 2000; Laher & Cockcroft, 2013; Sternberg, 2000). The disagreement and arguments surrounding what makes intelligence are various; however, the most common conceptualisations of the phenomenon pertaining to the idea related to multiple intelligences and theories attached to the general factors of intelligence.

Theorists such as Alfred Binet developed the first intelligence test in 1904 and later introduced the concept of mental age or sets of abilities possessed by individuals of specific age groups (Laher & Cockcroft, 2017; Taub & Hayes, 2000). The British psychologist, Charles Spearman, in 1904 developed the concept of general intelligence or *g* factor and asserted that the prevailing factor is the most critical entity that underlies all intelligent behaviours (Bakhiet & Lynn, 2015; Lynn, 2015; Taub & Hayes, 2000). Spearman's work then fostered the development and use of IQ tests to quantify intelligence.

However, Spearman's work generated intense controversy since other theorists such as Howard Gardner hardly shared his views that intelligence is a single entity (Gardner, 1985; Laher & Cockcroft, 2017; Sternberg, 2004). Gardner perceived intelligence as comprising multiple aspects and that people possess these different aspects in varying degrees (Gardner, 1983; Laher & Cockcroft, 2013). He later developed the multiple intelligences theory, which later gained partial support from Sternberg (1985). Stenberg (1985) argued that an individual needs only three sets of skills, which are analytical, creative, and practical, for them to survive in their immediate environment. Sternberg (1990) agreed with Gardner on the notion that intelligence is not a single entity, although he disagreed with him on the point that the concept comprises multiple components. Later, Sternberg developed the triarchic intelligence theory from this assumption, given that "tri" means three (Sternberg, 2012). Although many comprehensive

theories have been developed to conceptualise intelligence, to this day, theorists have struggled to reach a consensus on what exactly entails intelligence.

1.2 Problem statement

Globally, intelligence is conceptualised differently. However, the most dominant conceptualisation is the Western one. Due to its dominance, the Western conceptualisation has ultimately imposed itself on different countries, including Eastern, Asian, and African countries (Laher & Cockcroft, 2017). Consequently, this poses challenges in the field of psychology. Western theories have been used to make decisions and conclusions that determine intelligence. It is thus have been problematic for people to rely on the Western conceptualisation of intelligence and further use these Western theories to influence practice in the African context (Thaler et al., 2015). It is important to study parent's perception of intelligence because previous studies conducted on parent's perspectives of intelligence across genders have found that males estimate their intelligence as higher than that of females and that in general, individuals estimate their fathers' intelligence to be higher than their mothers (Muntoni & Retelsdorf, 2019). Parental beliefs about children's intelligence are a potentially important area of research owing to the effect these ideas have on parental rearing and expectations (Raty & Kärkkäinen, 2011). Therefore, it is imperative for researchers, academics, and professionals in the field of psychology to study the phenomenon even further and obtain a deeper understanding thereof.

1.3 Purpose of the study

The study looks at the parents' perception of intelligence across gender. It looks at how parents perceive their children's intelligence either male or female. The data to be presented indicates that many studies have been conducted on intelligence in South Africa (Bakhiet & Lynn, 2015; Laher & Cockroft, 2013). However, most of these studies have mainly focused on teachers' perspectives of intelligence across gender, thus creating a gap in the literature that depicts how parents perceive intelligence across gender. Therefore, the notions of parents' perception of intelligence across gender in South Africa remains unexplored. Hence, the purpose of this study is to explore parents' perception of intelligence across gender. The findings of this study are intended to educate both the general public and practitioners working within the field of psychology and related fields about how parents perceive intelligence across gender.

1.4 Significance of the study

Intelligence has been defined as an individual's capability to learn from their own experiences,

thus enabling them to adapt to new environments (Laher & Cockcroft, 2013; Sternberg, 2004). This definition of intelligence implies that intelligence plays a crucial role in individuals' survival and adaptation to their environment. Studying people's conceptualisation of intelligence may help individuals better adapt to their environment. It gives them insights into why some individuals can better adapt to environmental challenges than others. Such an understanding can help mental health practitioners working with clients who are experiencing challenges related to their mental health to understand their clients better which, in turn, challenges them to improve their services to better suit their clients' needs.

Secondly, how individuals perceive intelligence influences how they view their intelligence and that of others. Thus, for individuals to understand the assumptions that they make about their intelligence and that of others, it is essential to learn about individual conceptions of intelligence (Laher & Cockcroft, 2017; Sternberg, 2000; Sternberg, 2012). Thirdly, a lack of knowledge about how a particular community or cultural group perceives intelligence can lead to unintended misconceptions and marginalisation of that group, as seen in the case where Western-developed IQ tests are administered to indigenous groups (Laher & Cockcroft, 2013).

1.5 Research objectives

The objectives of this study were:

1. To analyse how parents perceive intelligence across gender
2. To review parents' perceptions of how their educational background influences their children's intelligence across gender
3. To determine if gender influences parents' conceptualisation of intelligence.

1.6 Research questions

The study was guided by the following research questions:

1. What are parents' perceptions of intelligence across gender?
2. How do parents perceive their educational background and its influence on their children's intelligence across gender?
3. How does gender influence the conceptualisation of intelligence?

1.7 Scope and limitations of the study

Conducting a systematic review was challenging and finding a sufficient number of relevant studies was a limitation. This systematic review was limited to 11 studies which focused on

parents' perception of intelligence across gender. The process of reviewing, analysing and synthesizing data was time-consuming. Purssell and McCrae (2020) stated that the process of conducting a systematic review is subject to biases which can either be because of language or publication. Publication bias often occurs when the reviewer selects studies that are positive for their study but excludes studies that may have a negative impact on their study (Purssell & McCrae, 2020). The researcher had to ensure that such biases were prevented by going through a thorough selection process which included all the relevant studies. Furthermore, copyright breaches were prevented by including references and studies which are in the public domain. Therefore, permission and ethical clearance were not required from the publishing authors.

1.8 Definition of terms

Family background- refers to the social, cultural, and historical context in which a family exists and functions. It encompasses various aspects such as family structure, values, roles, and functions (Bjorklund & Salvanes (2011).

Gender stereotype- is a widely held belief or generalisation about the behaviours and characteristics attributed to women and men (Mauvais-Jarvis et al., 2020).

Family Economics- applies economic concepts such as production, division of labour, distribution, and decision- making to the family. It is used to explain outcomes unique to families such as the decision parents make for their children and dowry payment using economic analysis (Ssewamala et al., 2015).

1.9 Outline of the dissertation

This dissertation consists of five chapters as summarised below:

Chapter 1: Introduction

This chapter constituted an introduction to the study. It covered the study's background, contextualisation, significance, and study purpose.

Chapter 2: Literature review

The second chapter will present the literature review and provide the history and origins of the concept of intelligence. It will also discuss theories of intelligence, and how intelligence is currently conceptualised within the field of psychology. Finally, the chapter will discuss social constructionism, which provides the study's theoretical framework.

Chapter 3: Methodology

Chapter 3 will outline the methodology employed in soliciting data for the study. It will describe the data collection and analysis processes, as well as the ethical considerations upheld in the study.

Chapter 4: Findings and Discussions

Chapter 4 will present the findings emanating from this study. It will employ the thematic analysis technique in analyzing the collected data. It further discusses the results of the study.

Chapter 5: Conclusion and Recommendations

The final chapter will provide a detailed conclusion from the findings of the study. It will discuss the theoretical implications of the study, as well as recommendations for future research based on the findings of this study.

1.10 Conclusion

This chapter outlined the background and context of this study. It also discussed the purpose and significance of the study. The chapter further outlined the structure of the dissertation, delineating the major preoccupations of the five chapters that make up the entire dissertation. The next chapter provides a literature review focusing on the concept of intelligence, as well as a discussion of the theoretical framework underpinning this study.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the relevant literature within the field of intelligence to explore and understand parents' perceptions of intelligence across the gender spectrum. It first looks at the theories that have influenced the development and conceptualisation of intelligence, looking at how theorists perceive intelligence. Secondly, the chapter focuses on a discussion of how parents perceive intelligence across their children's gender, giving insight into whether parents perceive their male children as more intelligent than their female counterparts, and vice versa. Thirdly, the study reviews parents' perceptions of how their educational background influences their children's intelligence across gender. The last section of the chapter discusses the theoretical framework guiding this study.

2.2 Defining intelligence

Researchers have offered various definitions of intelligence. According to Sabbah and Abd Aldin (2020), intelligence can be explained through a diversity of theories. In the early 1900s, Alfred Binet regarded intelligence as a concrete entity, replicating the power of the human mind. Eysenck (1979) conceptualized intelligence as a biological phenomenon, and he proposed that the brain comprises many pieces and processes that essentially work as a unit. According to him, intelligence is a function related to how efficiently that cognitive unit processes information. He then argued that intelligence is primarily a biological function. He went on to assert that intelligence is not a fixed entity, but it changes in many ways throughout an individual's lifetime (Eysenck, 1979; Schneider & McGrew, 2018). Sternberg (1983) proposed that intelligence is a cultural concept that cannot be defined outside of cultural beliefs, and therefore will differ from one context to the next. The term intelligence is one that surfaces many contradictory definitions. One group believes that intelligence is made up of one entity while another group argues that it is made up of many entities or abilities. Many theorists over the years have attempted to define intelligence but there has not been one theory that seems to capture it perfectly. This implies that there is no blanket approach to defining intelligence, and Sternberg (1983) agreed with the statement when he said there is no one way of defining intelligence.

In addition, the development of intelligence quotient (IQ) measurement tools is increasingly

used in South Africa, the concept of intelligence remains a mystery, and yet the IQ tests have emerged as by far the best tool to measure it. The Western perspective of intelligence is the one being used as a blanket approach, which is problematic, as documented by Foxcroft (2004) in Sabbah and Abd Aldin (2020). Intelligence, all over the world and in various cultures, is understood as the capacity to think and solve problems using knowledge gained through different experiences and the ability to adapt to new and unfamiliar situations (Forsythe, 2019). Today, professionals from different contexts believe that intelligence is basically an ability to think, understand, and apply that information to how individuals live their lives (Mokoena, 2013). While there are different definitions of intelligence, for the purpose of this study the researcher focuses on three major theories of intelligence that are discussed below: Gardner's multiple intelligences theory, Sternberg's triarchic intelligence theory, and Cattell-Horn-Carroll's (CHC) cognitive ability theory.

2.3 Theories of intelligence

2.3.1 Howard Gardner's multiple intelligences theory

Gardner's (1983) multiple intelligences theory defines intelligence as non-unitary; thus, there are multiple varieties of intelligence, which include: linguistic intelligence, mathematical intelligence, spatial intelligence, musical intelligence, bodily kinetic intelligence, intrapersonal intelligence, interpersonal intelligence, naturalistic intelligence, and existential intelligence. All these nine varieties of intelligence exist in a person, although they present at varying degrees of competency (Gardner, 1983; Yavich & Rotnitsky, 2020).

The multiple intelligences theory was propounded by Howard Gardner in 1983 (Yavich & Rotnitsky, 2020). The theorist identified different categorisations of human intelligence in his book, *Frames of Mind: The Theory of Multiple Intelligences* (Gardner, 1983; Chen & Gardner, 2022). Gardner (1983) categorised intelligence into nine groups, which are known as the nine disciplines of intelligence. Gardner's (1983) definition of intelligence is broad, and it outlines several distinct types of intelligence. According to Ahmad and Dzulkarnain (2020), Howard Gardner believed that intelligence cannot be measured by one distinct skill.

Gardner (1983) held the view that the human brain is linked to a variety of cognitive capacities. Most people believe that individuals skilled in logic and mathematics possess a single intelligence. Gardner (1983) claimed, however, that while some individuals find it challenging to handle mathematical issues, they become the finest solvers of problems in other areas (Chen

& Gardner, 2022). Having learned how the human brain functions, individuals agree that human intelligence is not restricted to those individuals who are good at mathematical and logical intelligence but can be in many disciplines of intelligence (Chen & Gardner, 2022). The following discussion delves into Gardner's (1983) nine domains of intelligence.

According to Gardner (1983), linguistic intelligence allows individuals to communicate and interpret their world through language. It refers to an individual's capacity to use language effectively and expressly articulate themselves verbally. Linguistic intelligence involves understanding the sociocultural nuances of a language including idioms, plays on words, and linguistically based humor (Morgan, 2021). Public speakers, poets, and attorneys typify high levels of linguistic intelligence (Gardner, 2012). As a result, all individuals who make sense of the world through language, such as writers, exhibit high levels of linguistic intelligence. An individual who has strong linguistic intelligence has highly developed skills for reading, speaking, and writing, these individuals tend to think in words. You will see them liking various kinds of literature and playing word games. They are precise in expressing themselves and get irritated when others are not, they love learning new words, they do well with written assignments, and their comprehension is high (Yavich & Rotnitsky, 2020). The question arises, if an individual is not interested in any of the mentioned skills does that mean they lack linguistic intelligence?

Logical-mathematical intelligence is the type of intelligence that relates to an individual's capacity to employ abstract reasoning skills and knowledge. Furthermore, it can be demonstrated through problem analysis, in particular, successfully solving mathematical problems, and can be linked to academic intelligence. According to Gardner (1983), mathematicians and scientists possess a high level of logical-mathematical intelligence (Gardner, 1983; Yavich & Rotnitsky, 2020). Individuals who have strong logical-mathematical intelligence tend to think more conceptually and abstractly and are often able to see patterns, and relationships that others lack. They like to conduct experiments to solve puzzles and other problems, ask cosmic questions, and analyse circumstances and people's behavior. They enjoy working with numbers and mathematical formulas and operations and

like the challenge of a complex problem to solve. These individuals are systematic and organized, and they likely always have a logical rationale or argument for what they are doing or thinking at any given time (Morgan, 2021). The question arises, do all individuals who have logic-mathematical intelligence have all the above-mentioned skills or does it depend on a person?

Intrapersonal intelligence is defined as an individual's ability to demonstrate self-awareness and self-motivation through examining their inner-world emotions (Gadner, 1983; Yavich & Rotnitsky, 2020). It is further described as an individual's ability to draw on their emotions to guide and understand their behaviour, and the individual's recognition of personal strengths and weaknesses. Individuals with strong intrapersonal intelligence may like to work alone and sometimes shy away from others. They are self-reflective and self-aware and thus they tend to be in tune with inner feelings, values, beliefs, and thinking processes. According to Morgan (2021), people who have intrapersonal intelligence are frequently bearers of creative wisdom and insight are highly intuitive and are inwardly motivated rather than needing external rewards to keep going. Furthermore, they are often strong-willed, self-confident, and have definite, well-thought-out opinions on almost any issue. The question relates to whether an individual who lacks self-motivation or does not believe in themselves lacks intrapersonal intelligence, or everything depends on the problem an individual is facing at that particular time.

Interpersonal intelligence falls within the area of social intelligence. It is an individual's ability to engage in deep and lasting friendships, communicate effectively, and understand and manage other people's emotions (Chen & Gardner, 2022). An individual with strong interpersonal intelligence exhibits a deep understanding of other's points of view. They like team activities of all kinds and are good team members. They are sensitive to other people's feelings and ideas and are good at piggybacking ideas of other's thoughts (Morgan, 2021). These individuals are skilled in conflict resolution, mediation, and finding compromise when people are in radical opposition to each other (Davis et al., 2011). Do all individuals who have interpersonal intelligence have all these skills mentioned above?

Spatial intelligence is an individual's ability to perceive and utilise space within their environment (Morgan, 2021). This includes the individual's ability to understand the space around them. Spatial intelligence is applicable in sports, dancing, performing arts, and puzzle-solving activities (Gardner, 2011). According to Morgan (2021), a person with strong spatial

Intelligence tends to think in images and pictures. They are aware of objects, shapes, colours, textures, and patterns in the environment around them. They like to draw, paint, and make interesting designs and patterns, and work with clay, coloured markers, construction paper, and fabric. All in all, these individuals excel at performing tasks that require "seeing with the mind's eyes", such as visualising, pretending, imagining, and forming mental images (Morgan, 2021).

Bodily-kinesthetic intelligence involves an individual's capacity to regulate their body and move with expertise and accuracy (Gardner, 2012). Individuals who are highly talented in bodily-kinesthetic intelligence may thrive in sports, the performing arts, or skilled handicrafts (Gardner, 1983; Gardner, 2012). The bodily-kinesthetic intelligence traits include a good sense of balance, a good sense of rhythm, and gracefulness in movements, good hand-eye coordination, and the ability to communicate ideas through gestures (Gardner, 2012; Morgan, 2021). Generally, people who lack bodily-kinesthetic intelligence are unable to move their bodies skillfully and accurately. According to Morgan (2021), people who have strength in this intelligence area tend to have a keen sense of body awareness. They like physical movement and dancing. They communicate well through body language and other physical gestures. They normally perform tasks much better after seeing someone else do it first and then mimicking their actions. These individuals like physical games of all kinds and like to demonstrate how to do something for someone else. They find it difficult to sit still for long periods and are easily bored or distracted if they are not actively involved in what is going on around them (Yavich & Rotnitsky, 2020).

Musical intelligence relates to the ability to create, learn, and play music (Gardner, 2012). Learning to sing or play a musical instrument, comprehending music theory, developing a feeling of rhythm, and detecting musical patterns and progression are all part of musical intelligence (Gardner, 1983; Yavich & Rotnitsky, 2020). Musical intelligence traits include sensitivity to sound patterns, a good sense of pitch and rhythm, and awareness of the complex structure of musical notes. According to Morgan (2021), individuals who are strong in this intelligence area likely have a love for music, they tend to study or work well with music in the background, and they can often reproduce a melody or rhythmic pattern after hearing it only once. Various sounds, tones, and rhythms may have a visible effect on the individual, others can often see a change in facial expressions, body movements, or emotional responses. They probably like to create music and enjoy listening to a wide variety of music. They may be skilled in mimicking sounds, language accents, and others' speech patterns, and can probably

readily recognise different musical instruments in a composition (Morgan, 2021). Individuals who lack musical intelligence are not even interested in composing songs. Hence, they are not considered competent in the musical field.

Naturalistic intelligence entails an individual's appreciation of the natural world (Gardner, 2012). This includes the ability to recognise and nurture various plants, care for animals, and a desire to be in nature (Chen & Gardner, 2022; Gardner, 1983). Natural intelligence traits include individuals' sensitivity to ecology, sensitivity to environmental and animal abuse, and feeling at their best in nature. According to Morgan (2021), people who have strong natural intelligence have a profound love for the outdoors, animals, plants, and almost any natural object. They are probably fascinated by and noticeably affected by such things as the weather, changing leaves in the fall, the sound of the wind, the warm sun or lack thereof, or an insect in the room. It is noticeable that these individuals when they were at a young age were likely nature collectors, adding such things as bugs, rocks leaves, seashells, and sticks. They probably brought home all manner and kinds of stray animals, and these individuals may have several pets and want more. They tend to have an affinity with and respect for all living beings (Yavich & Rotnitsky, 2020).

Existential intelligence is a person's ability to comprehend religion, show empathy, and understand the relationship between life and death (Chen & Gardner, 2022; Gardner, 1983). The question that arises is does it mean people who do not have patience in terms of understanding or knowing about existentialism, lack existential intelligence?

Gardner's multiple intelligences theory also has its critics. Critics argue that Gardner's definition of intelligence is too broad and that the intelligence he has identified and mentioned above simply represents talents, personality traits, and abilities. Moreover, it is contended that there are no valid tests to measure these intelligences, (except for spatial intelligence) and to allow for research on them (Klein, 1997; Yavich & Rotnitsky, 2020) despite these criticisms, Gardner's theory remains one of the widely used theories of intelligence across the world.

2.3.2 Sternberg's triarchic intelligence theory

Another widely accepted theory within the field of intelligence is the theory of triarchic intelligence. This theory was developed by American psychologist, Robert Sternberg in the 1980s. Stenberg's (1985) triarchic intelligence theory concurs with Gardener's (1983) multiple intelligences theory in that intelligence is not unitary. However, these two theories differ in the sense that the triarchic intelligence theory states that an individual's intelligence is made up of three different skills, which are creative, analytical, and practical (Sternberg, 2012).

According to Sabbah and Abd Aldin (2022), triarchic intelligence theory defines intelligence in terms of individuals' ability to achieve success in life, based on their standards and within their socio-cultural context. Robert Sternberg (1985) proposed a three-category theory of intelligence, adding the components that were not mentioned in Gardner's original theory. Sternberg (1985) focused on three types of intelligence. He believed that an individual's intelligence manifests in three components, which are creative intelligence, analytical intelligence, and practical intelligence. The expanded version of Sternberg's theory includes wisdom-based skills. This theory posits that individuals are intelligent if they can firstly, plan and achieve goals that will help them satisfy what they need in their lives; and secondly be able to take advantage of their strengths to make up for their weaknesses to survive in their immediate surroundings through a combination of skills (Sternberg, 2012). These skills which he identified as essential for survival are the ones mentioned above, which include analytic intelligence, creative and practical skills.

Sternberg (1985) further explained that being creative entails the ability to acquire knowledge and solve problems and this kind of intelligence is more commonly referred to as academic intelligence. Sternberg further believed that the academic form of intelligence reflects how one relates to their inner world (Sternberg, 2012). In analytical intelligence, people can analyse, assess, and disapprove things. Lastly, in practical intelligence, people are distinguished by the use and application of reasoning (Sternberg, 2012). Furthermore, intelligence is a result of a distinct capacity to achieve abilities in one or more of these types of intelligence, and a diverse association of these fields results in a unique pattern of intelligence (Khin & Buxin, 2011; Yao, 2016). Sternberg's theory like the other previously discussed theory also faces major criticism regarding its unempirical nature. Critics point out that Sternberg's three components of intelligence are interrelated and that there is still a general intelligence at play. Although Sternberg's theory is highly criticized for being unempirical, it is the author's opinion that his

theory has been proven to be more effective in terms of being applicable to real-world situations. For example, his theory has been used to explain exceptional intelligence (gifted and mental retardation) in children and to contend with the negative implications of intelligence tests.

2.3.3 CHC theory of cognitive abilities (Cattell-Horn-Carroll)

The CHC cognitive abilities theory also agrees with Gardner's (1983) multiple intelligences theory and Sternberg's (1985) triarchic intelligence theory in the sense that all of them perceive intelligence as not being unitary, as there are different types of intelligence. The CHC was developed by combining the conceptual works of Raymond Cattell, John Horn, and John Carroll. The decision to combine their work was made from the realisation that their separate theories had common principles (Hally, 2015; Warne, 2016). The theory is mainly established on psychometric test results and is based on the belief that there are three hierarchal connected strata of intelligence (Beaujean, 2015).

The CHC cognitive abilities theory further posits that intelligence consists of many individual factors, which are in the form of a hierarchy that comprises three strata. According to the theory, at the top of the hierarchy is Strata III, which consists of general intelligence. Strata II occupies the middle of the hierarchy, and it consists of broad factors such as fluid intelligence (*Gf*) and crystallised intelligence (*Gc)*. Lastly, Strata I is at the bottom, consisting of specific abilities that are narrower than those of Strata II and Strata III (Carroll, 1993; Schneider & McGrew, 2018).

CHC theory is thus mainly designed to explain how and why individuals differ in cognitive abilities. Although this theory is viewed as one of the prominent and important theories of intelligence in the field of psychology, it has also received a lot of criticism. One of the major criticisms is its lack of focus on general abilities. Critics have noted that the over-prioritisation of strata II is inappropriateness as general abilities explain more variance in test scores and have better psychometric properties (Beaujean, 2015). Furthermore, it is argued that strata II abilities seldom add any additional information beyond what is provided by general abilities.

The idea of merging their works was adopted after they had realised that their different ideas had common ideologies (Hally, 2015; Warne, 2016). This theory is primarily based on the

belief that intellect is divided into three hierarchically related strata (Cattel, 1963, Horn, 1991; Schneider & McGrew, 2018). The first stratum (Stratum I) considers narrow abilities, the second stratum (Stratum II) is concerned with broad abilities, and the third stratum (Stratum III) is concerned with general abilities, which are also important and involved in a wide range of cognitive tasks (Cattel, 1963; Horn, 1991; Schneider & McGrew, 2018).

Different theorists have defined the term intelligence differently, which means that there is neither a single definition of intelligence nor an understanding of what it entails. However, this study employed Gardner's (1983) multiple intelligences theory to explore parents' perceptions of intelligence across gender because it offers a broader and more diverse explanation of intelligence than other theories.

2.4 Characteristics of intelligence

Intelligence is defined as mental capability that involves characteristics such as the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas; earn quickly and learn from experiences. It is not merely book learning, a narrow academic skill, or test-taking smartness (Parankimalil, 2014).

The Krishna kanta state open university, faculty of educational psychology (2011) outlined some of the characteristics of intelligence as follows:

- Intelligence is the power or capacity of human being which helps one reason, analyse, judge situations effectively
- Intelligence is both an innate construct and can be acquired as well
- Intelligence can be described as an all-round mental efficiency
- An all-round mental efficiency means that it includes all the qualities in the mental development of an individual
- Through the process of intelligence, the whole general and abstract thinking, and reasoning powers are revealed
- Intelligence is the ability to think abstractly. It is also the capacity to learn from the experience, and hence, it makes the profitable use of the past
- Intelligence is the ability of adapt and adjust to a new situation
- Intelligence is the ability for abstract thinking as well as the capacity to learn from the experience
- Intelligence is not knowledge through acquisition of knowledge depends to a great

extent on intelligence and vice-versa

- Intelligence is not a guarantee against abnormal behavior, backwardness, and delinquency although it is one of the factors contributing to the achievement, adjustment, and character formation of a person.

In short, people may thus say that intelligence is the power or capacity through which man can identify himself as “man” that is. It is the capacity through which we can reason, think, comprehend or appreciate, analyse and judge. The modern psychologists are of the opinion that intelligence is partly innate but due to repetition or exercise it can be developed. Therefore, we can say that the capacity of intelligence is both innate and acquired.

For the purposes of this study, it is important for the researcher to discuss what gender entails since the study considers gender differences and give a view of what previous studies found in relation to the research questions stated above.

2.5 Defining gender

The definition of the term "gender" is critical because it clarifies the topic in terms of what is meant by "parents' perception of intelligence across gender." Many individuals conflate “sex” and “gender”, even though these two concepts have distinct meanings. Sex is described as a set of biological features in people and animals (Mauvais-Jarvis et al., 2020). It is typically classified as female or male, although there are differences in the basic components that define sex and how these aspects are exhibited. Biologically the differences in gender are charactersied by different bodily parts such as males having a penis, and females having a vagina and also the differences in chromosomes.

Gender, according to Mauvais-Jarvis et al. (2020) relates to socially constructed norms, behaviours, and identities of girls, women, boys, and men. Gender influences individuals’ perception of themselves and others, their interaction with one another, and the distribution of power and resources in society (Roof, 2016). Gender identity evolves throughout time. Individuals and communities comprehend, experience, and express gender in a variety of ways, including the roles they play, the expectations placed on them, their relationships with others, and the complex ways in which gender is recognised in society. In this study, the researcher sought to establish if parents perceive one gender as being more intelligent than the other or to determine whether intelligence is perceived to be similar across genders.

2.6 Parents' perspective of intelligence across gender

Although many studies have been conducted over the years on the implicit theories of intelligence, it remains that the origin of parents' perceptions of intelligence across gender has not yet been fully understood. Precisely, there is not much available literature on parents' perceptions of intelligence across gender in the South African context. However, a few studies that have been conducted in other contexts are relevant to this study. Previous studies conducted on parent's perspectives of intelligence across genders have found that males estimate their intelligence as higher than that of females and that in general, individuals estimate their fathers' intelligence to be higher than their mothers (Muntoni & Retelsdorf, 2019). Parental beliefs about children's intelligence are a potentially important area of research owing to the effect these ideas have on parental rearing and expectations (Raty & Kärkkäinen, 2011). More importantly, Muntoni and Retelsdorf (2019) provided evidence pointing to parents' ideas and expectations about development, which influences objective child outcomes. They note that parents' beliefs about childhood, child development, and parenting differ in quality and content, depending on several factors, such as the gender, age, ethnicity, and education of both the parent and the child. They consider that many of these ideas are "ready- made" aspects of culture and therefore are affected relatively minimally by experience with children.

Moreover, Räty and Kärkkäinen (2011) argued that mathematics is perhaps the most gender-marked academic subject. Cross-cultural research has shown that traditionally, parents imparted, and children took on the view that boys are good at mathematics from a very young age (Muntoni & Retelsdorf, 2019). For example, Räty and Kärkkäinen (2011) conducted a study in Ireland on the westernmost edge of Europe, they found that despite girls and boys being subjected to equal school performance in mathematics, parents' assessments favour boys and this does not change during the first few years of school attendance (McCoy et al., 2022). Moreover, evidence suggests that parents' underestimation of girls' capacity in mathematics also manifests itself in their inclination towards explaining girls' mathematical accomplishments concerning hard work and boys' mathematical accomplishments concerning natural ability (Muntoni & Retelsdorf, 2019). However, Deary et al. (2010) found that parents' beliefs about their children reflect their children's self-perceptions of their mathematical ability. The question arises, do females perform less than males in mathematics? Parents' perceptions of their educational background influence their children's intelligence across gender.

There are many individual differences in general cognitive ability or intelligence (Deary et al. 2010). Indeed, as highlighted by Murray (2008), in the study conducted in Finland which is in the northern European nation, it was found that abilities vary, and half of the children exhibit abilities that are below average. These two related results have extraordinary implications for everyday life; therefore, efforts aimed at understanding the origin of these differences are forthcoming. Differences in intelligence are caused by both genetic and non-genetic factors (Bouchard, 2009; Flynn, 2007). Genes account for 40% and 80% of the intelligence variance in childhood and adulthood, respectively. Haworth et al. (2009) undertook a large-scale study involving 11 000 twin pairs from four countries (Australia, the Netherlands, the United Kingdom, and the United States) and reported that genetic influences on general cognitive ability increase linearly from childhood to adolescence and finally to young adulthood.

Family income and parents' educational levels are undoubtedly related to their offspring's intelligence. Besides, several studies highlighting the impact of SES on human development, with particular emphasis being placed on how family income relates to children and adolescents' development and their cognitive and educational outcomes (Maynard & Murnane, 1979; Ratcliffe & McKernan, 2010).

Other studies have highlighted that children growing up in poverty are less likely to be successful over the life course than their counterparts from higher-income families (Duncan et al, 2010; Milligan & Stabile, 2009; Ratcliffe & McKernan, 2010). Furthermore, the heterogeneity of income measures (for example, father's education, mother's education, highest educational level, father's occupation, mother's occupation, the family's current income, or composite measures derived from those variables) has long prevented researchers and policymakers from reaching a consensus on the effect of the family's income on the child's development (Dahl & Lochner, 2008; Fuqin & Yiwen,2014). Income appears to have an impact on children's education and IQ, and this is probably greater among economically disadvantaged families (Conger & Donnellan, 2007; Dahl & Lochner, 2008; Fuqin & Yiwen, 2014).

Furthermore, numerous studies have demonstrated that parents' beliefs about their children's intellectual abilities predict later educational achievement in adolescence and young adulthood (Gunderson et al., 2012; Jodl et al., 2001; Pinquart & Ebeling, 2019; Phillipson & Phillipson,

2007). This may be partly due to the direct transmission of parental beliefs and expectations, but also because parents can provide or withhold enriching cognitive experiences which can accelerate intellectual development outside of the school (Storage et al., 2020). Parents are but one element in a larger ecological system that contributes to a child's intellectual development and intellectual self-image. This system includes the role teachers and educators play in shaping the intellectual self-image of the children in their care (Jussim & Harber, 2005; Kollmayer et al., 2018), as well as differential treatment of boys and girls (particularly in gender-typed courses such as Mathematics and Science). Children's intellectual self-image is also shaped by the media and popular culture (Solbes-Canales et al., 2020), which also play a part in the transmission of cultural gender stereotypes about intellectuality (Nosek et al., 2002; Storage et al., 2020).

2.7 Theoretical Framework

Social constructionism was adopted as a theoretical framework in this study.

The basic premise of the social constructionist theory is that reality is socially constructed (Berger & Luckman, 1967; Jackson & Penrose, 2015). This means what is understood and conceived as reality is shaped by an interaction between socio-cultural and interpersonal processes. The social constructionist theory also assumes that understanding is produced through the social interpretation of culture and inter-subjective influences of family, culture, and language (Burr & Dick, 2017).

One of the main goals of social constructionists is to explore a set of evolving meanings that individuals continuously create in their interactions (Galbin, 2014). This is because social constructionists are of the view that an understanding of the world or reality is a result of historical processes of interaction and negotiation between groups of individuals (Galbin, 2014). It is believed that it is within the process of these interactions that individuals and groups produce, over time, concepts, or mental representations of one another's actions. These concepts are soon adopted into shared roles and played by each member in relation to one another. Later, these roles are adopted by other people in society and the shared interaction is institutionalised (Burr & Dick, 2017; Cojocaru, 2010). In this course of institutionalisation, meaning becomes embedded in societies and cultures. Hence, knowledge and individuals' notions of what is considered real or normal in one culture, might not be considered real in another (Burr & Dick, 2017). Thus, according to social constructionists, what we perceive and accept as reality or the

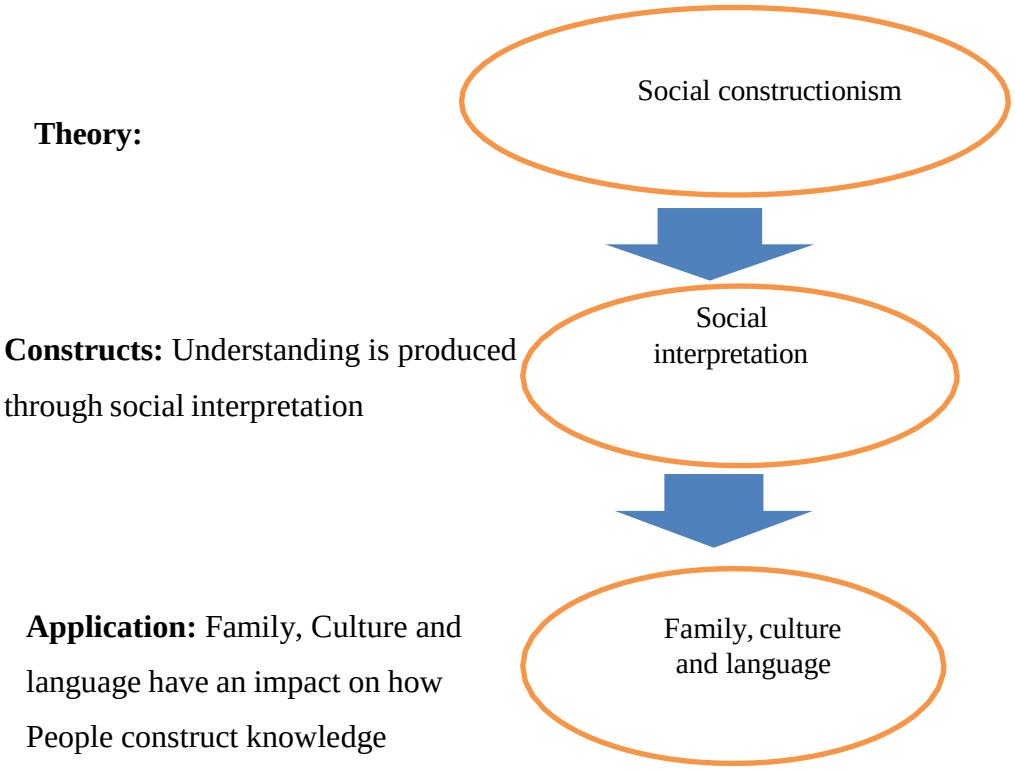
truth, is not in fact an accurate reflection of reality, but rather a product of our creation. However, social constructionists regard these different realities from each culture as valid. This is because within this theory the idea of objective knowable truth is rejected (Galbin, 2015).

Regarding intelligence, from a social constructionist viewpoint intelligence is seen as any action which a specific culture defines and values as intelligence (Galbin, 2015). As a result, within this perspective, intelligence is viewed as a relative concept; meaning it depends on how different actions are carried out at different times by diverse groups. This suggests that within the social constructionist perspective, intelligence will have a different meaning for different groups of people who do not share the same culture (Galbin, 2015). Thus, Burr and Dick (2017) contend that intelligence should be defined as the combination of skills and abilities which a particular group uses for survival and advancement and be defined as intelligence only within that culture. The social constructionist view on intelligence thus advocates for the definition and understanding of intelligence only in relation to the subject's culture and context since this is the only position in which it can be accurately understood.

Additionally, social constructionists are founded on the principle of absolute truths not existing, it acknowledges and accepts multiple viewpoints (Burr & Dick, 2017). Hence, within the context of research social constructionists can consider and accept different viewpoints. Thus, the purpose of research in this approach is to understand how some of the aspects of the world that are usually taken for granted are socially constructed, thus opening space for alternative viewpoints of reality (Galbin, 2015). The social constructionist approach stresses the contextual value of how knowledge is or must be produced, as well as its practices which is to strengthen the link between research and intervention; advocating for the need for partnership and participation of those who stand to benefit from the knowledge being produced (Jackson & Penrose, 2015). Thus, in reviewing the basic tenets of this approach in relation to the objectives of this research, the researcher believes that this approach is best suited for exploring parent's perspectives of intelligence across gender.

Below is a diagram showing how theoretical framework is used in the study:

Figure 2:1: Application of theory to the study



2.8 Conclusion

Although literature extensively unpacks conceptions of intelligence within the field of psychology, most of it has been conducted within the Western context, with very few having been done within the African context. Hence, there is a gap in the literature regarding how people of African descent generally conceptualise intelligence (Laher & Cockcroft, 2013). This chapter unpacked the influential theories that conceptualise intelligence. Secondly, the chapter discussed parents' perceptions of intelligence across gender. Thirdly, the study reviewed parents' perception of their educational background and how it influences their children's intelligence across gender. Moreover, the chapter established if gender influences the conceptualisation of intelligence. Lastly, the chapter reviewed the social constructionist approach, which assumes that reality is constructed through human activity. As a result, social constructionists believe that to accurately study this concept one must use methods that will enhance collaboration between all parties involved in the production of knowledge (Galbin, 2015). Thus, the current study utilised this approach as the theoretical framework since its objectives align with this theory's approach of acquiring knowledge. The next chapter discusses the research methodology and principles employed in eliciting data for this study.

CHAPTER 3

METHODOLOGY

3.1 Introduction

The historical background and available literature on this topic guided the processes underpinning this systematic review. This chapter presents the paradigm and methodological approaches that were applied in this study. It includes a discussion of the study's research design, research approach, sampling methods, data collection processes, data analysis method, ethical issues, and issues of credibility, dependability, and transferability that were employed in this study.

3.2 Research methods

The following section discusses the research methods that were used in this study.

3.2.1 Research Paradigm and approach

The study used the interpretive research paradigm because it posits that reality is multi-layered and complex (Alharahsheh & Pius, 2020). A single incident can be subjected to multiple interpretations. Therefore, employing the interpretive paradigm fostered an understanding of how parents interpret intelligence across the gender perspective. The qualitative nature of the research problem that this study sought to address necessitated the employment of a qualitative research approach. According to Aspers and Corte (2019), from an interpretive perspective, qualitative research is primarily concerned with understanding the lived experiences of human beings. This study employed a systematic review encapsulated in the qualitative approach to gain detailed information about parents' perceptions of intelligence across gender.

3.2.1 Research design

The purpose of a research design is to ensure that the study's findings enable the researcher to explicitly answer the research questions (Creswell, 2007). The research design applied in this study is systematic review. A systematic review is a disciplined way of gathering and integrating evidence from various research studies to create a whole that is greater than the sum of its parts (Purssell & McCrae, 2020).

The systematic review was conducted because the researcher wanted to obtain a clear and comprehensive overview of the available evidence on parent's perspective of intelligence

across gender. It was indicated that from the studies collected, the literature in the South African context is very limited on parents' perspective of intelligence across gender. Systematic review helps in identifying research gaps in the current understanding of a field (Meerphohl et al., 2012). In South Africa there are no recent studies regarding the topic of this study, the available information was outdated and could not be included in the study since they were older than 13 years. Systematic reviews highlight methodological concerns in research studies that can be used to improve future work in the topic area (O'Hagan et al., 2018). With the topic in place, the researcher was able to identify the importance of conducting primary research in the South African context concerning the topic to get an insight into how parents perceive intelligence across gender in South Africa.

3.2.3 Sampling

Sampling is the selection of the population to be studied (Lakens, 2022). This study used the non-probability sampling strategy. This is an inexpensive way of obtaining data. Purposive sampling was used because it enabled the researcher to gain detailed knowledge about parents' perceptions of intelligence across the gender perspective (Campbell et al., 2020). Purposive sampling is a non-probability sampling approach in which study participants are selected based on their theoretical significance (Campbell et al., 2020). The researcher used purposive sampling because it is the best strategy for the selection of the relevant data sources. The researcher collected studies related to this research topic to explore how parents perceive intelligence across gender.

3.2.3.1 Inclusion and exclusion criteria

The inclusion and exclusion criteria are important as they set the boundaries for studies, including those underpinned by systematic reviews. They are determined after the researcher has set out research questions guiding the study. According to Nunn et al. (2020), systematic reviews use rigorous criteria that assist them in identifying, evaluating, and synthesising literature. The following are the inclusion and exclusion criteria that the researcher considered.

(i) Inclusion criteria

- **Qualitative and Quantitative**: as previously stated this study focus on parent's perception of intelligence across gender. Numerous studies conducted under the topic of this study make use of qualitative and quantitative data that apply the concept of parent's perception of intelligence across gender. This data will be utilised to answer the research questions concerning the current understanding of parent's perception of intelligence across gender
- **National and International:** national and international studies are included in the study, as they focus on the national and international level. The researcher did not want to limit the study in terms of its broader application. The study provided a meaningful contribution toward the development and understanding of parent's perception of intelligence across gender in different contexts.
- **Time frame 2011-2023**: sources were restricted to work done between 2011 and 2023.
- **English language**: the scope of master's dissertation and limited time parameter strongly influenced the researcher's decision to only include research published in English. Ahmad (2015) suggested that positive findings are more likely to be published in international journals where English is the primary medium of communication; this constraint implies that the results may be over- represented as positive, the researcher is also aware that language bias is a factor to consider in the bias and limitation of the study.
- **Peer-reviewed data**: the researcher decided to only include peer-reviewed journal articles, which introduces publication bias into the study. There is evidence that suggests that editors of journals are more likely to include studies that are statistically significant in their results. The researcher also acknowledges that the converse is also a reality; that researchers who yield statistically insignificant results are less likely to submit for publication.

(ii) Exclusion criteria

- Types of data: for the intention stated under the inclusion criteria, grey literature, non-peer reviews data, and secondary sources were excluded for the study.
- Only online databases are included in the search for the data, which excludes all other offline sources and other forms of databases which may produce significant results. The researcher acknowledges that this introduces a limitation to the study.
- Literature that was not in full text was excluded.

3.3 Data collection

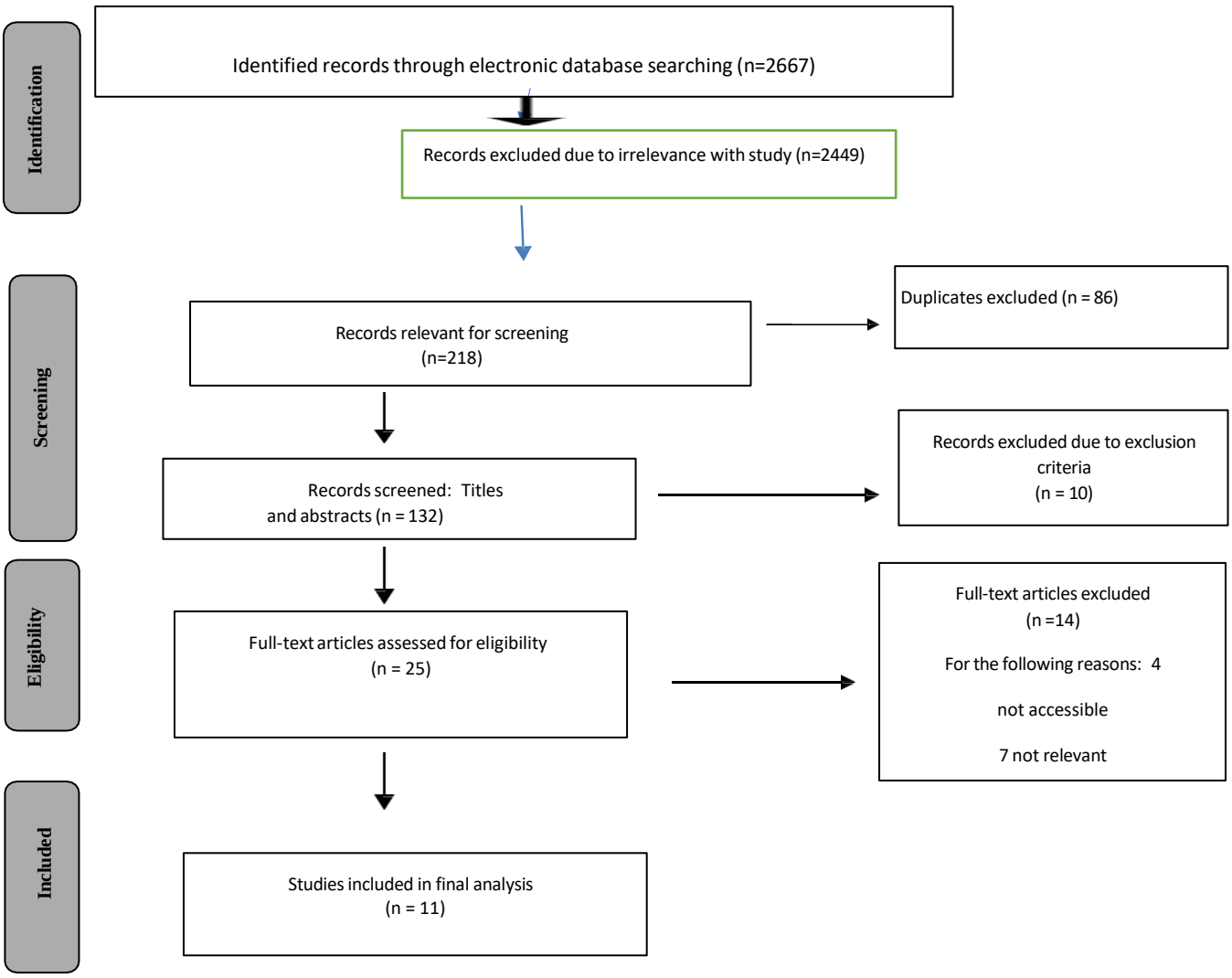
Data collection is the process of gathering information that is relevant to a study (Silverman, 2005). The data collection process involves the systematic gathering of information that is relevant to and required for a study (Burns & Groove, 2013). In this study, the researcher conducted a systematic review, which means that the study entirely leaned on secondary data. Secondary data is the data gathered by earlier researchers and already exists in the public domain (Burns & Groove, 2013). The data collection process involved collecting data in the form of journal articles, books and book chapters. The study considered literature published from 2011 to 2023 this allowed the review to delve into the parents' perspectives of intelligence across gender. Data were accessed using databases such as Google Scholar, EBSCOhost, and PsycInfo. These databases were individually searched and compared to ensure the inclusion of all the relevant data. The researcher searched for parent's perspectives of intelligence across gender. The researcher used the following keywords when searching for information: Intelligence, parents and intelligence, gender and intelligence, parents' perspective of intelligence, and parents' perspective of gender. Papers that did not meet the inclusion criteria were excluded from the study, considering that these studies may have strayed into research areas that are irrelevant to this study. The strengths and limitations of the included studies were considered, and this was important to ensure that the interpretation of these studies was sensitive to the characteristics of the population studied in the current study. The titles and abstracts of the titles were independently assessed and extracted according to the search questions which focused on parents' perspectives of intelligence across gender.

In addition, the researcher collected information on both national and international studies. The researcher aimed to explore how parents perceive intelligence across genders globally. Another reason is that this study could not only focus on the South African context because there is a dearth of information available on parents' perceptions of intelligence across genders in South Africa. Therefore, international articles assisted the researcher in collecting more and richer data on parents' perceptions of intelligence across the genders globally.

For this study, it is important for the researcher to discuss the study selection process.

3.3.1 Prisma checklist

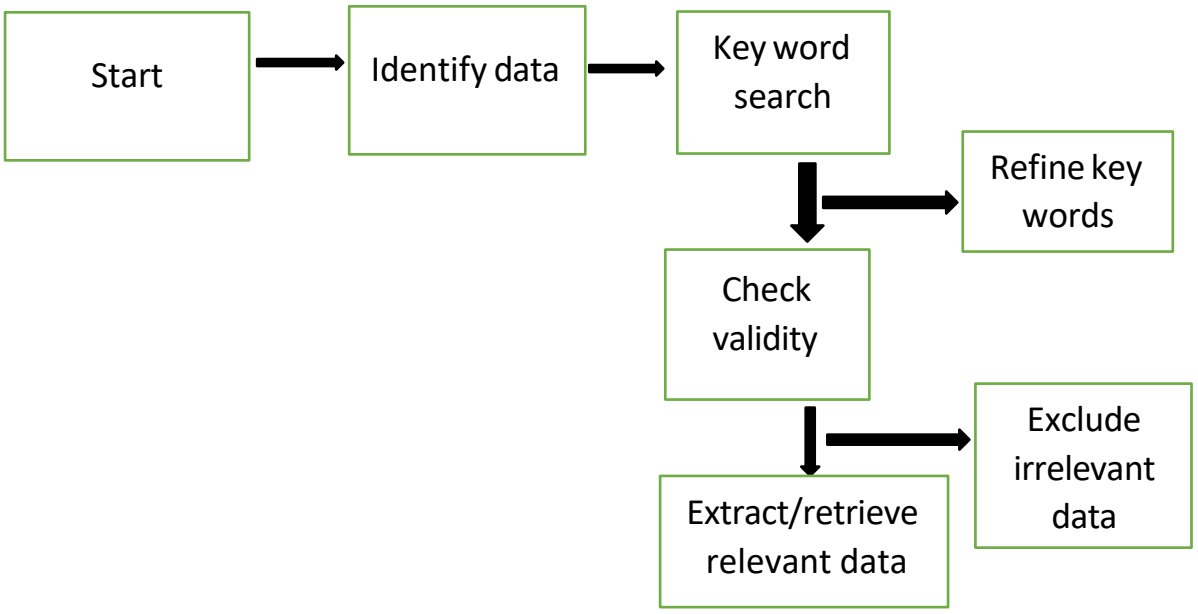
Figure 3.1: Flow diagram illustrating the process of screening articles



Source: Adapted from Moher et al. (2009)

Figure 3.2: Search terms used

The following diagram shows the keyword search



A keyword search was conducted using different terms which were linked to the research questions. Figure 3.2 above shows the steps the researcher took to identify resources, which were followed by the keywords used to search for relevant articles. If the keywords showed irrelevant data by their titles and abstracts, the search was redefined. Relevant studies were examined through their abstracts and conclusions to verify their trustworthiness (Tufanaru et al., 2017). If the studies were found to be irrelevant, they were then excluded from the review as seen in Figure 3.1 above.

The researcher used the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) because it is a recognised standard for reporting evidence in systematic reviews and meta-analyses (Tricco et al., 2018). In the PRISMA flow diagram, the researcher writes down the information about the articles she has managed to find on the Internet. The PRISMA comprises four steps that constitute its data collection process (Levitt, 2020). According to Levitt (2020) the first step involved the identification of the articles used. In this step, the researcher recorded the number of studies identified through database searching and wrote the

number of duplicate records that she removed from the study. The second step involved screening. The researcher wrote the number of all the records screened by using titles and abstracts. This also included the number of excluded records.
The third step was based on illegibility. During this stage, the researcher wrote the number of articles in full text and considered them for appropriateness and then full-text articles that were excluded were recorded with reasons. The last step relates to included studies and in this step, the researcher wrote the number of studies included in the qualitative synthesis (Levitt, 2020).

It is important for the researcher to discuss how the data was analysed in this study.

3.4 Data analysis

The data synthesis is the process that involves integrating findings from multiple qualitative studies to develop new interpretations and understandings (Hancock et al., 2007). To organise and characterise the research data obtained, thematic synthesis was used in this study. This technique was used for detecting, analysing, and understanding the significance of information (Braun & Clarke, 2006). Furthermore, this method aids in the precise organisation and description of data (Braun & Clarke, 2006). Braun and Clarke (2006) offered six stages that constitute thematic analysis. These stages were followed methodically in the analysis of data gathered for this study.

According to Braun and Clarke (2006), the first step involves familiarising data with oneself. The researcher examined each study critically and analytically several times to grasp and become acquainted with the data. The researcher jotted down information regarding the data set. The researcher proceeded to the second step, which involved analysing data through coding. This procedure entails coding intriguing data set attributes that are related to the study questions (Braun & Clarke, 2006). Once the data had been coded, the researcher continued to the third step, which involves searching for themes. Similar codes generated in the previous stage are then grouped to form themes (Braun & Clarke, 2006).

The fourth step was about reviewing themes. The researcher then tested whether the produced themes functioned with the coded data extracts. All the coded data that did not work with the themes were removed (Braun & Clarke, 2006). The fifth step relates the naming and defining the themes. The themes selected in the previous stage were polished and explicitly defined in this step to guarantee that each theme had a matchless but consistent tale and that each theme

was associated with other identified themes (Braun & Clarke, 2006).

The final step involved writing the final report. According to Braun and Clarke (2006), the researcher views thematic analysis as the last chance of guaranteeing that themes relate logically and meaningfully. As a result, the researcher verified the data to ensure that it was appropriately analysed and that it adhered to Braun and Clarke's (2006) six stages followed in applying the thematic analysis technique.

3.5 Ethical issues

According to McCradden et al. (2022), research ethics are a set of guidelines a researcher follows to protect the participants when conducting research. Since this study collected data from existing sources of information, there was no need for securing ethical clearance. However, there were potential ethical considerations such as plagiarism and copyright issues that the researcher had to uphold during the study. Citing other researchers' ideas without their permission or acknowledgment is tantamount to plagiarism (Dhammi & Haq, 2016). Therefore, the researcher adhered to the plagiarism policy of the University of KwaZulu-Natal and cited and acknowledged all the sources used in the study

Since the study was a systematic review, an exemption from ethics review was granted by the Research and Higher Degrees Committee of the School of Applied Human Sciences at the University of KwaZulu-Natal. The researcher also abided by copyright laws by ensuring that intellectual property requirements were met, by not copying other people's work, and by pretending that it is the researcher's work (Dhmmai & Haq, 2016). The researcher cited other sources. The researcher abided by the principles of fair use of ethical guidelines, which is to give credit to the copyright holder; the researcher was not set to make money from the copyrighted work. Moreover, the researcher did not misuse copyrighted materials (Dhammi & Haq, 2016).

Therefore, this research abides by all the ethical standards and principles in conducting this study.

3.6 Trustworthiness of the study

According to Becks (2014), in a systematic review, trustworthiness refers to the degree of confidence in data, clarification, and methods used to ensure the quality of the study. Although it can be agreed that trustworthiness is invaluable, many have questioned what constitutes trustworthiness (Connelly, 2016). The trustworthiness of a synthesis depends on the quality and quantity of the evidence base in which it is built on. Trustworthiness focuses on credibility, dependability, confirmability and transferability (Devault, 2017). Should primary studies with poor methodological quality be included in the review, trustworthiness of the synthesis may be affected. The researcher ensured that trustworthiness is assessed by excluding studies that were not relevant for this review according to inclusion criteria.

3.6.1 Credibility

In qualitative research, credibility is the degree to which the description of the study is truthful, particularly regarding the amount of agreement between research participants and the researcher (Shufutinsky, 2020). Credibility is regarded as one of the most significant aspects of the creation of the trustworthiness of a study since it needs the writer to relate the study's findings with reality to demonstrate the validity of the study's findings (Shufutinsky, 2020). According to Korstjens (2018), credibility deals with the focus of the research and the confidence that can be placed on how the data analysis and processes address the intended review questions. The researcher ensured that the extracted data fell into the inclusion criteria and was relevant to answer the research questions. Themes and codes were covered according to their relevance to the study.

3.6.2 Dependability

Dependability is the stability and dependability of study results and the amount to which study processes are recognised, allowing other people who were not part of the research to assess and review the study's exploration (Finlayson et al., 2020). There are several techniques which can be utilized to ensure dependability; however, the ideal approach would be to have external audit (Korstjens, 2018). The researcher of this study ensured dependability through supervision. The research supervisor examined and analysed the process of data analysis. Conclusion and interpretations were also supervised to ensure congruence with the reviewed data. Various research stages, such as research question generation, data sampling, data gathering, and data analysis, were consistent with one another. Furthermore, the researcher went into more detail to ensure that each stage was thoroughly explained and presented in the final research report.

3.6.3 Confirmability

Confirmability in systematic reviews focuses on how the extracted data was coded and whether or not numerous researchers would agree with the coding (Forero, 2018) the researcher checked and rechecked throughout data collection and analysis to ensure the confirmability of the results; in addition, this study was supervised to ensure confirmability.

3.6.4 Transferability

Transferability, according to Daniel (2019), relates to the extent to which qualitative research may be translated to other similar situations. Transferability focuses on the degree to which research findings can be transferred to other contexts or ideologies. Transferability is accomplished when results have meaning to participants who were not part of the study and these participants may associate with the findings (Houghton et al., 2013). To improve transferability, the researcher of the current study clearly stated the research questions, objectives, methodology, and the used theoretical framework.

3.7 Conclusion

This chapter presented step-by-step procedures that were included in the execution of the methodological processes. It gave a detailed description of the research methodology applied in collecting data for this study. It discussed the theoretical background, data collection, data analysis, and ethical considerations, including issues of credibility, transferability, and dependability. The next chapter presents the findings emanating from the study.

CHAPTER 4

FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter presents findings and discusses them according to themes that emerged from the thematic data analysis, in relation to research questions. It provides an analysis and discussion of the findings of the study which was conducted to explore parents' perception of intelligence across gender. Findings indicate that gender is a factor that does not have an impact on an individual's level of intelligence. However, some factors that contribute to an individual's level of intelligence include family background, socio-economic status, school quality, and parental educational background. These factors are discussed on the impact they have on an individual's level of intelligence.

4.2 Findings from the thematic synthesis

The aim of this study was to understand and explore parent's perception of intelligence across gender, as well as to establish if gender influences the conceptualisation of intelligence. During data analysis, the data were classified into themes and sub-themes**.** These themes were developed from different studies and were then synthesised to provide a holistic picture that would address the research questions. Some of the major findings revealed that gender does not influence the conceptualisation of intelligence. The findings also revealed that there are various reasons for these differences in parents' perception of intelligence across gender. Furthermore, the findings also highlighted that various factors inform the parent's perception of intelligence.

Specifically, this study sought to answer these research questions**:**

1. What are parents' perceptions of intelligence across gender?
2. How do parents perceive their educational background and its influence on their children's intelligence across gender?
3. How does gender influence the conceptualisation of intelligence?

Table 4.1: Included studies

Year	Title	Methods	Key findings
2011	Education and Family Background	Study conducted in Norway Random sampling Quantitative study	The study found that family background has become a very active research field in economics. This is not surprising because this analysis investigates issues of great scientific and policy interest, such as inequality of opportunity and child development. Recent research has also been spurred by the availability of new data; in some countries, household surveys have matured to cover more than one generation.
2013	Gender and Gender Role Differences in Self- and Other-Estimates of Multiple Intelligences	Conducted in London Random sampling of 261 British participants Quantitative study	This study confirmed and extended the rapidly growing research in this area. It showed males tended to rate their mathematical and spatial intelligence higher, and emotional intelligence lower than females. It showed that gender role plays a smaller part than gender with masculinity being seen to be positively related to practical, but negatively related to emotional intelligence. Cognitive abilities/intelligence are seen to be male and masculine and personal/social abilities/intelligence are seen to be female and feminine.
2014	Family Background, Educational Expectation, and College Degree Attainment.	Conducted in China Purposive sampling Qualitative study	Found that those who had strong expectations for a college degree when they were young got significantly more opportunities to enter college, and furthermore, that the development of individuals' expectations for higher education was related to their family backgrounds and parents' expectations. The higher the socio- economic status, the stronger expectations the parents would have for their children to get into college. This was particularly true of the parents who had received higher education themselves. They were able to provide their children with abundant and useful information about college life and learning, to engage more in their children's learning, and to create more supportive conditions.
2015	Relationship between family economic resources, and psychosocial well-being.	Conducted in Uganda Data collected using 90-minute survey administered by trained Ugandan interviewers Quantitative study	The study findings suggest that economic variables do not explain much variance in children's educational or psychosocial functioning. A possible explanation for this finding is that, at baseline, children are starting at a disadvantage economically, with low reported family assets, yet research evidence shows that parental assets positively influence children's educational outcomes.

2016	Effect of Gender on underlying factors of multiple intelligence among school children	Conducted in India Random sampling Quantitative study	In the study under reference significant variations have emerged in the intelligence Linguistic, Musical Intelligence, Bodily Kinaesthetic, Visual-Spatial, and Interpersonal and hence the corresponding null hypotheses were rejected; whereas in the rest of the intelligence i.e. Logical-Mathematical, Naturalistic, Intrapersonal, significant variations on gender basis emerged and the corresponding null hypotheses accepted. In view of the above discussion, there is a dire need to educate parents and teachers about the multiple intelligences of adolescents irrespective of their gender. Adolescence is the age when people start utilizing their talent and interest in a particular field and start aspiring to it as a career/profession.
2018	How does family background affect children's Educational achievement? Evidence from Contemporary China	Conducted in China Random sampling Quantitative study	This study found that factors such as family background, differences in educational opportunities, and children's learning behaviour explained 34.4% of the differences in children's test scores, within which family SES explained 15.5% of the difference. Second, differences in educational opportunities and parental education participation are two important paths for families to affect children's academic achievement. there are significant urban-rural differences in the path and mechanism of the influence of family background: family socioeconomic status has a greater impact on urban student's academic performance than for rural students.
2020	Parental educational expectations and academic achievement in children and adolescents	Conducted in Germany purposive sampling Qualitative study	The study found that parents influence the academic success of their children in many ways, from stating expectations about their academic achievement to the multiple behaviors parents employ at home and in the school to advance children's educational outcomes, such as attending parent–teacher conferences or helping with homework
2020	Utilization of Gardner's Multiple Intelligence Theory for School Counselling System with Usability Testing	Conducted in Malaysia purposive Sampling Qualitative study	This study presented the importance of recognising the students‟ inner strength to help them build their future career as well as to assist them in study. The 9 intelligence types were explained and based on the study, it is found that Gardner's 9 intelligence theory is best used to identify people strengths, and it can be applied to academics too.
2022	Gender differences in self-estimated intelligence: Exploring the male Hubris, Female Humility problem	Conducted in Australia Purposive Sampling Qualitative study	The study found that females in the sample reported lower general self-esteem in line with the trend identified in the literature, this may be a strong factor underlying the male-hubris female humility effect. However further research is needed to elucidate the risk factors that identify patterns of over-/under-estimation of intelligence.
2022	Gender stereotyping in mothers' and teachers' perceptions of boys' and girls' mathematics performance in Ireland	Conducted in Ireland Purposive sampling Qualitative study	The study found that both teachers and mothers overestimate boys' performance in mathematics and underestimate high-performing girls' abilities in the area, all else being equal. This devaluing occurs throughout the achievement distribution, and it reflects stereotypes about boys' 'superior mathematical ability'.

2022	The sexes do not differ in general intelligence, but they do in some specifics	Conducted in USA Random sampling Quantitative study	The study found that similarities in general intelligence may be interpreted incorrectly to mean no important sex differences exist in human cognitive abilities. Here, using CHC theory as a guide to structure findings, it highlighted consistent findings of female advantages in broad processing speed and male advantages in broad visual processing, among other narrow and specific ability and achievement differences

The data included the parents' perceptions of intelligence across gender. The years of publication for the included studies ranged from the year 2011 to 2023. The findings from the 11 papers were synthesised into four themes, six sub-themes that emerged from the data.

The following section discusses themes with sub-themes that emerged.

4.2.1 Theme 1: Parents perception of intelligence across gender

This study found that out of 11 studies that were analysed, three of them indicate that there are no gender differences in general intelligence (Bjorklund & Salvanes, 2011; Fuqin & Yiwen, 2014; Pinquart et al., 2020). Two other studies concluded that there are no overall differences between males and females in general intelligence, but there are some large and persistent differences in cognitive abilities that on average favour males in mathematics or favour females in verbal ability and most tests of memory (Punia & Jyoti, 2016; Reynolds, Hajovsky, & Caemmerer, 2022). One of the key findings deriving from this study is that there is a transition in how intelligence is perceived across genders given the studies that have been conducted across the years.

A study conducted by Punia and Jyoti, (2016) using Gardner's multiple intelligences theory in India. Their study had a sample of 494 school children based on random sampling. After applying statistical technique ANOVA results were reported below:

In linguistic intelligence, the study indicated no gender discrimination found in writing skills and learning skills. It is found that males and females differ significantly in reading skills. The reading skills of females are better than males. Boys and girls have the same writing skills and learning skills. In logical-mathematical intelligence, boys have scored higher mean scores as compared to girls on analytic thinking but not on quantitative reasoning and categorisation ability. Analytical thinking among male children is higher than among female children regarding logical-mathematical intelligence.

In visual-spatial intelligence, male and female respondents differ significantly on Pictorial

efficiency and deep insight, while pictorial efficiency in female respondents is more as compared to male respondents. Deep insight is better in males than females. It was noted that girls like to draw and create pictures, enjoy geometry and arts subjects in school, and for a group discussion; they prefer to draw all the pictures compared to boys. Deep insight is better in boys than to girls. Girls can visualise ideas in mind, they are keen observer and often see things others miss, and they can take things apart and put them back together easily. In musical intelligence, boys and girls are the same regarding their sensitivity towards music. It was indicated that both are equally inclined towards music. They both integrate music equally in their daily life by playing music when doing homework or doing house chores. In naturalistic intelligence, boys have not secured higher as compared to girls, yet no significant difference has been visualised in their natural intelligence across gender basis. Since nature has endowed everyone with natural qualities which is crowned in every human being this could be because variations have emerged to be insignificant.

In bodily-kinesthetic intelligence males and females differ on the factor expressiveness. It is found that females are more expressive while on the other two factors coordination and restlessness respondents do not differ. In intrapersonal intelligence, both genders scored almost equally on the dimension and no significant variation emerged. Girls lead boys on the factor of leadership quality, the boys are stronger in emotions than girls. Lastly, in the interpersonal intelligence boys scored much higher on the dimension as compared to girls and difference has been found significantly in leadership quality but the same on extroverts and sociable.

In Sternberg's (1985) studies there were no readings found that compared girls and boys in terms of their skills and abilities. However, studies found indicate that a person is intelligent if they can first, plan and achieve goals that will help them satisfy what they need in their lives. Secondly, they can take advantage of their strengths to make up for their weakness to survive in their immediate surroundings through a combination of skills (Sternberg, 2012). These skills include analytic intelligence, creative and practical skills essential for survival.

Reynolds et al. (2022) conducted a study in the United States of America (USA) they employed the Cattell-Horn-Carroll (CHC) theory to highlight research findings related to gender differences in intelligence, with a focus on studies of test scores from comprehensive intelligence measures that were obtained from large and representative samples of children and adolescents. With speed processing (*Gs*), short-term memory (*Gsm*) girls performed higher as compared to male counterparts (Reynolds et al., 2022). However, there were no gender differences in the performance that required visual processing (*Gv*), long-term retrieval,

comprehension knowledge (*Gc*), short-term memory, and fluid reasoning (*Gf*) performance (Reynolds et al., 2022). In the aforementioned skills both boys and girls performed equally which indicate no difference in the skills.

This indicates that although there is no standard definition of intelligence, these definitions by different theorists such as Gardner's theory of multiple intelligences, Sternberg triarch theory, and CHC theory of intelligence are used and applied in our understanding of intelligence. The findings of this study suggest that females also excel in other areas of intelligence as compared to their male counterparts; therefore, there is a discrepancy in how other studies associate intelligence with gender. Being a male or female does not classify the level of intelligence.

The data for this study indicates that previous studies have shown when parents estimate their own and their children's overall IQ (general intelligence), fathers estimate their scores significantly higher than mothers estimate their scores, and both parents estimate their sons' IQs higher than their daughters' (Furnham & Gasson, 1998). Five studies that were analysed showed consistent gender differences with males rating themselves higher than females (Pinquart & Ebeling, 2020; Ratty & Karkkainen, 2011; Solbes-Canales et al., 2020; Sswamala et al., 2015; Szymanowicz & Furnham, 2013). This indicates that there is a transition in how intelligence is perceived across genders given the studies that have been conducted over the years. Another study looked at the self and other multiple intelligences and indicated that participants seemed to believe that intelligence was male-normative (Punia & Jyoti, 2016). Previous studies found that males tended to rate themselves as more intelligent than females. As supported by the theory of social constructionism previous studies on how intelligence is linked to gender, indicate that people create their own knowledge and share amongst groups to normalize it. Social constructionism further assumes that what is perceived as real or normal in one culture, might not be considered real in another (Galbin, 2014). Therefore, it is not surprising to have different definitions of intelligence, as different cultures have different understanding of what intelligence exactly is. From this theme, a sub-theme emerged as discussed below:

4.2.1.1 Sub-theme: gender stereotypes

The study found no significant difference in intelligence across gender. A study conducted by Ratty and Karkkainen (2011) indicated that both mothers and fathers expected schoolboys to perform better than schoolgirls on a science test, despite the latter performing just as high. This highlights that gender-role stereotypes impact perceptions of intelligence, regardless of evidence of actual intellectual ability. Traditionally, males are stereotyped as intelligent,

masculine breadwinners, while this is not expected of females who are labelled intellectually inferior and are expected to prioritise caring for their home and children over developing their intellect (Furnham & Gasson, 1998; Muntoni & Retelsdorf, 2019).

This means that females lose their "self-concept" as referring to their abilities about themselves, even when they perform equally as their counterparts in activities. Parents always perceive boys as intelligent as compared to their female children.

The data for this study indicate that gender stereotypes significantly impact people's perceptions of intelligence. Two studies that were analysed indicate that males were significantly more gender-stereotyped than females, and for both genders, a feminine self-image was linked to low academic achievement (Ratty & Karkkainen, 2011). This suggests that gender socialisation focuses on boys than girls in academic performance. Males stereotyped as masculine and therefore intelligent succeeded more academically than those stereotyped as feminine. This is interesting because it reflects the theoretical framework that intelligence is socially constructed, an individual's perception of who they are is influenced by the society they grew up in. Individuals' knowledge about intelligence has been transferred from one generation to the other. This is because social constructionists believe that the understanding of the world or reality results from historical processes of interaction and negotiation between groups of individuals.

4.2.2 Theme 2: Parents' perceptions of children's performance

The current study found that parents' perception of their children's performance has a huge influence on how children perceive themselves. Parents who have positive attitudes towards their children's interests, education, school, and teachers can positively influence their children's academic performance (Muntoni & Retelsdorf, 2019). This means that the support children get from their parents plays a vital role in their lives, and how they perceive themselves. From this theme a sub-theme emerged as discussed below, the sub-theme looks at how parents' positive attitude influences children's performance.

4.2.2.1 Sub-theme: The impact of parents' belief about their children's capability

This study found that parents' beliefs appear to play a particularly important role in how their children perceive themselves. Parent's beliefs about their children reflect their children's self-perceptions of their abilities (Li & Qui, 2018). The belief that parents hold about their children gives motivation to the children to do well. This means that it is important for parents to understand the role they play in their children's understanding of themselves. When a parent

believes in their children's abilities, it gives them motivation and willingness to do more.

The data for this study indicate that, in attempting to understand gender differences in educational performance, literature on educational psychology has established the importance of parents' expectations in influencing their children's achievement, attitudes, and academic performance (Pinquart & Ebeling, 2020). For example, consider how you felt in school or now when your parents or someone close to you appreciates your accomplishment.

Several studies indicated that parents' expectations were related to their children's performance on cognitive tasks (Muntoni & Retelsdorf, 2019), and more broadly, to children's self-perceptions of their ability and academic expectancies. Boys being perceived as good in mathematics motivates them to do well, whereas girls would not be motivated because society has already classified them as not competent in mathematics. Two studies indicate that parents' underestimation of girls' capacity in mathematics is also manifested in their inclination to explain girls' mathematical accomplishments concerning hard work and boys' mathematical accomplishments with references to natural ability (Fuqin & Yiwen, 2014; Ssewamala et al., 2015). Therefore, these concepts are adopted into shared roles and played by each member in relation to one another. Later, these roles are adopted by other people in society and the shared interaction is institutionalised (Cojocaru, 2010; Burr & Dick, 2017). This raises the question of what can be done in societies to limit the belief that parents hold about their children's intelligence across gender.

4.2.3 Theme 3: Family background

This study found that an individual's family background plays a crucial role in their holistic development, particularly in terms of their personal and family identities, as well as their adaptation to socio-ecological and cultural contexts (Björklund & Salvanes, 2011). It influences the transmission of knowledge, skills, and values from parents to children, and provides emotional security, quality relationships, and privacy. Family background impacts children's learning behaviours and academic achievement in different ways, as it constitutes the primary and most significant environment to which the children are exposed. The study conducted by Li and Qui (2018) showed that families play even more important roles in children's academic achievement than schools and communities. In addition, two studies that were analysed found significant positive effects of the parent's income and educational levels on the academic achievement of primary school students based on longitudinal surveys of

families and children in Gansu Province, China (Bjorklund & Salvanes, 2011; Li & Qui, 2018). This means family background plays an important role in support of children's strengths and abilities.

Out of 11 studies that were analysed, two studies indicate that changes in an individual's family background, such as the increasing participation of women in working life, high divorce rates, and the impact of mass media and information networks, have affected the dynamics and functioning of families (Fuqin & Yiwen, 2024; Li & Qui, 2018). Overall, an individual's family background is a fundamental aspect of their lives, as it shapes their experiences, relationships, and integration into society. According to Social constructionism theory, the created knowledge is adopted into shared roles and played by each member in relation to one another. Later, these roles are adopted by other people in society and the shared interaction is institutionalised (Burr & Dick, 2017; Cojocaru, 2010). Therefore, knowledge that is transmitted from one generation to another is socially constructed. This means that gender is not a factor that influences the conceptualisation of intelligence, rather family background influences an individual's ability. Perceived difference is caused partially by family environment, economic resources, and school quality these differences emerged from this theme and are discussed below as sub-themes:

4.2.3.1 Sub-theme: family environment

This study found that in China, Australia, Netherlands, United Kingdom and in the United States, urban children have significantly better academic performance than their rural counterparts. Firstly, the influence of family socioeconomic status on urban students' achievement is greater than that of rural students. The socio-economic status of the family explained 20.8% of the difference in academic performance for urban students and 6.4% of the difference in the academic performance of rural students (Li & Qui, 2018). Secondly, the family background has significant urban-rural differences in the purchase of education services, and the family's socio-economic status explains 29.5% of the difference in the purchase of educational services by urban families and 11.6% of the difference in the purchase of education services by rural students (Li & Qui, 2018). Thirdly, the rural student's academic achievement is explained more by their learning behaviour; the path coefficient of the learning effort on the academic performance for rural children is 0.16 higher than that for urban children in China (Li & Qui, 2018). This means that the family environment contributes to the children's abilities. The performance of an individual is not determined by their gender however, the environment where the family is located plays a huge role in their lives because of the availability of

resources.

Two studies highlighted that not only does the distribution of educational resources across urban and rural areas differ tremendously, but urban and rural households also have quite different socio-economic statuses, lifestyles, and educational patterns (Fuqin & Yiwen, 2014; Li & Qui, 2018). Li and Qui's (2018) study depicts urban children as exhibiting significantly better academic performance than rural children. This might raise a question of how South Africans perceive people from urban areas and people from rural areas in terms of their academic performance. The structural equation model further compares the paths of the effect of family background across urban and rural areas. Therefore, children's family background has a large impact on their academic achievement, which is consistent with the conclusions of three studies that were analysed (Bjorklund & Salvanes, 2011; Pinquart & Ebeling, 2020; Zhao & Hong, 2012). This shows that, on the other hand, children's family background still has a great influence on their intelligence. Gardner's multiple intelligences states that there are multiple intelligences that individuals engage in, the question arises as to why studies refer to intelligence as aligned with academics rather than other abilities as well. This means primary research needs to be conducted to explore other aspects of intelligence.

4.2.3.2 Sub-theme: Economic resources

This study found that families with different socio-economic statuses create different learning environments (Zhao & Hong, 2012). Families affect children's learning behaviours and academic achievements in many important ways, as they are embedded in the primary and most significant environments to which the children are exposed (Fuqin & Yiwen, 2014). Out of 11 studies that were analysed in this study, two studies that were analysed and conducted in China and Finland indicate that family's socio-economic status plays an even more important role in students' academic achievement than schools and communities (Li & Qui, 2018; Zhao & Hong, 2012). Since then, there has been a line of empirical research conducted on family background and children's achievement. It is further indicated that families with a higher socio-economic status can make use of their advantages to gain access to better educational opportunities for their children and to enhance their possibilities in terms of obtaining higher educational achievements (Li, 2006; Liu, 2008; Zhao & Hong, 2012). One study that was analysed highlighted that a family's cultural resources and environment determine children's educational aspirations and performances (Ssewamala et al., 2015). According to Zhao and Hong (2012), parents with rich cultural capital are more aware of the rules of schools, invest more cultural resources, and pay more attention to the need to cultivate their children's educational

aspirations and interests. They help children with the school curriculum and enable them to perform outstandingly in academic pursuits.

This means that socio-economic status has an impact in an individual's intelligence. Individuals who are born in a low socio-economic status are deprived the opportunity to gain access to better educational opportunities, because their families cannot afford some of the tools to assist them gaining more information. At the end of the day people will classify intelligence with a certain gender whereas people come from families with different socio-economic statuses.The data for this study indicates that children coming from families with high socio-economic status have the advantage of attending high-quality schools and having excellent teachers. Study showed that individuals from high socio- economic status are found to be participating in extracurricular tutoring and tutoring expenses have significant positive effects on their academic achievement (Ssewamala et al., 2015). Therefore, the more education services children receive, the better their academic performance. In contrast, children from families with a low socio-economic status experience a drop in achievement scores due to deprivation of academic resources; thus, the greater the gap in wealth in a country, the greater the difference in terms of IQ scores (Zhao & Hog, 2012). Differences in socioeconomic status cause this gap. For example, two children from different families are struggling academically and require additional tutoring courses. A child from a family with a high socioeconomic standing will be able to be supported since his/her family can take their child to private lessons. A child from a low-income household, on the other hand, will be denied the option to attend private lessons due to financial constraints.

One study shows that parental socio-economic status can significantly affect the quality of their children's schooling (Zhao et al., 2012). The higher the socio-economic status of a family, the better schools their children attend (Chen & Fang, 2007; Li, 2008; Wen, 2006; Wu, 2013). Despite the different theoretical perspectives, three research studies have paid attention to the paths and mechanisms of how the socioeconomic status of a family affects children's academic achievements (Li & Qui, 2018; Bjorklund et al., 2011; Pinquart et al., 2020). Among these, the human capital theory stresses the role of the economic resources of the family and educational investment in children's education (Zhao & Hog, 2012). While the cultural capital theory and the social capital theory pay more attention to the role of parents' educational level and participation in children's academic performance, the perspective of school quality argues that the socio-economic status of a family affects children's academic performance and the chance of continuing schooling through affecting qualities. This further adds to the understanding of

theories of intelligence which emphasize that intelligence is perceived as not being unitary, as there are different types of intelligence. This demonstrates that a person cannot conclude and declare that another person is not intelligent simply because they focused on one component of intelligence when there are various types of intelligence. This indicates that more primary research studies need to be conducted to further explore this topic by considering different aspects of intelligence as well.

4.2.3.3 Sub-theme: school quality

This study found that the quality of the children's school has a significant positive effect on their academic achievement. Li and Qiu's (2018) study indicates that the higher the quality of the child's school, the better his or her academic performance is supported but also positively affects their learning behaviour. The better the quality of the children's school, the more active their learning behaviour. This means the quality of the school that parents take their children to have a positive impact on their intelligence. Looking at how information is being delivered, attention being given to each learner and availability of resources as well.

The data for this study indicates that the more education services children receive in the market, the better their academic performance is supported. Therefore, the quality of school does contribute to the intelligence of an individual whether it's a male or a female. This raises the question that those children attending schools with limited resources are less intelligent, or is it the lack of resources that denies them the opportunity to prove themselves?

It is interesting to find that high-quality schools not only have excellent teachers but also have a good source of students. The quality of the school children attends not only directly affects children's academic achievement but also affects their learning behaviour through teachers and peers (Li & Qiu, 2018). It is surprising to find that the impacts of any type of factors cannot exist independently. All the factors, including the family's economic resources, family environment, and the school's quality are important. The issue is that all of them are exogenous factors that only take effect through students' behaviours; therefore, gender is not a contributing factor to an individual's level of intelligence.

4.2.4 Theme 5: Influential background

According to Li and Qui (2018), children often mimic their parent's actions, which means that children will strive for higher education when their parents' educational attainment is also high. Secondly, educated parents have resources to teach and help their children outside the classroom. They act as a resource themselves. Therefore, parental education participation has

a significant positive effect on children's learning behaviour (Li & Qui, 2018).

4.2.4.1 Sub-theme: impact of parental education

This study found that not only does the family's socio-economic status, family environment, and school quality influence children's academic performance. However, parental educational participation or involvement has an impact on children's academic performance (Pinquart & Ebeling, 2020). Parental education and participation have an indirect effect on children's academic achievement by affecting children's learning attitudes and behaviours; also, it has a direct impact on children's academic performance; therefore, the higher the degree of parental participation, the better the academic performance of children. This means parents' involvement in their children's education does contribute positively to their academic which indicates that children get motivated and be willing to learn more. In addition, parents get to understand their children's strengths and weaknesses and be aware of what support to give to them.

Out of 11 studies that were analysed in this study, one study has also shown that parents who have more abundant social network capital can maintain better communication with teachers and other parents, which indirectly improves children's academic performance (Fuqin & Yiwen, 2014). In this case, parents get to know how to intervene in support of their children. They can notice their children's intelligences as indicated by Sternberg's triarchic theory of intelligence whether their children have creative, analytic, or practical intelligence, and that makes it easy for them to focus on where their intelligence lies. Therefore, parental education and participation have a significant positive effect on children's learning behaviours. The more parents participate in the education of their children, the more active the children's learning behaviour becomes.

Educational inequality is shaped by the different opportunities and capacities that families have in terms of participation in education (Bjorklund & Salvanes, 2011). Therefore, the relationship between family background and educational achievement has become a critical indicator in evaluating educational equality or inequality (Fuqin & Yiwen, 2014). A study has shown that since the Open and Reform of China, the family's socioeconomic status has become increasingly important in determining personal educational achievement, which has not been dampened by the expansion of schools (Deng & Treiman, 1997; Li, 2003, Li, 2006; Liu, 2008; Li, 2010; Li, 2016; Wu, 2009; Wu, 2013a; Zhou et al., 1998).

Educated parents are seen as more involved in their children's academic achievements through

providing different behavioural support for their children's education, such as discussing what happens in schools with their children and assisting them with their homework. This raises the question of how children with uneducated or uninvolved parents find motivation in their academic and personal lives.

4.3 Conclusion

This chapter explored and described the findings of the study as related to the themes and sub-themes that emerged from the review of the literature. The chapter also provided a discussion of the identified themes and made links to the literature. The findings of the study indicated that gender is not a factor that influences the conceptualisation of intelligence, rather family background influences an individual's ability. The perceived difference is caused partially by family environment, economic resources, and school quality.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarises and concludes the findings obtained from this review. It discusses the limitations of the study, summarises the findings, and offers recommendations for future research in the field of psychology. The previous chapter explored intelligence and revealed that the concept is undoubtedly one of the well-researched psychological constructs within the field of Psychology. However, to this date, theorists still struggle to find consensus regarding what constitutes intelligence. It was also revealed that one of the main reasons for this lack of consensus is that it is a social construct, which means that notions of what is considered intelligent behaviour vary across cultures.

Chapter 1 introduced earlier studies focusing on parents' perceptions of intelligence across genders. Different perspectives were discussed in depth in Chapter 2, which comprised the study's literature review, focusing on the historical background of previously conducted studies. Chapter 3 provided the step-by-step methodological plan which included the search, data collection, data findings, and data extraction processes, which were all discussed in depth for the reader to have a clear understanding of how the research was conducted. Chapter 4 presented the findings and discussion of these findings. Chapter 5 presents the conclusion and recommendations for further study.

This study sought to get an understanding of the impact of the social construction of parents' perception of intelligence across genders, including how they perceive their children in terms of intelligence. It sought to determine whether males are perceived as intelligent as females. Moreover, previous studies indicated that males are more intelligent than females.

From a socially constructive perspective, it was evident that parents have complied with societal rules in viewing their children's intellectual capabilities. It seems that being a part of a community and being accepted by society supersedes any individualistic perspective. The available data indicated that parents have been controlled by these societal expectations in perceiving intelligence in its categories. Moreover, it was evident that one social construct can have an impact on many other negative social factors such as lack of self-confidence among children.

The conclusion drawn in relation to the research questions was that gender is a factor that does

not influence an individual's level of intelligence. There are factors that determine intelligence rather than associate gender with intelligence. These factors include socio-economic status, background of a person, and the family's educational level.

5.2 Summary of findings

- The reviewed literature and statistics have revealed that gender is not a factor that influences the conceptualisation of intelligence; however, there are environmental factors that have an impact in an individual's level of intelligence, and these include the socio-economic status (SES) of the family, family background and parents' educational level.
- The socio-economic status of the family has an impact in the conceptualisation of intelligence. Children who are born in families that have a high socio-economic status have advantages of being in well-resourced schools and attending private tutorial classes, unlike those from low socio-economic statuses, who attend poorly resourced schools and cannot afford private tutorial classes.
- Individual's family background is a fundamental aspect of life, as it shapes the experiences, relationships, and integration into society. Family background influences the transmission of knowledge, skills, and values from parents to children, and provides emotional security, quality relationships, and privacy. It impacts children's learning behaviours and academic achievement in different ways, as it constitutes the primary and most significant environment to which the children are exposed.
- Parents' educational background is one of the factors that influences the conceptualisation of intelligence. Children who have uneducated parents do not get a chance to be assisted with their homework at home; however, children with educated parents do constantly motivate their children by assisting them with homework, constantly checking their homework and providing them with emotional and psychological support that boosts their self-esteem.
- Therefore, gender is a factor that does not conceptualise an individual's level of intelligence.

5.3 Limitations of the study

In conducting this systematic review study, a few limitations arose. One of these limitations involved the data collection process. Most of the retrieved studies were conducted internationally, thus reflecting the perspectives of parents international, Therefore, the views that dominated the study were not from parents living in Africa. Although the inclusion criteria

were vital, the researcher had to exclude relevant studies which were not written in English and not in full text. Lastly, this review was based on secondary data from different countries. Decisions were made according to whether the study met the inclusion criteria; therefore, the researcher may have been biased by focusing mostly on qualitative studies. Most the studies align intelligence to academic performance.

Moreover, it would have been more beneficial if the study was conducted in South Africa as the empirical study. The publication bias was evident in the study, as the study only considered peer-reviewed articles. The researcher acknowledges that not all research materials is published in journals and that not all journals are indexed, which means that there was a possibility that very meaningful materials were excluded from the present study.

The articles were all collected through the University of KwaZulu-Natal's online database, thus acknowledging the limitations and challenges that the researcher faced.

5.4 Recommendations

Expansion of the study

- The limitations of the study offer the potential for future research to expand on the current research by including studies of different languages. It is recommended that future researchers do not only focus on English studies as part of their inclusion criteria, but to further look at other studies which used other languages for them to get more information and different opinions as well. Language was found to be one of the factors that limited people's access to information.
- Future researchers should consider expanding the literature in the South African context. It would be progressive to also get an insight into how South African parents perceive intelligence across gender.
- Researchers can further compare and contrast the views of South African parents and those of other parents internationally.
- Future researchers should conduct empirical studies and interview South African parents to elicit their perspectives of intelligence across gender. Conducting a systematic review has many limitations and biases; therefore, it is recommended that prospective researchers continue with this study by conducting primary research which does field interviews in South Africa to get an idea of how parents perceive intelligence across gender.
- For future researchers to explore at South African context if family background, socio-

economic status, and family's educational background have an impact on children's intelligence.

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Appendix B: Ethical clearance letter

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

17-08-2023
Miss Nolitha Duntsula (217012099)
School of Applied Human Sciences
Pietermaritzburg

Dear Miss Nolitha Duntsula,

Original application number: 00022703
Project title: Exploring parents perceptions of intelligence across gender; systematic review

Exemption from Ethics Review

In response to your application received on 30 July 2023, your school has indicated that the protocol has been granted **EXEMPTION FROM ETHICS REVIEW.**

Any alteration/s to the exempted research protocol, e.g., Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through an amendment/modification prior to its implementation. The original exemption number must be cited.

For any changes that could result in potential risk, an ethics application including the proposed amendments must be submitted to the relevant UKZN Research Ethics Committee. The original exemption number must be cited.

In case you have further queries, please quote the above reference number.

PLEASE NOTE:
Research data should be securely stored in the discipline/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours sincerely,

[redacted]

Prof Lauren Eva Dyll
Academic Leader Research
School of Applied Human Sciences

Appendix C: Editors Letter

Mufasa Research Consultancy SERVING WITH DISTINCTION

Serving with distinction

23 January 2025

To Whom It May Concern,

Re: Editor's Letter

EXPLORING THE PARENTS' PERCEPTIONS OF INTELLIGENCE ACROSS GENDER; SYSTEMATIC REVIEW

Below is the scope considered during language editing of the masters dissertation above:

- Grammar check
- Sentence construction
- Spelling check
- Punctuation
- In-text referencing

As a professional editor, I pledge that the above aspects of the dissertation were, to the best of my knowledge, meticulously and correctly done at the time the work was sent to the student. However, I am not responsible for any corrections that were made after the editing process was finalised.

Yours faithfully,

[redacted]

Kemist Shumba (PhD)

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