Antecedents and consequences of brand preference in the cement industry

A Research Report Submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in Partial Fulfilment of the Requirements for the Degree of Master of Management in Strategic Marketing

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ABSTRACT

Purpose

The study investigates the antecedents and outcomes of brand preference in the South African Cement Industry. The theoretical groundings of the study are the Theory of Brand Equity and the Theory of Planned Behaviour. The constructs examined include brand image, perceived quality, price, the influence of others, sales promotions, packaging, brand preference, word-of-mouth, and purchase intention.

Design/Methodology

A self-administered questionnaire was employed and obtained 260 valid responses. Structural Equation Modelling was used to test the proposed conceptual model and CFA was used to measure the relationship between the variables using SPSS v28 and AMOS.

Findings

The findings of the study revealed that perceived quality, brand image, price and the influence of others positively impact brand preference. Furthermore, the study found brand preference positively influences word-of-mouth and purchase intentions. The study revealed that sales promotion and packaging do not play significant roles as antecedents of brand preference in the cement industry.

Originality/Value

This study explored the choice of cement brand from a business-to-business point of view and from a retail to consumer point of view. As far as the author knows, this is first study to investigate brand preference in the South African Cement Industry.

Keywords: Brand preference, Purchase intention, Brand Image, Word-of-mouth, Perceived Product Quality, Price, Packaging, Influence of Others, Sales Promotion

DECLARATION

I Goitumetswe Pitso (Student number: 675714) am a student registered for Master of Management in Strategic Marketing in the year 2022. I hereby declare the following:

- I am aware that plagiarism (the use of someone else's work without their permission and/or without acknowledging the original source) is wrong.
- I confirm that ALL the work submitted for assessment for the above course is my own unaided work except where I have explicitly indicated otherwise.
- I have followed the required conventions in referencing the thoughts and ideas of others.
- I understand that the University of the Witwatersrand may take disciplinary action against me if there is a belief that this is not my own unaided work or that I have failed to acknowledge the source of the ideas or words in my writing.

Signature:

G. Pitso

Date: 15 November 2022

DEDICATION

The completion of this report is dedicated to my wonderful mother, Kenaope Pitso, thank you for your support in this journey, and to my uncle, Wonder Sehole, for encouraging me to enrol for this great course. Thank you to family, friends, colleagues, and everyone who participated in my study. I would not have been able to complete this research report without your help. And finally, thank you to my late father, Gaki Pitso, for everything you've done for me, I really appreciate it.

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Chapter 1: Overview of the study

1.1 Introduction

The chapter includes the study's background, context, and problem statement, which lists the key issues that the objectives of the study address. Furthermore, the study's research questions, significance, and delimitations are also discussed.

1. 2 Background of the study

A core issue in branding strategy is how to build and maintain consumer brand preference (Kao, 2019). It is also important to remember that one of the crucial roles of marketing is the creation, maintenance, and expansion of a brand (Shariq, 2018). The South African Cement Industry is under pressure, according to experts the reasons for this include reduced spending by government on large infrastructure projects (globenewswire, 2020). Another reason for the decline in the sales of cement is reduced retail demand which was a result of a surge in sales that was experienced during the COVID-19 pandemic as consumers spent money on home improvements (West, 210%22a). However, there are also growth opportunities, for example, the number of homes being built in rural areas in South Africa is growing steadily. One of the reasons for this is a trend of young people leaving their rural homes and going to metropolitan cities for work and they save money to build a home or start businesses in their rural areas (Hippo, 2019). This trend was highlighted in PPC’s 2022 annual audited financial statements for the year ended 31 March 2022 which outlined that cement sales benefited from demand growth in the informal and rural markets (PPC, 2022). Laduma Hardware Group which has a business strategy that is targeting the rural and semi-urban communities has enjoyed consistent growth of 6% in annual earnings, 28% of sales coming in the form of the sale of cement which is a base product with which to start building (DIYNews, 2020).

In declining or mature industries, there are numerous advantages of brand preference. Numerous authors have explored various attributes that contribute towards brand preference in different product categories, including factors such as packaging which was explored by Halabi (2021); Waheed, Khan and Ahmad (2018). Brand image was explored by Cham, Cheng, Low and Cheok (2020). In most cases, the brand name is the only difference between the products (De Toni, Pompermayer, Lazzari, & Milan, 2021).

Around the world, cement is a crucial component of mortar and concrete which is used as a binder (Garside, 2021). Its origins may be traced back to ancient Greece and Rome, approximately 2000 years, when lime was combined with volcanic ash and water to create a binder (Garside, 2021). Today, there are over ten different types of cement with varying compositions and manufactured for various uses in construction (Dunuweera & Rajapakse, 2018).

This study investigates the antecedents of brand preference and its consequences in the South African cement industry. There are studies that have explored the factors influencing brand preference in the cement industry around the African continent, one such study explored various factors which included the price and quality of cement in Ghana (Bonney, Song, Jingwei, & Peng, 2022). Another study extended these factors to include packaging for selecting a cement brand in Ethiopia (Tadesse & Tessema, 2020). The South African cement industry is one of the biggest in the Africa, yet there are limited studies focusing on consumer brand preference in the cement industry.

1.3 Context of the study

1.3.1 Overview of the Global Cement Industry

The Global Portland Cement industry reached a volume of 2.1 billion tons in 2021 and is expected to reach 2.7 billion tons by 2027 with an estimated compound annual growth rate (CAGR) of 4% between the 2022 and 2027 period (Markets, 2022). Cement is a product that fulfils a basic need in society, both commercially, as in the construction industry, and personally, in domestic homes for day-to-day building and repairs (fortunebusinessinsights, 2021).

China produced an estimated 2.2 billion metric tons of cement and their production capacity for cement is equivalent to over half of the world’s cement (statista, 2022). Due to the country's extensive infrastructure development, India is now the world's second largest cement manufacturer, second to China (Baidya & Ghosh, 2019). The high consumption of cement in China and India demonstrates that the cement industry is dependent on a rising population and infrastructure development. A lack of construction activity resulted in South Africa's largest construction firm, Wilson Bayle Holmes – Ovcon (WBHO) pulling out of Australia because of the impact the COVID-19 pandemic had on the industry (Venter, 2022). Lockdown restrictions significantly reduced demand and delayed the awarding of new projects in sectors of the construction industry and this created business uncertainty (Venter, 2022).

The cement production capacity in Africa increased from 262 million tons per annum (Mt/a) in 2014 to 386.1 (Mt/a) in 2020 (zkg & cement, 2022). In cement terms, the African continent can be split into two main regions, which consists of the North African region stretching from Morocco to Egypt (cemnet, 2020) and the Sub-Saharan region which stretches from Nigeria to Zimbabwe (and includes South Africa) (data.worldbank, 2022). Per capita cement consumption (PCC) is often used in comparison to GDP as an indicator of a country's development (Choplin, 2020). In the African market, in 2014, the PCC in North Africa stood at 553 kg and production was 98.2 Mt/a whilst in Sub-Saharan Africa, the PCC was 102 kg and produced 85.2 Mt/a (zkg & cement, 2022). In 2020, the picture was significantly different, which saw the PCC of North Africa decreasing to 435 Kg and produced 91.8 Mt/a of cement, whilst in Sub-Saharan Africa, the PCC slightly increased to 113Kg in 2020 and produced 121.Mt/a of cement (zkg & cement, 2022).

The African continent represents a significant growth opportunity for cement manufacturers, and this is because of large infrastructure projects in the pipeline (Barnes, 2022). Urbanisation in the African continent is seen as a key driver for the future growth prospects of the industry. According to worldometers (2022), the African content has a population of 1.4 billion people which makes up 16% of the total world population. The African population is expected to triple by 2050, adding 800 million people and the infrastructure requirements of the rising population need to be met, such as the construction of schools and hospitals (Madden & Gutman, 2020). Cement production is seen as a mechanism for boosting productivity, innovation, and inclusive growth (Choplin, 2020). It is important to increase production to reduce the cost per bag, thus making the product more affordable (Choplin, 2020).

Concrete is the most frequently used substance on the planet after water, and if the cement industry were a country, it would be the world's third greatest carbon dioxide emitter behind only China and the United States (Malsang, 2021). It is estimated that 4.1 billion metric tons of cement are produced annually accounting for 8 – 10% of global atmospheric carbon dioxide emissions (Poudyal & Adhikari, 2021). The production process of cement has several negative effects on the environment and human health (fortunebusinessinsights, 2021). Limestone, chalk, clay, and silica sand are some of the raw materials used in cement production (Dunuweera & Rajapakse, 2018). The various raw materials are blended and heated at high temperatures in a rotary kiln to make clinker, an intermediate product, which is finely powdered and mixed with gypsum to produce cement (Garside, 2021). The kiln procedure, which burns fossil fuels, generates 40% of the carbon dioxide emissions. Half of carbon dioxide is generated from the creation of quick lime which is a crucial component for generating clinker and cement as the final product (Ighalo & Adeniyi, 2020).

Sustainability is a major focus area for the cement industry and sustainability is defined as achieving an ecological balance through avoiding the depletion of natural resources (Ighalo & Adeniyi, 2020). As urbanisation and industrialisation continue to grow, the need for and production of cement will also rise. Cement manufacturing is a high-volume process and an increase its production would result in a high impact for the environment (Ighalo & Adeniyi, 2020). There is a movement towards the adoption of green cement in the construction of eco-friendly and sustainable buildings which is expected to promote the growth of the industry (fortunebusinessinsights, 2021). The industry's growth will be fuelled by a rising population, which will compel the need for residential spaces, such as apartments and non-residential development, like airports and malls (fortunebusinessinsights, 2021).

1.3.2 Overview of the South African Cement Industry

The South African cement industry is the largest in Southern Africa and is one of the largest on the African continent and is worth R46 billion (WWF, 2018). Around 90 000 people are directly or indirectly employed by the cement industry (Craig, 2020). Table 1.1 outlines the major cement producers in South Africa and their estimated market share.

Table 1. 1: South African Cement Manufacturers and market share

Cement manufacturer	Market share %
PPC	21
NPC-Cimpor	15
Sephaku Cement	12
AfriSam	10
Lafarge	9
Mamba Cement	4
Blended cement and imports	28

Source: WWF (2018)

South Africa is considered a developing country and that is taking into consideration South Africa's abundance of goods and natural resources and the remarkable progress the country has made in the fields of industry and manufacturing (Bakari, 2017). South Africa has a good core infrastructure network such as a transport system, power, communication networks, sewage disposal, and running water. However, while there is a good core network, previously disadvantaged areas and rural areas do not have the same adequate infrastructure as developed communities due to high social inequality (dbsa.org, 2022). The president of the country announced a R100 billion infrastructure fund in the 2022 State of the Nation Address (SONA), which involves working with state entities to prepare a pipeline of projects which include student housing, social housing, telecommunications, water and sanitation, and transportation (Mthombeni-Möller, 2022). According to Ghosh (2019), an expansion of infrastructure projects results in a direct contribution to the cement industry, as well as indirect contributions in other sectors in terms of employment generation, increased income for government and an increase of foreign exchange earnings. The infrastructure development drive would provide much needed relief to the construction industry. The South African economy contracted by 0.7% in the in the second quarter of 2022 (StatsSA, 2022c). There are various factors that have contributed to the decline in GDP which include load shedding and the devastating floods that the Kwa Zulu Natal province experienced in April 2022 (StatsSA, 2022c). The GDP figures highlight the distress of the South African construction industry, which contracted by 2.4% for the second quarter of 2022 and is 24% smaller than it was before the pandemic in the second quarter of 2019 (StatsSA, 2022c).

In 2014, the construction sector in South Africa employed 1.4 million people nationwide which helped to address unemployment; the sector also had one of the highest turnovers in the country. The sector contributed 4% to economic growth in the first quarter of 2015. However, since then, the situation has declined in recent years; this has contributed to the economic decline of South Africa’s economy in 2020, which is experiencing its sixth consecutive quarter of economic decline (Dithebe, 2022). There has been significant growth in tender activity over the last couple of years (excluding 2020), however these tenders have not been awarded (Dithebe, 2022). This occurs as numerous state-owned entities, local governments, and other government ministries continue to delay executing the infrastructure investment plan (Industry Insight, 2022).

Although the South African cement industry is experiencing a recovery from the relatively low base of 2020 which was the height of the lockdown, industry experts and economists also predict a full recovery of the cement industry before mid-2024 (ICR, 2022). JSE listed hardware retailer, Cashbuild, recorded a double-digit decline both in revenue and operating profit for the six months ended December 2021 (Mofokeng, 2022). One of the factors that attributed to the retailer’s decline in financial performance over that period was that as South Africans return to work due to the relaxing of COVID -19 restrictions, there has been a shift in consumer spending priorities towards leisure activities and entertainment. People are no longer spending on home upgrades and upgrading home offices, as they were at the start of the epidemic (Mofokeng, 2022).

1.4 Theoretical Grounding of the Study

The Brand Equity Theory (Aaker, 1991) and the Theory of Planned Behavior (Fishbein & Ajzen, 1975) form the theoretical grounding for the research study, and these are briefly discussed next.

1.4.1 Theory of Brand Equity

Various authors have their definitions of brand equity. However, two famous explanations related to brand equity come from Aaker (2009) and Keller (1993). Brand equity is the collection of brand assets and liabilities associated with the companies' name (Aaker, 2009). There are two general reasons for studying Brand Equity, the first reason is financially based, and the aim is to estimate the value of a brand for accounting purposes (both for asset valuation and for the balance sheet) (Keller, 1993). The second reason for studying Brand Equity arises from a strategy point of view to improve marketing productivity and this is considering greater competition, increased costs and flattening demand in many industries (Keller, 1993). One of the debates around Keller and Aaker's determinants of Brand Equity is the element of brand loyalty. Aaker is of the view that brand loyalty is one of the core elements of brand equity. However, Keller believes that brand loyalty is an outcome of brand equity (Kataria & Saini, 2019). However, both authors outline the steps involved in taking a customer from just being aware and indifferent towards a brand to a state of intense loyalty. This study employs Aaker's Model of Brand Equity.

1.4.2 The Theory of Planned Behaviour (TBP)

The Theory of Reasoned Action (TRA) laid the foundation for the Theory of Planned Behaviour (TPB), which proposed that people who are predisposed to engaging in a particular behaviour can do so and that, if they so choose, they can simply cease from engaging in it. It has proven effective to utilise the Theory of Planned Behaviour to explain and forecast behaviour in a variety of contexts, from physical activity to drug usage (Ajzen, 2020). Four predictors are considered by the Theory of Planned Behaviour. These predictors are intention, attitude, subjective norms, and perceived behavioural control (Ajzen, 1989). Furthermore, TRA states that performance of the behaviour should be a direct function of behavioural intentions. Although a favourable attitude and conducive subjective norms provide motivation to engage in certain behaviour, the intention to act is only formed when perceived control over the behaviour is strong (Ajzen, 2020).

1.5 Problem statement

The brand is one of the most important factors that contributes to market development, the commercial viability of the organisation and the brand is the soul of the business which resides in the minds of consumers (Duc, Mai, & Anh, 2022). Given the pressure that is faced by the South African cement industry, the only way a company can step away from price wars, is by offering consumers a valuable brand (Mainardes, Júnior, & Andrade, 2019). The South African cement industry forecasts reduced demand in the industry without major government infrastructure projects. Furthermore, limited research has been conducted in the South African cement industry to explore the antecedents of brand preference in the local industry. Understanding the drivers of brand preference in the South African cement industry is crucial in the current operating conditions, considering that the hardware industry is on a downward trend.

The cement industry is going through a difficult period, and there are various factors to consider, one of them is the increases in interest rates to curb inflation which has resulted in consumers reducing expenditure on non-essential goods (Sephaku, 2022c). According to StatsSA (2022b), retail trade sales are up by 6.3% for the period between March – May 2021 and March - May 2022. However, in that same period, retail hardware, paint and glass sales decreased by 4%. This demonstrates that consumers are spending on retail, however they are not spending in hardware stores (StatsSA, 2022b). To illustrate this, Sephaku sales were 10% lower year on year for the 6 months ended 30 September 2022, due to low demand and increased competition {Sephaku, 2022 #287}. What is intriguing, though, is that PPC, South Africa's oldest and largest cement brand, experienced a 1% decline in sales volumes compared to the same period in the previous year for the six months ended 30 September 2022, whereas Sephaku Cement which is one of the latest entrants experienced a 10% decline in sales compared the same period in the previous year. This demonstrates although the industry is not doing well, the more established brand is in a better position to whether the difficult trading conditions. The cement industry is expected to face intense competition unless there is traction in the proposed government infrastructure initiatives or the imposition of safeguard tariffs against cement imports (Sephaku, 2022c). Apart from the major manufacturers, which make up 71% market share (WWF, 2018), there are more cement brands entering the market, there are an estimated 60 variants of blended cement brands in the Gauteng province (Phillip, 2019). The combination of these factors has resulted in intense competition between incumbents, importers, and blenders (Sephaku, 2022c). In an industry where consumers are buying less, it is essential to ensure that when consumers do make a purchase of cement, they purchase a certain manufacturer's brand. This is because brands with higher market share have more customers who display loyalty to the brand, whereas brands with little market share have fewer customers who display less loyalty to the brand the brand (Tellis, 2018). This was demonstrated in the difference of the published annual results of PPC and Sephaku as both companies are publicly traded. PPC experienced growth in cement demand from the informal sector and rural areas, whereas Sephaku sales volumes dropped by 1% in the same period, and it is important to note that bagged cement constitutes 80% of Sephaku sales volumes and is distributed through major hardware retailers and second-tier distributors (Sephaku, 2022a). The outcomes of brand preference in this study are purchase intention and word-of-mouth which are vital for purchases and repurchases which impact the bottom line.

1.6 Research objectives

Given the identified research problem, the research study achieves the following objectives.

Objective 1

- To establish the antecedents of brand preference in the cement industry.

Objective 2

- To establish the consequences of brand preference in the cement industry.

1.7 Research questions

The research questions, in line with the set objectives, are as follows:

Question 1

What are the antecedents of brand preference in the cement industry?

Question 2

What are the consequences of brand preference in the cement industry in South Africa?

1.8 Purpose of the study

The purpose of this research is to explore the antecedents of consumer brand preference in the South African cement industry. Branding is a way to differentiate an organisation's product when it is the same as others in the category (Chokpitakkul, Anantachart, & Hamilton, 2020). Furthermore, customers are looking for the same product with the same functions in the same competitive market, however the diverse group customers have diverse measures when evaluating the brands (Taher, 2020). The antecedents are determined by the nature of the market, for the cement industry, the antecedents may be product quality or the brand image of the manufacturer. Consumers are willing to pay a differentiated price for the products of a famous brand when several markets become commoditised (Mainardes et al., 2019). The South African cement industry is 24% smaller than it was 2019 (StatsSA, 2022c) and is more competitive due to new entrants in the market. This study gains deeper knowledge regarding factors that drive brand preference and purchase intention in this competitive market.

1.9 Contribution of the study

The contributions of the study are two-fold, practical contributions, and theoretical contributions.

1.9.1 Theoretical contributions

The conceptual framework, which comprises constructs related to the antecedents of brand preference, word-of-mouth, and purchase intention, offers an understanding about the relationships among these variables when related to the sale of cement. Brand equity explains why marketing branded goods or services produces different results from marketing unbranded goods or services. Furthermore, one of the principles of branding and brand equity, as described by Keller (2013), is that there are various ways in which brand worth can be realised. The study contributes by examining the antecedents and consequences of brand preference, as well as the various ways in which brand value can be realised in connection to the outcome variables within the South African cement industry context.

1.9.2 Practical contributions

Practically, this study identifies which factors contribute towards brand preference in the cement industry, which aids in resource allocation for the various factors that are investigated in this study.

1.10 Delimitations of the study

The limitations of the current study were firstly, the choice of the research design which was a quantitative study using self-administered questionnaires. Although self-administered questionnaires have their advantages, the disadvantage is that the researcher was not present when respondents were answering questions, which was important to clear any ambiguities that the respondent may have experienced.

1.11 Definition of key terms

Brand Preference: Brand preference looks at an individual's perception towards a brand and the level at which they desire to purchase it (Puriwat & Tripopsakul, 2021).

Purchase Intention: Purchase intention is one of the primary predictors of consumer behaviour and refers to a customer's intention and plan to purchase a good or service in the future. (Gorji & Siami, 2020).

WOM (Word-of-mouth): Brand communication is not only generated by the company, but consumers are also involved in that process (Dewi, Syah, & Kusumapradja, 2020). Word-of-mouth is defined as informal communication amongst consumers regarding their usage, ownership or characteristics of products and services (Hilal, 2019).

Perceived Quality: Perceived quality can be defined as the judgement consumers come to about the degree of excellence or superiority of a product (Rosillo-Díaz, Blanco-Encomienda, & Crespo-Almendros, 2019). Furthermore, it is a mental assessment on the part of the consumer and considers perceived quality as an abstract concept linked to the individuals' attitudes.

Packaging: A product's packaging serves as both a means of protection from the environment and for product marketing**.** Also, past studies have referred to packaging as a “salesman on the shelf”, moreover packaging is considered a primary medium for communication and branding (Waheed et al., 2018).

Brand Image: Brand image is a “consumers' views of a brand as represented by brand associations kept in the consumer's mind." These associations can take many forms, and they might represent product features or aspects that are unrelated to the product (Keller, 2013:72). Consumers' perceptions of a brand's quality, as well as their attitudes and affection for it, are influenced by its image, which becomes even more important when consumers must choose between competing brands (Kim & Chao, 2019).

Influenced by others: Consumers are susceptible to social influence, which is a common trait shared by people. This trait has a favourable and significant association with a variety of social contexts, including consumer decision-making and product and brand evaluation (Mainardes et al., 2019).

Price: Price is a monetary unit or other measure that is exchanged to obtain ownership rights or the use of goods and services (Havidz & Mahaputra, 2020). Price is defined by four factors which are price affordability, price consistency with product quality, price consistency with benefits, and price according to ability or price competitiveness. There are two ways in which price can influence the selection of a brand, either by choosing the cheapest option to avoid potential losses, or to choose the most expensive option to obtain the best level of product quality.

1.12 Organisation of the study

Chapter 1 - Overview of the study
Chapter 2 – Literature review
Chapter 3 – Research methodology
Chapter 4 – Presentation of results
Chapter 5 – Discussion of results
Chapter 6 – Conclusions and recommendations

1.13 Chapter 1 Summary

. This chapter included the study's background, context, and problem statement, which highlighted the primary issues addressed by the study's objectives, as well as the research objectives, questions, significance, and delimitations. A literature review follows in the next chapter.

Chapter 2: Literature Review

2.1 Introduction

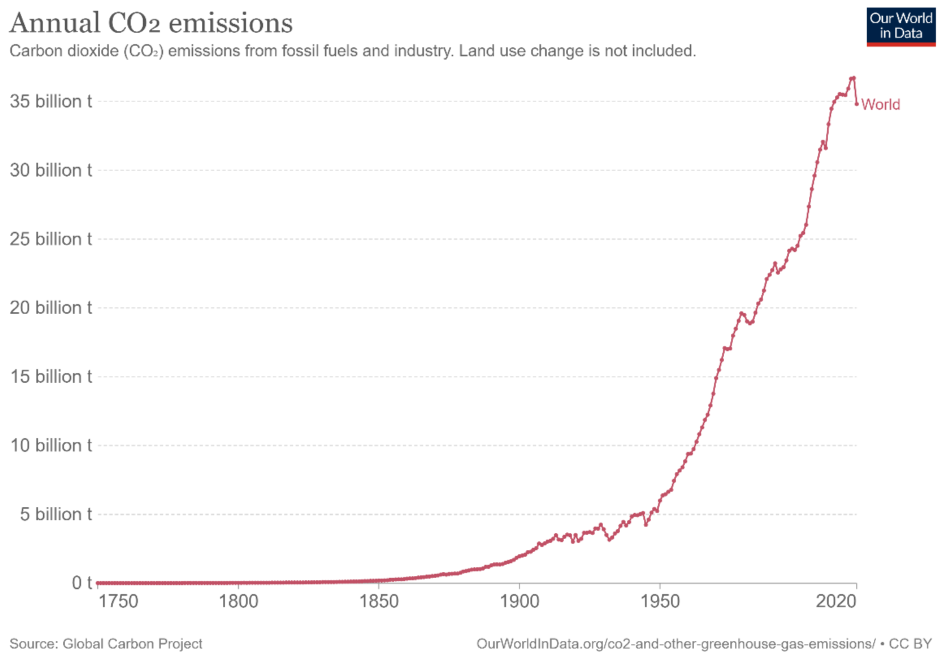
To gain a deeper understanding of the causes and effects of brand choice in the cement industry, this section looks at a variety of literature and earlier study findings. The study discusses the antecedents of brand preference and what can be expected from the outcomes. The chapter focuses on the pertinent dynamics of the industry, which include the global and local cement industry. The theoretical groundings of the study are also explored in detail, namely, the Theory of Brand Equity and the Theory of Planned Behaviour. The conceptual framework is also introduced in this chapter and the various constructs are discussed.

2.2 The Cement Industry

The market for cement worldwide had a value of 313.60 billion dollars in 2020 and is predicted to increase to 458.64 billion dollars by 2028 (fortunebusinessinsights, 2021). The cement industry is important for the development of related industries, such as construction, which is a driver for economic growth in emerging economies (Savović, Mimović, & Domanović, 2021). The cement industry has traditionally played a critical part in a country's socio-economic development (Shrivastava & Shrivastava, 2017). The consumption of cement is an important indicator of a country's prosperity; the industry is vital to the country's GDP (Reddy, 2020). Due to its global expenditure and investment, the cement industry is essential (Leone, Macchiavello, & Reed, 2021). Like oil, cement is an absolute necessity for the society we live in today and is needed in the construction of roads, schools, sewage systems and other essential infrastructure (Farfan, Fasihi, & Breyer, 2019). Cement production is typically close to large cities where it would reach its intended market (Farfan et al., 2019). Future growth prospects of the economy have become the main driving engine behind the growth of the cement industry, and it can also be said that the growth of the economy will result in the growth of related sectors through the increase in capacity of infrastructure developments that will occur, increasing the demand for cement (Ghosh, 2019).

The cement industry is essential for the socio-economic development of a country, however the industry is also seen as being responsible for the consumption of scarce fossil fuels and pollution (Shrivastava & Shrivastava, 2017). Environmental concerns and consumer environmentalism are the two biggest drivers that are shaping industrial competition patterns around the world (Akturan, 2020). The cement industry accounts for 7- 8% of global carbon emissions, the majority of which are created during the production process (IFC, 2020). To tackle climate change, world leaders at the Climate Change Conference in Paris on the 12th of December 2015 agreed to reduce greenhouse gas emissions and this is known as the Paris Agreement (un.org, 2022). South Africa signed the Paris Agreement which is a legally binding international treaty to combat climate change and the goal of the Paris Agreement is to limit global warming to below 2 degrees Celsius compared to pre- industrial levels (unfccc, 2022). To achieve the goals of the Paris Agreement, a transformation is needed in all types of human activities (Farfan et al., 2019), including the energy, transportation, agriculture sectors and households (Markewitz, Zhao, Ryssel, Moumin, Wang, Sattler, Robinius, & Stolten, 2019). When it comes to the production of cement, half of greenhouse gas emissions emerge from limestone which means that 50% of the carbon emitting processes cannot be avoided. The European Cement Association has set its targets to reduce specific greenhouse gasses by 30% by 2030 from 1990 levels (IFC, 2020). The ambition of the cement industry is to achieve zero emissions across the cement and concrete value chain by 2050 (cembureau, 2020). It is estimated that 4.1 billion metric tons of cement are produced annually accounting for 8 – 10% of global atmospheric carbon dioxide emissions (Poudyal & Adhikari, 2021). The production process of cement has several negative effects on the environment and human health (fortunebusinessinsights, 2021). Figure 2.1 illustrates the evolution of greenhouse gas emissions from 1750 to 2020 (Ritchie & Roser, 2022).

Figure 2. 1 Evolution of CO2 emissions



Source: Ritchie and Roser (2022)

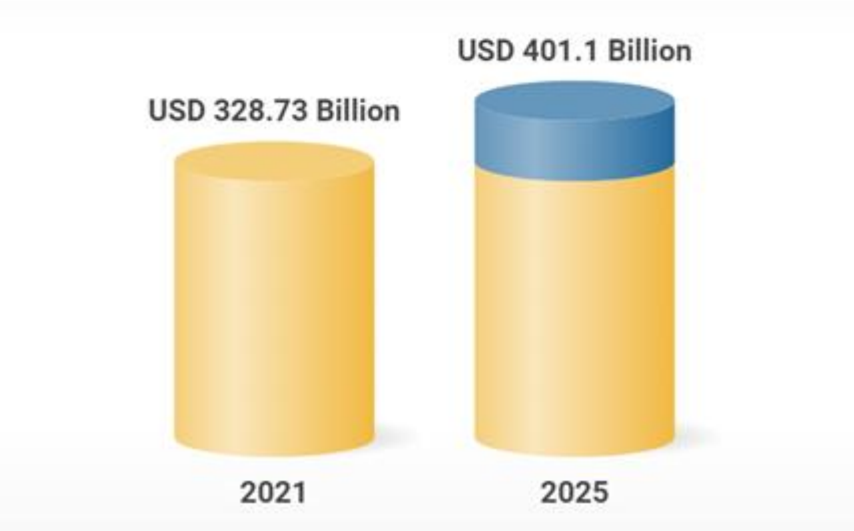
Based on Figure 2.1, it is evident to reduce CO2 emissions to below or to the 1990's levels, the various industries still have a long way to go. However, the cement and concrete industry have identified approaches to produce more sustainable cement by exploring different techniques, such as carbon capture and storage (CCS), material substitution, alternative fuels, and energy efficient technologies (Poudyal & Adhikari, 2021).

2.2.1 The Global Cement Industry

Globally, there are more than 1000 cement producers operating with 2300 integrated cement plants and over 600 grinding stations (IFC, 2020). Furthermore, five countries account for nearly three quarters of the world's cement production with China leading at 57%, followed by India, Vietnam, the United States, and Indonesia. Although the top 10 players account for 45% of global capacity, the industry is generally fragmented (IFC, 2020). The top producers include Holcim which is the world's largest cement company with a presence in 90 countries and 180 plants with an annual production capacity of 386 million tonnes (Mutegi, 2022). This is then followed by Anhui Conch, which is the largest cement manufacturer and distributor in mainland China, followed by China National Building Materials (CNBM) (Mutegi, 2022). The global cement industry has increased capacity by 73% from 2005 to 2013. Furthermore, between 2011 and 2013, China produced and consumed more cement than the United States of America in the past 100 years, which adds up to around 3.8 Gigatons of cement production and 3.2 Gigatons of CO_2 emissions in 2012 (Farfan et al., 2019).

The construction industry provides more than 100 million jobs worldwide, accounting for 6% of global GDP (MarketNews, 2021). The added value of the construction industry accounts for about 5% of GDP in developed countries, and 8% of GDP in developing economies (MarketNews, 2021). It is expected that there will be a large amount of infrastructure demand in the next two decades and by 2040, global infrastructure investment is estimated to be 3.7 trillion US dollars per year. It should be considered that the Americas and Africa have the largest infrastructure investment gap in comparison to other regions (MarketNews, 2021). As illustrated in figure 2.2, in the short to medium term, the global cement industry is expected to grow at a compound annual growth rate of 5% by 2025 from 2021 levels (researchandmarkets, 2021).

Figure 2. 2: Global Cement Industry growth forecast



Source: researchandmarkets (2021)

Although the global economy remains unpredictable, global infrastructure construction is forecast to grow by an annual average of 5.1% (Brown, 2021). The world GDP is expected to grow by 1.7% in 2023, further, the growth rate of the Eurozone and United States of America (USA) is expected to be 0% and a mild recession is forecast for those regions (Fitchratings, 2022). According to the IMF's latest World Economic Outlook Report (January 2022), the global economy is expected to be in a significantly weaker position (IndustryInsight, 2022). This is due to supply disruptions along with higher energy prices (linked to geo-political tensions in Russia), which is resulting in higher inflation and a weaker than expected economic performance globally (IndustryInsight, 2022). The downward revisions by the IMF are largely due to revisions in the expected performance of the world's two biggest economies, the United States and China (IndustryInsight, 2022).

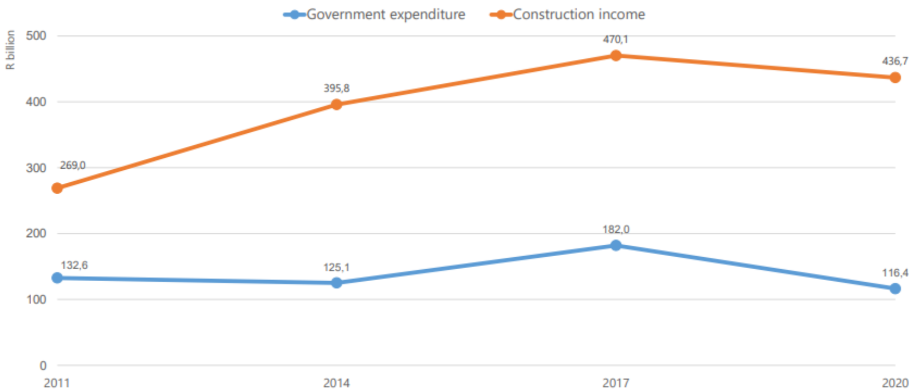
The cement industry is undergoing a transformation which is mainly driven by the need to generate sustainable production and opening the road to technological adoption and digitisation (Rodríguez, 2021). Companies and governments worldwide are pledging to achieve net zero emissions of greenhouse gases by 2050 (McKinsey, 2022). One of the methods being employed by the cement industry globally is the collection and recycling of concrete waste for reuse in building materials and the adoption of other building materials (McKinsey, 2022). Reducing emissions from the production of cement is not a straightforward process as it is dependent on various factors; when considering the environmental impact from the production of cement, 50% of the greenhouse gases emitted are from the manufacturing process, 40% comes from the fuel derived, electricity accounts for 5% and transportation is 5% (Farfan et al., 2019). Greenhouse gas emissions depends on various factors, which includes the technology used, the geographic location, fuel type used and emissions control system. When it comes to the operations and efficiency of cement plants, carbon capture storage (CSS) is a method that has been written about in various articles and it aims to reduce the anthropogenic emissions of carbon dioxide into the atmosphere and reduce the related social costs (Malov, 2021). CCS is however, dependent on geological and geographic factors, and it would double the capital and operational costs of a cement plant (Farfan et al., 2019). The global potential analysis of carbon capture and utilisation (CCU), which is the production of renewable electricity in cement plants was explored by Farfan et al. (2019), is CO2 synthetic hydrocarbon production and has the potential to produce significant amounts of liquid hydrocarbons or synthetic natural gas, or a mix of both at the expected global cement peak production in 2040 (Farfan et al., 2019).

Acquisitions by international cement manufacturers have increased in importance in emerging nations over the past 20 years and have evolved into a key tactic for global expansion (Savović et al., 2021). Furthermore, in a study conducted by Savović et al. (2021) which explored the effect of international acquisitions on the efficiency and productivity of cement industries in developing nations, the research indicated that international acquisitions improve the cement industry's productivity. The authors also found that following the acquisitions, the overall technical and labour efficiencies improved.

2.2.2 The South African Cement Industry

In South Africa, the consumption of cement will remain subdued without significant infrastructure development (Globalcement, 2022). In July 2020, more than two years ago, the Minister of Public Works, Patricia De Lille, unveiled 62 mega construction projects that were going to be ‘fast tracked’, that are ‘shovel ready’ and ‘bankable’ (IndustryInsight, 2022). These projects have a combined value of R360 billion, which is more than the entire size of the South African construction industry in an average year. However, the roll-out of these projects has been very slow with no evidence to show any meaningful uptick in construction activity over the last 12 – 18 months (IndustryInsight, 2022). The 2020 Construction Industry report published by Stats SA revealed that changes in government infrastructure spend mirror the changes in income of the construction industry. As illustrated in Figure 2.3, overall government spend on infrastructure projects under the period in review which was from 2011 to 2020 shows that government spend on infrastructure development has increased by R167 billion from 2011 to 2020. However, government spending on infrastructure projects has decreased steadily from R182 billion in 2017 to R116 billion in 2020 and the income of the construction industry decreased from R470 billion in 2017 to R436 billion in 2020.

Figure 2. 3: Government infrastructure spend and construction industry income.

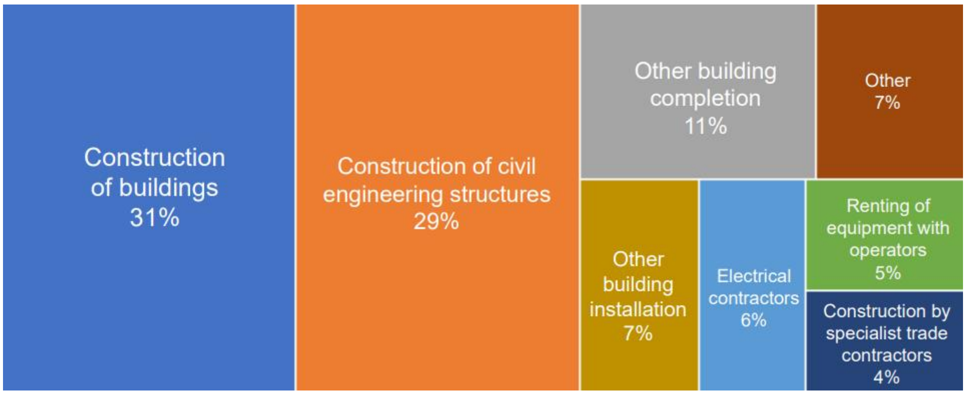


Source: StatsSA (2022a)

When a nation is developing infrastructure like airports, metropolitan areas, and harbours, this means that more cement is needed (Farfan et al., 2019). Once all this development has been completed, the demand for cement decreases significantly and the focus shifts towards maintenance and replacement (Farfan et al., 2019). The 2010 FIFA World Cup that was held in South Africa is an example of this and led to the construction of new stadia, airport upgrades, the Gautrain development, the SANRAL freeway Improvement Plan and ancillary projects (Specifile, 2022). The South African government invested more than R30 billion in preparation to host the world (MG, 2015). Post the 2010 FIFA World Cup, the demand for cement shrank in South Africa (Nteta & Mushonga, 2021). The same view is also held by the regulatory body of the

Cement Industry which is the Cement and Concrete Institute of South and the institute stated that once the 2010 FIFA World Cup was over, major infrastructural development programmes ended abruptly which caused a slump in the construction and civil sectors (Specifile, 2022). Fast forward to 2022 and the picture has not changed much. JSE listed manufacturer, PPC, released an operating update for the five months leading to August 2022, the update outlined that PPC's share price dropped by 4.2% and sales in South Africa and Botswana fell by 1%. One of the reasons for the drop in share price is the insignificant increase in infrastructure development (Larkin, 2022). Another example is Sephaku Cement, which reported that volumes were 10% below in 2022 compared to 2021 levels in the Gauteng province and the manufacturer attributed this to aggressive pricing from competitors as the demand for cement in the province declined (West, 2022b). Figure 2.4 demonstrates that the largest source of income in 2020 for the construction industry came from the construction of buildings (StatsSA, 2022a). This shows that without large infrastructure projects, the growth of the industry and related industries, such as the cement industry will remain subdued.

Figure 2. 4: Sources of income for the construction industry in 2020



Source: StatsSA (2022a)

The South Africa cement industry consists of seven major cement producers with 20 cement factories between them (cemnet, 2022a). Table 2.1 outlines the manufacturers, the number of cement plants and production capacity.

Table 2. 1: Cement Manufacturers in South Africa

Manufacturer	Number of cement plants	Production capacity per annum	Established
Sephaku Cement	2	2.6 million tons	2013
AfriSam	4	4.5 million tons	1934
Lafarge	2	2.5 million tons	1914
Cemza	1	800 000 tons	2018
PPC	7	11.5 million tons	1892
Mamba	1	1.2 million tons	2016
NPC (Natal Portland Cement)	3	900 000 tons	1964

Source: Cemnet (2022a).

There are various types of cement used in the construction industry. The material composition and properties vary between each type of cement depending on its intended use (Lafarge, 2022). During manufacture, additives are introduced to alter things like strength, curing time, colour, and chemical resistance (Lafarge, 2022). The price of cement varies from R65 to above R100 for a 50kg bag, depending on the brand and store purchased from. Figure 2.5 outlines the average retail prices of cement in South Africa.

Figure 2. 5: Average cement prices in South Africa

Source: Cashbuild (2022)

While many stores saw a drop in sales in 2020, others who specialise in hardware, paint, and glass saw an increase between August and October 2020, these retailers reported an 11% rise in sales when compared to the same period in 2019 (Smit, 2021).

However, the home improvement trend has started to slow down as people divert their spending to things they have given up, such as travel, during the lockdown (Smit, 2021). According to data from Statistics South Africa, the wholesale trade sales segment for construction and building supplies decreased by 7.9% in current terms from December 2021. Cashbuild, which is the largest retailer of building materials in South Africa, reported that their revenue dropped by 10% and their share price dropped by 2% in the first quarter of 2022 (Mashego, 2022a). Cashbuild's results show that fewer consumers are focusing on home improvements as more employees are returning to the office, following the easing of lockdown restrictions. Within the informal and rural segments, PPC reported experiencing growth in those segments and informal brick making is one the businesses thriving in that segment. According to {whoownswhom, 2023 #289@@author-year}. The production of bricks generates many jobs and business opportunities for small-scale brickmakers in the area. The majority of them aren't documented in the official business operations records. There are numerous smaller brickmakers who are quite active in the small business sector and are visible when one is travelling through rural areas and townships, and this is known as the township economy. However, due to the high costs involved, these informal brick-making enterprises typically cannot comply with the Environmental Impact Assessments (EIAs) requirement and lack the necessary licences {whoownswhom, 2023 #289}. Nonetheless, they have the ability to actively contribute to the construction of affordable housing and are one of the forces behind local economic activity.

In South Africa, cement plants are generally located close to limestone quarries, for example Sephaku Cement extracts limestone from the mine adjacent to the Aganang plant and then processes it to clinker using the latest technologies in manufacturing. The clinker is ground and blended with other inputs to produce consistently high-quality bagged and bulk cement in different strengths (Sephaku, 2022a). Cement produced in South Africa in 2018 amounted to 14 million tons and this has declined to 11 million in 2020 (zkg & cement, 2022). This demonstrates that the industry is operating below capacity, considering that the estimated cement production capacity in South Africa is 20 million (Phillip, 2019). The local cement industry is battling against cheap imports as it is estimated that cement imports account for 10% of local cement sales (Mashego, 2022b). Cement imports into South Africa surged to their highest level in 2021 as they reached 161,555 tons in November despite the government's drive to use domestically produced products and banning imported cement from public sector construction projects (cement.com, 2022). The cement imports mainly come from Vietnam, followed by Pakistan (Cement, 2022). There are import tariffs which have been imposed on cement from Pakistan, however not on imports from Vietnam (Mashego, 2022b). According to Duc et al. (2022), the development and fierce competition in the Vietnamese cement industry means that the supply of cement in Vietnam far outweighs the demand for cement in that country and this could be one of the reasons attributed to the cement imports into South Africa. The cement imports are having a severe negative impact on the competitiveness of the local cement industry, in addition, independent studies have revealed that the imported cement is of inferior quality (engineeringnews, 2020). Local cement producers have been lobbying for localisation (Cohen, 2021). The local cement industry has tried various initiatives to curb imports which include anti-dumping tariffs, general import tariffs on cement products and an application to the Department of Trade and Industry for the designation of any specific product in the local market. Designation entails that on government related infrastructure projects, locally produced cement must be used (Mackay, 2022).

The major cement producers in South Africa, Lafarge, AfriSam, PPC and NPC – Cimpor operate a cartel (CompetitionComission, 2014). The biggest cement producers participate in the cartel by assigning market shares and territory and establishing prices (CompetitionCommission, 2014). The members of the cartel have reached agreements on market share, pricing parameters for different types of cement, and the scaling back of marketing and distribution activities, including the closure of certain depots in certain regions and the prohibition of discounts on higher quality cement (CompetitionCommission, 2014). An investigation was launched by the Competition Commission in 2008. One year later, PPC admitted to being part of the cartel after the cartel member offices were raided by the Competition Commission. PPC received corporate leniency and helped the commission to prosecute the remaining members. In 2011, AfriSam settled with the commission and paid a fine of almost R125 million, in 2012, Lafarge also settled with the commission, paying a fine of R149 million (Gedye, 2019). The Competition Commission estimates that consumers saved R4.5 to R5.8 billion during the period of 2010 – 2013 because of the Commission's intervention. However, had the Commission's interventions been successful prior to 2009, the Competition Commission estimates that consumers would have saved R15 - R19 billion between the period of 2000 to 2013. To reach these estimated savings, the Competition Commission modelled cement prices during and after the cartel using a multivariate econometric model that considered relevant control variables.

Environmental sustainability is a major focus area for the South African cement industry. Green Supply Chain Management (GSCM) is the integration of environmentally sound practices into supply chain management from the procurement of input services to how the products are distributed to the end users (Nteta & Mushonga, 2021). In a study that was conducted by Nteta and Mushonga (2021) which investigated the drivers and barriers of Green Supply Chain Management (GSCM) in the South African cement industry, it was discovered that the main drivers for the adoption of GSCM practices in the South African cement industry are financial incentives from the government, this includes a reduction on the carbon tax paid by manufacturers. The South African Carbon Tax came into effect in 2019 and the purpose of the Carbon Tax is to lower greenhouse gas emissions and is designed to encourage consumers to make more environmentally friendly choices (AfriSam, 2022). South Africa is party to the Paris agreement on climate change and in terms of this agreement, South Africa has committed to reducing greenhouse gas emissions by up to 42% by 2025 (AfriSam, 2022). The current Carbon Tax rate has increased from R134 per tonne of carbon dioxide emitted to R144 per tonne of carbon dioxide emitted in the 2022 calendar year (KPMG, 2022). According to whoownswhom (2022), the tax costs PPC alone R90 million per annum. Considering estimated local cement sales, industry experts estimate that the tax will cost the industry R600 – 900 million per annum, which is significant, considering that cement manufacturers are operating at reduced margins (Mackay, 2019). The second driver of GSCM that the study outlined, is improved competitiveness for cement manufacturers, which is gained through a competitive advantage through being a cost leader that considers reduced spending on the Carbon Tax by the manufacturers. The study also found that a supportive organisational culture for the implementation of GSCM is a significant driver (Nteta & Mushonga, 2021). Amongst the barriers for the implementation of GSCM by cement manufacturers include the financial constraints of the organisation, and limited knowledge on the implementation of GSCM practices by the company management. The study found that suppliers, customers, and society do not have a significant influence on the adoption of green supply chain management by cement manufacturers, which means that customers and suppliers are not exerting enough pressure on manufacturers for the adoption of GSCM.

South Africa has seen a movement towards the design and construction of certified green buildings and a reduction of the negative environmental impact of buildings during the construction and operation (Werner & Koti, 2022). Furthermore, there has also been the introduction of organisations such as the Green Building Council of South Africa (GBCSA) which is a non-profit entity that was formed in 2007 to promote environmental sustainability in the design and operation of buildings in South Africa (wecanchange, 2022). The GBCSA has developed rating tools called Green Star Certification to create a standardised measurement for green buildings, however this is not prescribed by law and the certification is best practice (Werner & Koti, 2022). The advantage of Green Star Certification is that it allows a building or a project to gain market recognition as a leader in the green building industry, cost saving from and during operational phase of the building, and tax deductions for kilowatts per hour saved (Werner & Koti, 2022). The benefits of a Green Star rating reflect the drivers of Green Supply Management that was outlined by Nteta and Mushonga (2021) which include financial incentives.

The South African cement industry is continuously improving its manufacturing processes to mitigate its impact on the environment and to reduce its CO2 footprint. The industry is achieving this through blended cement, which involves the mixing or adding of one or more additives, such as fly ash and silica fume, to clinker in various proportions at the grinding stage of cement production (Saleh & Eskander, 2020). The advantage of introducing additives to the cement manufacturing process is that it reduces the energy required as well as the emission of (GHG) in clinker production (Farfan et al., 2019).

South African cement manufacturers are showing signs of aging production facilities, for example, the kilns at PPC and Lafarge are showing an average of 32 years. This has a negative impact on efficiency and contributes to rising maintenance costs. Furthermore, older kilns need to be retired and others modernised in the industry to maintain capacity (Bloomberg, 2016). However, the picture is changing, for instance, AfriSam reduced their carbon emissions by 35% for a ton of cement produced from 1990 to 2018 (Mackay, 2019). The manufacturer achieved this through the development of their kilns (Mackay, 2019)   In 2011, the cement prices in Africa were the highest of any continent, however by the year 2017 the prices had fallen by 35% from 2011 levels which represented the greatest decline of any continent. The decline in price can be attributed to the increase in the number of organisations producing cement which resulted in the lowering of mark ups by the incumbent firms (Leone et al., 2021). The other factor was a reduction in marginal cost of production caused by the introduction of new technology by new entrants (Leone et al., 2021). According to cemnet (2022b), the South African government has asked local cement producers to commit to no price increases, in return, the government will safeguard against cheap imports, however cement producers have argued that the cost of doing business in South Africa is much higher than in other countries.

The level five lockdown that was introduced by government on 26th of March 2020 saw many sectors transition to the work from home system as on-site business activities had come to a halt. This transition was seamless for some organisations but difficult for the construction industry which requires a significant level of human physical input in delivering projects (Aigbavboa, Aghimien, Thwala, & Ngozwana, 2021). This led to a slowdown in the demand of cement, and in order to survive, the industry had to focus on strengthened sustainability and competitiveness (IFC, 2020). There are signs that the local construction and engineering sectors are recovering from the economic downturn and the impact of the pandemic, as well as benefiting from higher investment in infrastructure (PropertyWheel_G, 2021). However, as advanced economies begin to raise interest rates and withdraw monetary support, emerging market economies, such as South Africa, face increased risks to their economic outlook and financial stability. This will put increased pressure on emerging market economies, particularly those with high levels of public debt, as is the case in South Africa (Industry insight, 2022). Global and local economic pressure will continue to affect the construction industry in 2022 and beyond, furthermore it is predicted that the industry's output will not return to pre-pandemic levels before 2022 (khplant, 2022)

The impact of Covid 19 on the local construction industry was explored by Aigbavboa et al. (2021) and the industry's response to the pandemic. The study included small construction companies all the way to large international construction firms. The study explored the short, medium, and long-term implications. In terms of the short-term impacts of the pandemic, most respondents reported experiencing a disruption in their supply for materials for their current projects. Furthermore, most respondents believed that the pandemic would have severe negative consequences on their businesses, especially from a revenue perspective. The likelihood of job losses was also explored as many companies would not be able to recover from the loss of projects or not being able to get new ones. In the medium term, the effects of the pandemic would lead to the bankruptcy of contractors as there would be the likely occurrence of an economic downturn which would affect the ability of many organisations to generate revenue, leading to a decline in their profits. The long-term consequences of the pandemic will lead to a massive loss of jobs for construction workers. Also, the bankruptcy of large construction firms, business and labour disruptions and interruptions in the delivery of critical infrastructure projects would occur. The Covid 19 pandemic did bring about a decline in infrastructure spending and many large construction companies did go into business rescue (Liedtke, 2021).

2.2.3 Related Studies in the Cement Industry

The most recent study that has been conducted to ascertain the factors that influence brand preference within the cement industry was conducted by Bonney et al. (2022) which investigated factors that influence the selection of cement used for concrete production in Ghana. The study included private homeowners and construction and estate companies, and its findings revealed that brand name and technical aspects, such as durability, packaging, product availability, as well as the recommendation of friends and family influences the selection of a particular cement brand.

In the Nepal Cement industry, Kumar Mishra (2019) investigated the factors that influence decision making in the selection of cement brands. The study was conducted amongst different consumer groups that included homeowners, suppliers, contractors/masons, and consultants/engineers. The author explored quality, price, influence by others, advertising, packaging, and convenience as factors that influence the selection of cement brands. Some of the findings revealed that the age or number of years in business of the cement producer was an important factor for consumers whilst advertising was the main determinant in influencing consumers' cement preferences.

A similar study was conducted in Nepal by Jha and Dahal (2020). The purpose of the study was to understand the factors that construction companies consider when choosing a cement brand. The authors looked at various factors, including quality and price, and found that quality was an important factor in influencing brand selection.

In India, Maity (2017) conducted a study which explored the branding strategies adopted by leading cement manufacturers to differentiate themselves and thus, to increase sales. The author outlined some of the strategies the Indian manufacturers were using to become more competitive which included consolidating value, product differentiation and a focus on sustainability.

A similar study was conducted in India by Singh (2020) and investigated the triggers and barriers in selecting a cement brand. The factors that were explored by the author included quality, price, recommendation of others, advertising, and brand image. The results of the study revealed that all the factors positively influenced the selection of a cement brand, however advertising was a significant factor, followed by price. According to the results of the research, discounts were the most important factor, followed by the brand's emphasis on innovation and the emotional attachment to the specific brand. In terms of barriers to selecting cement, the results revealed that not having discounts was the biggest hindrance to selecting a cement brand, followed by the brand, and thirdly, the harm to the environment caused by the brand.

In Indonesia, Haeruddin (2021) investigated the influence of brand equity on consumer purchase decisions. A study was also conducted by Duc et al. (2022) which investigated the role of brand awareness and brand recognition on local cement producers in Vietnam.

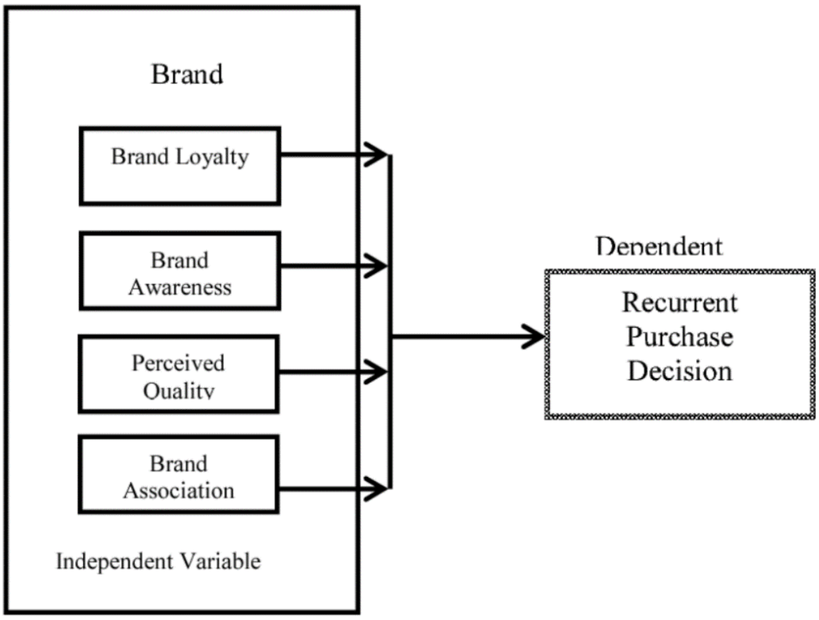
2.3 Theoretical Grounding of the Study

This section focuses on the theoretical underpinnings of the study which are the Theory of Brand Equity and the Theory of Planned Behaviour (TPB).

2.3.1 Theory of Brand Equity

This study uses Aaker's definition of Brand Equity, which is defined as assets and liabilities linked to a brand, which includes its name and symbol that add to or subtract from the value provided by a product or service to a firm and/or to that firm's customers (Aaker, 2009). The factors that contribute to Brand Equity are brand awareness, brand associations, customer loyalty, and perceived quality (Aaker, 2009). The development of Brand Equity can create associations that can drive market positions which persist over long time periods and is possible when resisting aggressive competitors. Building Brand Equity is a lengthy process which requires vision and continuous investment (Aaker, 2009). There are five approaches to evaluate Brand Equity that have been outlined by Aaker (2009). The first approach is through price premia that can be supported by name. Secondly, Brand Equity is measured by the impact of the name on customer preference. The replacement value of the brand is the third way Brand Equity can be evaluated. The fourth approach is based on the stock price and the last approach looks at the brand's capacity for financial gain. Brand Equity continues to be an important topic in marketing and one of the reasons for this is that marketing professionals need to create sustainable competitive advantages which are not based on price competition. According to Aaker (2009), there is an increased emphasis on price by marketing professionals, which involves price promotions, and this results in the decline of industries into commodity-like sectors. To avoid this, resources should be directed into brand-building initiatives and the establishment of points of differentiation (Aaker, 2009). There are various signs that were outlined by Aaker (2009) which indicate that the brand building process is declining which are the falling levels of loyalty, and that price is increasing in importance. Another sign of the erosion of the brand building process mentioned by Aaker (2009), is that managers struggle to accurately determine brand associations and the strength of those associations (Aaker, 2009). Further, individuals who are responsible for managing the brand might be evaluated on short term measures whereas brand building is long a term process which requires patience as outlined by Aaker (2009). Figure 2.6 outlines Aaker's Brand Equity Model.

Figure 2. 6: Aaker's Model of Brand Equity



Source: Aaker (2009)

2.3.1.1 Brand loyalty

An indicator of a customer's attachment to a brand is brand loyalty (Aaker, 2009), Brand loyalty depicts the likelihood that a customer may switch to a different brand, particularly when that brand changes its pricing or product attributes (Aaker, 2009). When brand loyalty increases, the chances of losing customers to competitors are reduced (Aaker, 2009). An important consideration for brand loyalty is an old marketing law called “Double Jeopardy”, and according to the law, brands with a small market share have fewer consumers who show less loyalty to the brand (Tellis, 2018). However, the opposite is also true for this law because heavy buyers of a brand show greater loyalty to the brand (Tellis, 2018).

Scholars often use brand preference and brand loyalty interchangeably, however, there are nuances between the two. Brand loyalty is a behaviour which considers an individual’s intention to repurchase (Kataria & Saini, 2019), whereas brand preference looks at an individual’s perception towards a brand and the level at which they desire to purchase it (Puriwat & Tripopsakul, 2021). According to Tellis (2018), brand loyalty is a strong predictor of brand choice, even in the presence of promotions. Furthermore, brand loyalty exists in two forms which is strong and weak loyalty (Tellis, 2018). Strong loyalty occurs when individuals purchase the same brand repeatedly, regardless of whether the brand or competitor brands are on promotion (Tellis, 2018). Weak loyalty occurs when individuals purchase the same repeatedly, if and only when, it is on promotion. Furthermore, weak loyalty represents opportunistic preference as individuals need the added incentive to purchase the brand (Tellis, 2018). In a study conducted by Haeruddin (2021), the author investigated the influence of brand equity on consumer purchase intentions within the cement industry in Indonesia. The author explored brand awareness and brand loyalty and how they influence purchase decisions. The study found that brand awareness and brand loyalty positively influence purchase decisions.

2.3.1.2 Brand awareness

Brand awareness is a process that involves taking someone from not knowing a brand exists to a level where the individual believes that the brand offers the only product in that class (Aaker, 2009). There are three levels to brand awareness, which are brand recognition, brand recall and top of mind (Aaker, 2009). Brand recognition investigates if a consumer can establish a link between a particular brand and its product class, for example, in a survey respondents would be presented with a list of cement brand names and would be asked to identify the brand names they have heard off before (Aaker, 2009). Furthermore, although there needs to be a link between the brand and product class, the link does not need to be strong, there just needs to be a link. The next level is brand recall, and this involves asking a consumer to name a brand in a product class, however, in this instance, the individual is not provided with the names of the different brands in the product class and brand recall is also termed as unaided recall (Aaker, 2009). This would involve asking an individual to recall the cement brands that they know without providing the names of brands in that category. Brand recall is a much more difficult task than brand recognition and it is associated with a stronger brand position (Aaker, 2009). An individual can recall many more brands on an aided recall as opposed to an unaided recall. The third level of brand awareness is top of mind, and this is the first brand the individual recalls in a particular product category (Aaker, 2009). There are four ways in which brand awareness creates value that were outlined by Aaker (2009). The first way this value is created is through providing an anchor to which other associations can be created (Aaker, 2009). Furthermore, Aaker (2009) highlights that it is a wasteful exercise to communicate brand attributes until the name is established with which to associate the attributes and brand recognition is the first step in communication. The second value provided by brand awareness is familiarity and people like familiarity, particularly when it comes to low involvement products, such as chewing gum or soap (Aaker, 2009). In situations where there is no motivation to engage in attribute evaluation, familiarity may be enough (Aaker, 2009). The third value is the substance to the brand created by name awareness and the rationale behind this is that if a brand is known, individuals may perceive the brand as being successful and that others use it or the company is widely distributed (Aaker, 2009). The fourth value of brand awareness is that it allows a brand to be considered, for example, when you are building a house, cement is a requirement and in that situation, the consumer would recall a set of cement brands and select from the set of recalled brands, however if the consumer is not aware that a particular brand exists then that brand does not have the opportunity to form part of the considered brands. There are studies that have found a relationship between top of mind recall and purchase intentions (Aaker, 2009). Although brand awareness is a key brand asset, it does have a limitation which is that brand awareness by itself cannot create sales, especially for a new product (Aaker, 2009).

2.3.1.3 Perceived quality

Perceived quality is an intangible overall feeling about a brand, and it can be found on underlying factors, such as the reliability and performance of the products with which the brand is associated (Aaker, 2009). Furthermore, Aaker (2009) states that it is difficult to measure perceived quality because perceived quality is subjective and involves assessments of what matters to customers, it is not always possible to measure it objectively. Perceived quality offers an important reason to buy as it influences which brands are included or excluded from consideration and the brand which will be selected (Aaker, 2009). Furthermore, perceived quality is linked to purchase intention, so if the perceived quality is high that improves the effectiveness of marketing communications. However, if there are quality issues, then it becomes difficult to overcome that with marketing communications and advertising may become less effective. The advantage of perceived quality is that it allows the firm to charge premium prices which result in greater profits that can be reinvested into brand building activities or research and development (R&D). There are other advantages of perceived quality that were outlined by Aaker (2009); one of them is that it offers a benefit to channel members and distributors as the image of channel members is impacted by the products and services in their line and stocking quality products can matter (Aaker, 2009). For instance, major retail hardware groups in South Africa, such as Cashbuild or Builders Warehouse, prefer to stock cement brands from the major South African manufacturers, such as PPC and AfriSam, and not alternative blended cement brands, although that is beginning to change as there is a trend to the stocking of blended cement brands by the major hardware retailers. Independent retail hardware stores generally stock blended cement brands in addition to the major brands. Price is also a signal of quality, however that differs across product categories. For example, price is a signal of quality when it comes to wine or durable goods (Aaker, 2009).

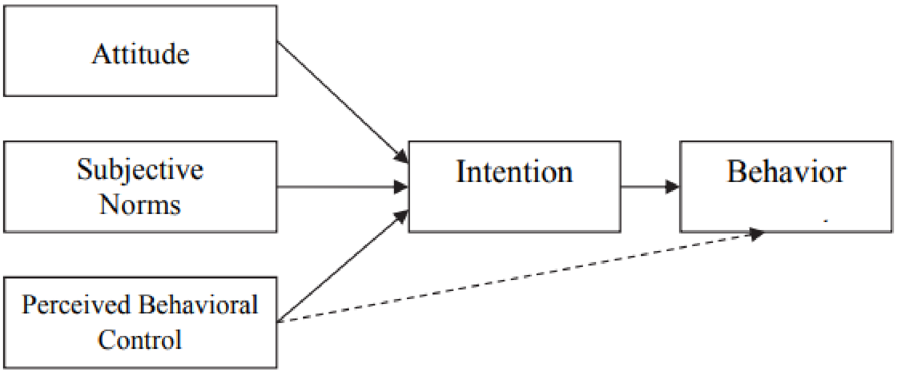
2.3.1.4 Brand associations

A brand association is anything linked in memory to a brand (Aaker, 2009). The association does not only exist but has a level of strength. A link to a brand will be stronger when it is based on many experiences or exposures to communications, rather than only a few (Aaker, 2009). Aaker (2009) views a brand as a series of associations that have been arranged in a meaningful way. There are five advantages of brand associations that have been outlined by Aaker (2009). The first one is that brand associations help customers to process and retrieve information by summarising a set of facts and specifications that would be difficult for the customer to process and access and expensive for the firm to communicate and this could be symbolic. Further, associations can influence the recall of information, especially during decision making (Aaker, 2009). The second value of brand associations is that they provide a basis for differentiation, in some product classes, brands are not easy distinguish, for example, clothes or perfumes, and the associations of the brand name plays a vital role in separating one brand from another (Aaker, 2009). The third value of brand associations is that they include attributes or customer benefits that provide consumers with a reason to buy and use the brand (Aaker, 2009). The fourth advantage of brand associations is that they create positive attitudes and feelings, and these are characteristics of the brand which stimulate positive feelings and make the brand likable (Aaker, 2009). The fifth value of brand associations is that they provide a basis for extensions through creating a fit between the brand name and a new product or by providing a reason to buy the extension (Aaker, 2009).

2.3.2 The Theory of Planned Behaviour

The Theory of Planned Behaviour (TPB) has become one the most influential and cited models for the prediction of human social behaviour (Ajzen, 2011). The Theory of Reasoned Action, which was developed by Fishbein and Ajzen (1975), paved the way for the Theory of Planned Behaviour which has focused on predicting human behaviours in a variety of contexts, for example, by arguing that individual intentions influence individual behaviour, which results from attitudes and subjective norms. Purchasing intentions are based on circumstances and subjective contexts (Ahmed et al., 2020). The key variables that determine behavioural intentions in the Theory of Planned Behaviour (TPB) are intention, attitude, subjective norms, and perceived behavioural control (Yang, Wang, Deng, & Huang, 2021). As a general guide, the more positive the attitude, subjective norm, and perceived behavioural control, the greater the likelihood of adopting the behaviour in question. One of the most frequent biases facing TPB are affect and emotions, the concern arises from the misconception that the theory posits a rational person who is unaffected by emotions. However, TPB does account for affect and emotions which are made apparent by serving as background factors that impact behavioural, normative/ control beliefs (Ajzen, 2011). Figure 2.7 provides a diagrammatic view of the TPB.

Figure 2. 7: Theory of planned behaviour



Source: Ajzen (1991)

There is an issue that has been referred to as the sufficiency assumption on TPB, the basis of it is that TPB should be able to anticipate behaviour performance, based on intentions and perceived behavioural control, thus intention in turn, should be predictable from the attitude towards the behaviour, subjective norms, and perceived behavioural control (Ajzen, 2011). In recent years, research has focused on enhancing the TPB model's explanatory power, including the exploration of additional moderators and independent variables, as well as the addition of implementation intention as a mediator to bridge the intention–behaviour gap (Yang et al., 2021). However, it is important to remember that TPB evolved from TRA to include additional predictors which are perceived behavioural control and descriptive norms to the theory (Ajzen, 2011). The Theory of Planned Behaviour was designed by its original authors to be able to incorporate additional predictors and additional predictors have been proposed, for example, including the past behaviour and related habit construct (Ajzen, 2011). Although the theory might evolve to include new variables, there are five essential rules that should remain in the theory, the first of which is that the new variable, like existing predictors, should be behaviour specific, adhering to the compatibility principle. Second, the proposed variable should be able to be viewed as a causal factor in determining intention and action. Third, the suggested addition should be conceptually separate from the existing predictors in the theory. Fourth, the factor under consideration should be theoretically applicable to a wide range of behaviours examined by social scientists, and last, if it is to be included in the theory, the proposed variable should consistently improve prediction of intentions or behaviour (Ahmad, Kim, Anwer, & Zhuang, 2020).

2.3.2.1 Attitude

Behavioural intention is said to be influenced by one's attitude, an individual's positive or negative propensity for a certain behaviour in each context is shown by their attitude, which is an affective or emotional response to doing that behaviour (Raut, Kumar, & Das, 2020). In the study conducted by Wang, Xie, Liu, Shen, Wei, and Liu (2021) which employed the extended theory of planned behaviour to explore the factors influencing the travel intentions of Chinese residents in outbound travel post the Covid 19 pandemic, the results revealed that when compared to subjective norms and perceived behaviour control, the study indicated that attitude has the strongest explanatory power for travel intentions. The findings of the study conducted by Tashakor, Appuhami, and Munir 92019) found that attitude and planned behavioural control are powerful influences on farmers' when it comes to exploring the association between the belief-based factors and environmental management accounting practices.

2.3.2.2 Subjective Norms

Subjective norms consider the social pressure or expectations felt by an individual from significant reference groups to engage or not to engage in a particular behaviour. It is argued that people conform to subjective norms due to a fear of social exclusion (Daxini, Ryan, O'Donoghue, & Barnes, 2019). It is considered as an important factor in determining behavioural intention by several studies, for example, the study conducted by Ahmed, Li, Khan, Qalati, Naz and Rana (2021) found that subjective norms positively influence young consumers' purchase intention for organic food. Within investing, the findings of Raut et al. (2020) demonstrated that subjective norms, rather than the individual's attitude toward investing, have a larger influence in performing a specific action. In the study conducted by Rachbini (2018), the results also found that subjective norms played an important role in influencing purchase intention when it come to the purchase of Halal food.

2.3.2.3 Perceived Behavioural Control (PBC)

Perceived Behavioral Control refers to an individual's perception regarding the ease or difficulty in performing a particular behaviour (Hasan & Suciarto, 2020). Perceived behavioural control is likely to function as a moderator in the Theory of Planned Behaviour because people with higher perceived behavioural control are more confident in their ability to perform a behaviour and thus are more likely to translate behavioural intention into actual behaviour (Ajzen, 2020). PBC is the difference between the Theory of Planned Behaviour and the Theory of Reasoned Action. TRA assumed that an individual's performance of behaviour was within their control following their intentions. However people can face problems or be prevented from acting on intentions (Ajzen, 2020) In the study that was conducted by Liu, Yang, Clark and Shelly (2022), the author investigated the moderating role of PBC in recycling and found that through watching a video, the respondents intention to recycle increased, and the increase was most significant in individuals with a low perceived behavioural control to start recycling.

2.3.2.4 Intention

A determinant of behaviour in the Theory of Planned Behaviour is intention to perform the behaviour in question, the stronger the intention, the more likely the behaviour will follow (Ajzen, 2020). Although the intention to perform a particular behaviour might be present, there are also external factors to consider, such as the resources or skills required to perform the behaviour and these can prevent one from performing the behaviour (Ajzen, 2020). According to the Theory of Planned Behaviour, the more control an individual has over their behaviour, the more probable it is that their intention will be carried out (Ajzen, 2020). Purchase intention refers to what consumers expect they will buy in the future to meet their needs and wants (Naseri, 2021). However, although an individual might intend to purchase a certain brand of cement for a project, when you consider perceived behavioural control and subjective norms, the consumer might end up purchasing a different brand due to a lack of expertise and the recommendations of builders.

2.4 Empirical Literature

This section focuses on empirical literature which focuses on the constructs that are investigated in this research report.

2.4.1 Brand preference

Consumers' perception about brand attributes leads to preferences or attitudes which affects the consumers' intentions and brand choices. According to Anantharaman, Prashar and Tata (2023) Consumers prefer brands for a variety of reasons: sometimes for convenience or novelty, but also for the sake of making repeat purchases. Brand preference is defined as a brand selection that supports a consumer's buying decision, thereby persuading the consumer to purchase a specific brand (Setiowati & Liem, 2018). To illustrate the various ways in which brands can enhance preference, Kao (2019) investigated the moderating roles of cognitive load and brand story style in the impact of bank clients' affective orientation on brand preference of bank clients. The results of the study revealed that that bank clients' affective orientation and cognitive load can moderate their brand preference (Kao, 2019). Some scholars believe that trust is a precursor to brand preference (DAM, 2020). In the study that was conducted by DAM (2020) that investigated the influence of brand trust and perceived value on brand preference and purchase intention for branded phones, the study showed that there is a strong positive relationship between trust and brand preference, the results also revealed that perceived value also positively impacts brand preference. Furthermore, brand preference also has a positive influence on purchase intention (DAM, 2020). However, it is not as strong as the relationship between perceived value and purchase intention or the relationship between trust and brand preference (DAM, 2020).

2.4.2 Purchase intention

Purchase intention is a psychological variable which is considered as a consequence of high brand equity dimensions. Further, consumers are more inclined toward buying a brand that they are familiar with and high brand equity is an indicator of purchase intention (Chakraborty, 2019). The Intention to purchase refers to a consumer's desire to buy a specific product or service within a specific time frame. It is crucial to recognize consumer's purchase intention because consumer's action are usually predicted through their intention (Chakraborty, 2019). Furthermore, purchase intention also refers to what consumers expect they will buy in the future to meet their needs and wants (Naseri, 2021). In the study conducted by De Silva and Herath (2019), exploring intrinsic factors that influence purchase intention which are perceived value, perceived risk and perceived quality, the results of the study revealed that perceived value, perceived quality, and peer pressure do influence the purchase intention of customers. In the study that was conducted by Mainardes et al. (2019) on the influence of brand equity of commoditised products of well-known brands on consumer purchase intentions, the authors found that subjective norms have an impact on the desire to buy these items. Purchase intention is an outcome of various factors which will be explored further. For example Wang, Guo, Wu and Liu (2020) explored the impact product quality and online reviews on purchase intention.

2.4.3 WOM (Word-of Mouth)

Word-of-mouth refers to customers' readiness to participate in interpersonal representation based on their purchases (Hossain, Jahan, Islam, & Chowdhury, 2018). As one of the most powerful means of exchanging information offered by customers, word-of-mouth is a very useful source of competitive advantage for businesses (Hilal, 2019). Brand loyalty is a crucial component of brand equity and Aaker (2009) outlined five levels of customer loyalty. The first level represents customers who are indifferent towards the brand and there is no brand loyalty. At the highest level they are committed and the brand is very important to these customers either functionally or as an expression of who they are and their confidence is such that they will recommend the brand to others (Aaker, 2009). Therefore, it can be stated that where there is word-of-mouth, there is also brand loyalty. Word-of-mouth has a large influence on opinions and is received with less scepticism as opposed to sponsored media of communication by brands, like print and broadcast media (Rambocas, Kirpalani, & Simms, 2018). According to Aaker (2009), it is cheaper to retain existing customers than to attract new ones and some new customers may be influenced by existing customers. In a study conducted by Al-gharaibah (2020) that explored the role of word-of-mouth on the relationship between brand equity and brand loyalty, it was found that online word-of-mouth partially mediated the effect of brand equity on brand loyalty. The antecedents of word-of-mouth and customer repurchase intentions were explored by

Rambocas et al. (2018); the authors found that brand equity has a positive and significant impact on word-of-mouth.

2.4.4 Sales promotions

For manufacturers, trade promotions are critical in influencing consumer purchase decisions (Claro, Vieira, Agnihotri, & Serer, 2021). Furthermore, there two different forms of trade promotions which are value-related promotions which are investments in monetary promotions based on utilitarian gain (e.g. offering price discounts to remain competitive). The other form of trade promotion is experience-related trade-promotions which are investments in non-monetary promotions and shopping convenience based on hedonic value (e.g. investing trade dollars in securing shelf space in physical stores). It was outlined by Aaker (2009) that sales promotions have increased dramatically, both customer directed, such as coupons and rebates and trade directed, such as wholesale case discounts. Unlike brand building activities, sales promotion can be easily copied and replicated in efforts to retaliate by competitors (Aaker, 2009). However, managers remain under pressure to justify each dollar invested in trade promotions that can provide a better return (Claro et al., 2021). Sales promotions are effective as they affect sales in an immediate and measurable way (Aaker, 2009). A feature of promotions is that they provide a way to keep third or fourth ranking brands on the shelf. However, when an industry or firm becomes accustomed to promotions, it is a difficult thing to stop, this is because customers start to plan their purchases around the promotions cycle and the trade becomes used to it (Aaker, 2009). In the study that was conducted by Claro et al. (2021) investigated the main effect of value related and experience-related trade promotions on retailers' sales and the moderating role of different retail strategies and channel structures. The study found that temporary price reductions influence retail sales. Overall, the study found that value- related promotions have a more postive impact retail compared to experience- related promotions. The reason for this is value-related benefits include price, savings and financial gain for the consumers. Compared to shopping enjoyment and hedonic motivation, they provide value that is more tangible to consumers, increasing their buying intention and consequently, retailers' sales.

2.4.5 Brand image

Brand image is a “consumers' views of a brand as represented by brand associations kept in the consumer's mind." These associations can take many forms, and they might represent product features or aspects that are unrelated to the product (Keller, 2013:72). Consumers are more likely to return to service providers who have a strong brand image, hence a company's capacity to build an appropriate brand image corresponds with increased revisit intentions (Khan, Hashim, Iqbal, Bhutto, & Mustafa, 2021). A real, sincere, and passionate brand is what is referred to as authentic and this was investigated by Rodrigues, Borges and Sousa (2021). The aim of the study was to explain the importance of brand authenticity dimensions in consumers’ perception of brand image, in addition, to see if the brand - consumer emotional link which the author referred to as brand love, is increased by the consumers’ views of the brand's image, as well as to see if consumer perceptions of the brand's image increase brand satisfaction and brand love. The study's findings demonstrated a strong and significant relationship between brand authenticity (originality, continuity, reliability, and naturalness) and brand image. According to the study, brand image and customer satisfaction are related. The study also discovered a connection between brand love and brand satisfaction as well as a connection between brand love and brand image. The findings imply that to ensure consumer satisfaction and organisational success, a positive brand image is essential (Rodrigues et al., 2021).

2.4.6 Perceived quality

Perceived quality is component of brand equity as outlined by Aaker (2009). Furthermore, perceived quality is related to the features that the consumer is seeking and is a mental construct. Customers are more likely to purchase products from high-quality companies, and this helps the brand stand out from its competitors. Moreover, consumer impressions of a product's perceived quality rather than an objective measurement of its functionality or manufacturing quality are used to determine perceived quality (Akoglu & Özbek, 2022). For example, different types of cement perform different tasks, an individual using cement to create bricks might be looking for a cement that sets faster which allows the individual to sell the bricks faster, however that feature is not important for someone looking to build a house and who does not need cement which sets quickly. According to Wang et al. (2020) perceived product quality reflects customers' subjective evaluation of a product's overall superiority or excellence, and a gap exists between actual and perceived product quality. As perceived quality is a perception, individuals can have a positive or negative attitude towards it, for instance, a consumer might have a positive attitude towards inferior quality as it usually means a lower price and have a negative attitude towards high quality as it means a higher price (Aaker, 2009). Seller-generated signals (e.g. warranty, price and website quality) can convey information from sellers to customers to influence trust, perceived product quality and purchase decisions. Thus, forming customers' perceived product quality through signals is important when customers cannot directly ascertain actual product quality (Wang et al., 2020).

In the study that was conducted by Akoglu and Özbek (2022) which explored the effect of emotional (perceived quality) and rational (brand trust) factors between brand experience and brand loyalty, the study found that perceived quality positively impacts brand loyalty. The study also found that brand experience has a direct impact on brand trust, perceived quality, and loyalty. Then, brand trust and perceived quality have a direct bearing on customer loyalty. Finally, it was shown that there was a partial mediation effect between perceived quality and brand trust, brand experience, and brand loyalty. However, there is an interesting dynamic between customer feedback, perceived quality and purchase intention. In the study that was conducted by Wang et al. (2020) which explored the emotional content of online customer reviews, which are considered an efficient way to reduce information asymmetry, as a potential signal of product quality. According to the study, positive online customer reviews are associated with a greater degree of perceived product quality than negative online reviews, which in turn increases the possibility that a buyer will make a purchase.

2.4.7 Price

Price is the amount of value exchanged by consumers for the benefit of owning or using a product or service (Satriawan & Setiawan, 2020). Cement prices in South Africa increased by an average of 11.5% in 2019 and slowing to an average of less than 2% in 2020 as the sector was hit hard by the COVID – 19 pandemic (l2b.co.za, 2022). According to Stats SA cement prices increased by an average of 7% between January and November 2021 (l2b.co.za, 2022). When the perceived quality is higher, people are willing to pay higher prices (Lai, Yuen, & Chong, 2020). Furthermore, some consumer behaviour researchers assume that perceived price is like perceived quality. In the elements of brand equity outlined by Aaker (2009), all the elements have provided a reason to buy by the consumers as one of the outcomes, whether it is perceived quality or brand associations. In the study that was conducted by Satriawan and Setiawan (2020) which investigated the role of purchase intention in mediating perceived prices and perceived quality, the study found that perceived price and perceived quality positively and significantly affect purchase intentions. Price is an important factor when it comes to the selection of a cement brand, Nteta and Mushonga (2021) pointed out that cement is a commodity, and, therefore, there are not many opportunities for differentiation. and a competitive advantage in the South African cement market is achieved through cost leadership.

2.4.8 Influence of others

When making purchase decisions, consumers tend to be influenced by social interactions with other people, and this social presence is one of the main factors that facilitate consumer purchasing decisions (Huang, Zhu, Hao, & Deng, 2022). Subjective norms are based on the rules imposed by the group and the attempt of the individual to receive approval (Mainardes et al., 2019). According to Obrenovic, Du, Godinić and Tsoy (2022) our actions are constrained by conforming, complying, and obeying when subject to social influence and norms, furthermore, norms are attitudinal and behavioural uniformities and shared beliefs guiding group conduct. It has been found that consumers in collectivist cultures tend to be more concerned about social pressure than those in individualistic cultures (Rodrigo, Khan, & Ekinci, 2019). Further, it is believed making purchases with social approval enhances the consumption experience and enhances an individual's belonging to a group (Rodrigo et al., 2019). In the study that was conducted by Mainardes et al. (2019), the authors found a positive relationship between the influence of relationship groups' perceived value and social pressure on purchase intentions. According to Bai, Wang and Gong (2019), purchase attitude is developed in social networks, and it is affected by social norms. In addition, this suggests that there is a direct path between subjective norms and purchase attitude (Bai et al., 2019). In the study that was conducted by Liu, Liu and Mo (2020) which investigated the underlying factors that influence Chinese consumers’ purchase intentions towards green products, the results of the study revealed that subjective norms are positively associated with green purchasing behaviour. In the study that was conducted by Chakraborty (2019) which investigated the importance of brand equity dimensions which act as a mediator between online reviews and consumer’s purchase intention, the study found that brand awareness and perceived value had partial mediation effect between source credible online reviews and purchase intention.

2.4.9 Packaging

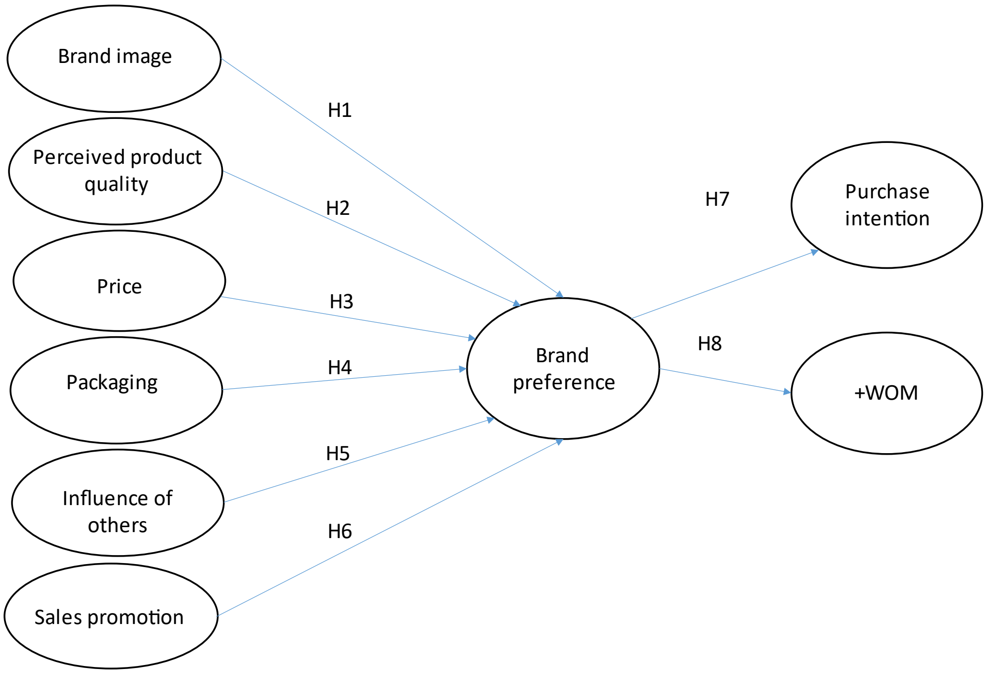
Packaging is defined as the structure suitable for the product, designed to protect it from damage and deterioration and to enable it to be divided into parts and its transportation as well as providing information about the product (Benachenhou, Guerrich, & Moussaoui, 2018). Packaging of cement is the factor of high importance for both seller and producer. In addition, cement packaging is important in terms of protection of cement from moisture so that quality of the cement can be maintained (alliedmarketresearch.com, 2023). According to Simms and Trott (2022), organisations are increasingly looking to packaging to revitalise mature brands to achieve higher price premia. For instance, cement typically comes in 50Kg bags, however some manufacturers such as AfriSam have introduced smaller 25Kg bags which addresses the fact that consumers don’t always need larger quantities of cement, especially for smaller, do-it-yourself projects around the home. The bag is easier to carry, load and transport in everyday vehicles, as well as more convenient to store at home. It also reduces wastage as the contents of a smaller bag are almost always fully utilised (Nampak, 2023). As outlined by Aaker (2009), where consumers have little motivation to evaluate products, they depend on brand elements to decide which brand to purchase and this could be a symbol, and this provides a basis to buy the product. Packaging encompasses various elements, which include the size, graphics, colour, and material (Rahman, Harun, & Johari, 2020). This is reinforced by Benachenhou et al. (2018), who stated that the importance of packaging lies in the development of brand image and symbolic communication of the company to shape consumers buying behaviour and contributes to influencing purchase intention.

2.5 Conceptual model and hypothesis development

2.5.1 Conceptual Model

The objective of the current study is to determine the antecedents of brand preference in the South African cement industry. To accomplish that, a conceptual model has been developed with six independent variables which are, brand image, perceived product quality, price, the influence of others and sales promotions. The dependent variable is brand preference, and the outcome variables are purchase intention and word-of-mouth. The conceptual framework is shown in Figure 2.8.

Figure 2. 8: Conceptual framework



Source: Authors own construction (2022)

2.5.2 Hypothesis development

Based on the conceptual framework, the following are the hypothesised relationships.

i. Brand image and brand preference

Brand image is a consumer's perceptions about a brand (Keller, 2013). When customers must pick one brand over competitor companies, brand image becomes crucial (Kim & Chao, 2019). It is important to remember that consumers form pictures of products and services over time because of their encounters with the brand (Rodrigues et al., 2021). In terms of brand preference, Kumar Mishra (2019) investigated drivers of brand preference in the cement industry and looked at quality, brand image, product availability, brand advertising, discount sales, promotions, and the willingness to try a new brand. The author used a Likert scale to evaluate the consumers' perceptions of the various criteria. Consumers gave the least weight to their inclination to try out new brands. In their research, Kim and Chao (2019) examined the relationship between consumer perceptions of several branding elements, which included brand image, trust, attachment, experience, and purchase intention, and how customers develop their purchasing intentions for high and low involvement product categories. The results of the study found that brand image had a positive influence on purchase intention, also, the direct effect of brand image on purchase intention was found to be most influential for the low involvement product category. Therefore, the following hypothesis is proposed.

H1: There is a positive relationship between brand image and brand preference

ii. Perceived quality and brand preference

Perceived product quality is a concept that exists in consumers' minds and is used by people to decide whether a product meets their expectations (Hanifati & Salehudin, 2021). In the construction industry, which is the primary market for the cement industry, Jha and Dahal (2020) conducted a study to determine the factors that construction companies evaluate when choosing a cement brand; the study found that quality was the most important factor, followed by price. Drawing from the work of Tadesse and Tessema (2020), the study found that service is the main attribute that influences consumer preferences, followed by price and quality for cement brand selection. Customers evaluate quality on two levels; technical solutions that solve customer problems, for example, the strength of the cement is a key factor when it comes to influencing consumers. The second dimension is the functional quality that adds value, such as information knowledge and social characteristics (Samudro, Sumarwan, Yusuf, & Simanjuntak, 2018). In the study that was conducted by Vazifehdoost and Negahdari (2018), the authors discovered that perceived quality does positively influence brand loyalty. In addition, the authors highlighted that consumers evaluate perceived quality from their purchase experience (Vazifehdoost & Negahdari, 2018). In another study that was conducted by Mahaputra and Saputra (2022), that explored quality, brand image and price for cooking oil in Indonesia, quality was found to be the most important factor whereas brand image is an indicator of quality of the brand being offered. In cement brand choice, perceived quality influences trust and satisfaction and companies must establish points of differentiation as a kind of added value, whether in the form of a product or a service (Samudro et al., 2018). The studies of Jha and Dahal (2020) and Kumar Mishra (2019) found that quality was an important factor when it comes to evaluating cement brands. Therefore, the following hypothesis is put forward.

H2: There is a positive relationship between perceived product quality and brand preference.

iii. Influenced by others and brand preference

Risk aversion is a significant aspect when customers need to be certain about the goods they are buying, and the customer may be influenced by others. In the case of cement brands, this influence extends to consultants, friends, and relatives where the consultant is considered as the expert and friends/relatives are the prior users of the specific brand. Marketers strive to understand various steps involved in the entire process of consumer decision making for the final purchase of a product. Information is the most important factor in the consumer decision making process (Komleh, 2018). In this way, the consumer's decision process is motivated and comes to the point of purchase (Kumar Mishra, 2019). The information search is the initial process of activating internally saved knowledge or relying on external sources (Shekarchizadeh, Ranjbarian, & Ghasemi, 2018). In the study that was conducted by Rodrigo et al. (2019), the author employed the Theory of Reasoned Action to investigate consumer purchase intention towards products made in foreign countries. The study found that that subjective norms do not influence purchase intention of products made in foreign countries. However, the study conducted by Núñez-Fernández, Pérez-Villarreal and Mayett-Moreno (2021) revealed that subjective norms do positively influence purchase intention towards eating fast food. There is a link between perceived product quality and the influence of others in the selection of cement brands; this is also emphasised by the finding that consumers' willingness to try a new brand is not a significant factor when evaluating cement brands. This is also taking into consideration that there are two levels that may influence a consumer, the first level includes psychological influences that are close to an individual, such as perception and learning (Panwar, Anand, Ali, & Singal, 2019). The second level of influence includes influences that have been developed through the socialisation process and includes reference groups and family influences (Panwar et al., 2019).

H4: The influence of others and brand preference have a positive relationship

iv. Price and brand preference

Price from the consumers' view point, is seen as the amount of money spent to get a specific good or service (Cham et al., 2020). There are two dimensions to consider when it comes to pricing which are perceived pricing which is conceptualised and associated with other constructs, such as benefits, cost, value, and quality (Lai et al., 2020). The second dimension of pricing is the monetary aspect which is regarded as the objective price, which is the actual price of the product or service (Cham et al., 2020). Further, the consumer's perceived value reflects a trade-off between perceived benefits and the value spent (Mainardes et al., 2019). Businesses must consider price sensitivity when developing pricing strategies (Cakici & Tekeli, 2021). In the study conducted by Jha, Jha and Dahal (2020), the weighting of price was less then then the weighting of quality as a criterion used in the selection of cement brands, however in the study conducted by Kumar Mishra (2019), price was not included in the criteria used to evaluate cement brands. In the study conducted by Roy and Malhotra (2018), the authors investigated the factors which impact the brand preference of milk and the results of the study found that price was the most important marketing mix variable that influenced preference. In terms of brand choice, Lema and Negash (2018) investigated the determinates of brand choice in the bottled water category; the authors explored various factors and price was one of them. The authors found that price had a significant impact on consumers' selection of bottled water. Therefore, the following hypothesis is put forward

v. Packaging and brand preference

Product packaging refers to the container of the product. It includes the design, colour, shape, labelling and materials which encompass the physical appearance of the product (Beneke, Mathews, Munthree, & Pillay, 2015). In retail outlets, cement comes in 50Kg paper bags and packaging serves a critical role in protecting the cement throughout the entire process, from the facility where it is made to its final consumers (shupackaging.com, 2022). Various authors have explored the role of packaging and its impact on brand selection and include Halabi (2021), Setiowati and Liem (2018) and Wang, Wang and Cho (2022). The packaging of a product has a significant impact on the purchasing intention and product choice of consumers (Halabi, 2021). Bonney et al. (2022) found that packaging had a positive and significant influence on brand preference for cement. Packaging plays an essential part in the branding process to communicate the company's image and identity, thus differentiating the company from its competitors. Packaging is an effective sales promotion tool that stimulates impulse-buying behaviour (Setiowati & Liem, 2018). Packaging design plays a significant impact in influencing consumer perceptions in a favourable way (Wang et al., 2022). Setiowati and Liem (2018) investigated how visual packaging design affected brand preference, perceived quality value, and repurchase intentions. The authors found that packaging design has a significant impact on perceived product quality and that positively aided perceived product value. The study did not, however, support the link between brand choice and packaging design. Based on the empirical literature that has been reviewed, the following hypothesis is put forward

H5: There is a positive relationship between packaging and brand preference

vi. Sales promotion and brand preference

Sales promotion is defined as activities that provide additional benefits for customers to encourage them to take immediate responses and it usually takes place during certain time periods at certain locations or among a fixed customer group (Gorji & Siami, 2020). The concept of bulk discounts was explored by Iranmanesh, Jayaraman, Zailani and Ghadiri (2017); according to the authors, retailers prefer certain sales from customers now over uncertain future sales, so the capacity of retailers to sell more units to the consumers reduces the chances that consumers will run out and make purchases from competitor brands (Iranmanesh et al., 2017). When consumers are exposed to more frequent brand promotions, they develop brand awareness, brand associations and positive perceptions of brand quality (Kaswengi & Lambey-Checchin, 2019). To attract customers and expand their clientele, retailers use sales promotions in a variety of ways, such as price reductions, volume discounts, gifts, and competitions (Iranmanesh et al., 2017). In the study conducted by Langga (2021) which explored the influence of incentive distribution and sales promotion towards customer-based brand equity, repurchase intention and word-of-mouth, the author found that sales promotion does not have a significant influence towards brand loyalty, brand awareness or brand association; three out the five dimensions of brand equity. However, sales promotions did have a positive influence on word-of-mouth. Further, the study found that incentives distribution had significant and positive influence towards brand equity and repurchase intention. akbar, Ahmad, Asif and Siddiqui (2020) investigated the influence of sales promotion and emotional brand attachment on post-purchase dissonance. One of the hypotheses in the study was to test the relationship between sales promotion and impulse buying, and the study found a significant relationship between sales promotion and impulse buying. Based on the above, the following hypothesis has been put forward

H6: There is a positive relationship between sales promotion and brand preference

vii. Brand preference and purchase intention

Brand preference is the choice of one brand over another and it occurs because of past experience and brand preference is closely linked with purchase intention (Briliana & Andrianto, 2019). According to Junarsin, Pangaribuan, Wahyuni, Hidayat, Putra, Maulida and Soedarmono (2022), brand preference is the equivalent of purchase intention and a consumer's attitude towards a brand plays an important role in determining brand preference. Interestingly, Bashir, Faheem, Hassan and Shaikh (2019) mentioned that brand equity reflects brand preference, and that brand preference and purchase intention are related in a similar manner. Junarsin et al. (2022) looked at green products and investigated the influence of green awareness, green trust and green brand preference in green purchase intention. The results of the study revealed a positive relationship between green awareness on green trust and green brand preference and green purchase intention. The study also looked at the relationship between green awareness and green purchase intention without green trust and green brand preference as mediators, however the relationship between awareness and purchase intention was not confirmed. Briliana and Andrianto (2019) explored the antecedents and outcome of brand preference towards the purchase of instant noodles. The results of the study found that brand preference has a positive impact on purchase intention. Bashir et al. (2019) investigated the impact of brand equity on consumer brand preference and brand purchase intention. The results of the study revealed that consumer brand preference has a positive impact on purchase intention. Therefore, based on the above, the following hypothesis is proposed.

H7: There is a positive relationship between brand preference and purchase intention

viii. Brand preference and word-of-mouth (WOM)

Word-of-mouth refers to people informally talking about their experiences with a particular brand without being paid and is an inexpensive form of marketing communication (Chokpitakkul et al., 2020). According to Hilal (2019), word-of-mouth is a source of competitive advantage as it creates interest in purchasing and induces new purchases. That means word-of-mouth goes hand in hand with purchase intention. In addition, word-of-mouth enhances brand equity through creating awareness and providing assurance about the products and services provided by a brand (Hilal, 2019). Due to consumers' lack of technical knowledge regarding cement, it is difficult to convince them of the superiority of one cement brand over another (Taher, 2020). When a consumer who lacks technical knowledge is looking for information about cement, external influencers like masons, contractors, and architects act as a catalyst for selecting a cement brand (Taher, 2020). In the study that was conducted by Hilal (2019), one of the objectives of the study was to investigate the impact of word-of-mouth to the brand equity of fashion clothing stores. The study concluded that word-of-mouth positively contributes to the brand equity of fashion clothing stores. In the study that was conducted by Chokpitakkul et al. (2020), the authors investigated the role of brand preference on brand loyalty and how brand loyalty impacts word-of-mouth. The study revealed that brand loyalty does impact word-of-mouth (Chokpitakkul et al., 2020).

H8: There is a positive relationship between word-of-mouth and brand preference

2.6 Chapter 2 summary

Chapter two explored the study's various components, as well as the industry's dynamics on a global and local level. This chapter looked at industry-related studies. This chapter also looked at literature that clarified the study's theoretical foundations, as well as an empirical literature review, the introduction of the conceptual framework, and hypothesis statements.

Chapter 3. Research Methodology

3.1 Introduction

This chapter is focuses on methodology and will look at topics such as the research paradigm, the research design, reliability, and validity. The ethics and confidentiality of the study is also discussed in this chapter.

3.2 Research paradigm

Research paradigm is defined as the author’s world view or belief system that guides the investigation (Bogna, Raineri, & Dell, 2020). Several paradigms or world views, such as constructivism, post-positivism, participatory action frameworks, or pragmatism, guide contemporary social research (Kaushik & Walsh, 2019). Axiology, or beliefs about how values and morality play a part in research is one of the common parts of research paradigms that are fundamentally philosophical in origin. Epistemology presumptions relate to how we learn things, how we acquire knowledge, and how the knower and the knowing are related. Rhetoric is a shared grasp of the research language, and methodology, which is a shared understanding of the best ways to learn about the world. (Kaushik & Walsh, 2019).

3.3 Research approach

This research study followed the positivism research approach. Positivism is a quantitative research approach in which the relationship between an independent variable and another dependent variable is investigated using causal inferences because of experimental designs, and the relationship is fully determined by how researchers maximise the influence of the independent variable on the dependent variable and events (Pham, 2018). Furthermore, the positivism research approach assists to understand the phenomena under study through empirical tests and methods such as sampling, measurement questionnaire, focus group discussions (Pham, 2018).

3.4 Research design

Research design is central to research studies in science, social science, and many other disciplines. Moreover, selecting an appropriate research design is perhaps the most important decision a researcher makes (Abutabenjeh & Jaradat, 2018). Various parts of research design include minimising expenditure, facilitating seamless scaling, and collecting relevant data. The research design process is crucial since it has an impact on the study's outcomes and provides a firm foundation for the entire investigation (Pandey & Pandey, 2021). There are three different approaches that the author can adopt in terms of research design, the approaches are quantitative, qualitative, and mixed methods (Asenahabi, 2019). The quantitative research design requires a significant amount of time and planning, the technique and method produces discrete quantifiable values. The collected data results from empirical observations and measures and tend to have close ended responses. There are various techniques that can be employed with a quantitative research design which are survey design, causal-comparative design and correlation design (Asenahabi, 2019).

A survey study is a numeric description of attitudes, opinions, or trends of a population by studying a sample of that population (Asenahabi, 2019). A cross-sectional survey design was used in this study. In this type of study, the complete population, or a subset was chosen, and data was collected from these individuals to assist in answering research questions of interest (Olsen & St George, 2004). The aim of the research was to determine the relationship between the constructs that are antecedents of brand preference, which are perceived product quality, brand image, packaging, price, promotion, and the influence of others, and the impact they have on the outcome variables, purchase intention and word-of-mouth.

3.5 Population and Sampling

In research, the term ‘population’ refers to a well-defined set of units of analysis that represent the study's focus. A group of people, a country, an organisation, an agency, an event, a news item, a year, a score, a book, and so on, are examples of analytical units (Van Haute, 2021). In a research study, it is not always possible to investigate the population as a whole, hence a sample is used. The sample, which is drawn from the population, ought to be a decent representative of the entire population (Acharya, Prakash, Saxena, & Nigam, 2013). There are two primary categories of sampling strategies used in population research, which are probability sampling and non-probability sampling. Non-probability sampling is a technique where the odds of the subject being chosen are not known which leads to the study's bias in selecting (Acharya et al., 2013). In population sampling, members of the population have equal chances of being selected to participate in the study (Acharya et al., 2013).

3.5.1 Target population

In the study conducted by Kumar Mishra (2019), the target population for the study included architects, engineers’ suppliers, and consumers. The population for the present study included general consumers, people who had recently built or renovated their homes. The questionnaire was also shared with individuals in the construction industry, such as building contractors, civil engineers’ architects, and professionals from the major construction firms in South Africa.

3.5.2 Sampling framework

The list or frame from which a sample will be chosen is referred to as a sampling frame. It holds the names of all the universe's objects. If a source list is not provided, the researcher will have to make one. A thorough, correct, dependable, and relevant list would be ideal. Furthermore, if the sampling framework is inappropriate, it will result in systematic bias. The framework for the study consisted of individuals who have engaged in building activity in the past 12 months or worked within the construction industry.

3.5.3 Sampling method

According to Pace (2021), when deciding on which sampling strategy to employ, the author should have a clear research goal and engage in a self-reflective exercise about the research project, asking whether the study sample group.

- is homogenous (shares the same characteristics)
- is heterogeneous (different characteristics)
- needs an exhaustive list of the population.
- is widely spread, requiring travelling.

It is important to address these criteria as the incorrect sampling strategy will jeopardise the results of the study as they might not be aligned to the views of the target audience. Probability sampling is considered the gold standard in sampling methodology and for also generalising the results of the study to the target population (Acharya et al., 2013). In terms of probability sampling, the members of the population have equal chances of being selected to participate in the study (Stratton, 2021). Furthermore, when it comes to probability sampling techniques, there is less risk of bias in the results of the research. Most importantly, probability sampling allows for determination of an optimal sample size and considers sampling errors. Conclusions and inferences about the target population can be derived from the study through probability sampling (Stratton, 2021). Table 3.1 outlines the different sampling techniques that are available.

Table 3. 1: Sampling techniques

Probability sampling	**Non-probability sampling**
Simple random (SRS)	Convenience
Systematic	Purposive
Stratified	Quota
Cluster	Dimensional
Stage or multi-stage	Snowball

Source: Author’s own construction (2022)

The study employed a mix of probability sampling and a probability sampling strategy and the techniques that were used were simple random sampling and stratified sampling. Stratified sampling involved dividing the data into sub-groups (strata) sharing common characteristics like age, sex, income (Stratton, 2021); this involved engaging with building contractors, hardware store representatives and other individuals who worked with cement, whereas simple random sampling involves the researcher randomly selecting participants from the population (scribbr.com, 2022). For example, this included sending the online questionnaire link to the contacts on the researcher’s mobile phone. In terms of non-probability sampling, snowballing is a technique that was employed, which also referred to as chain referral sampling. With snowballing, a primary data source proposes additional potential data sources that might participate in the research study (questionpro.com, 2022).

3.5.4 Sampling size

The number of items to be randomly chosen from the universe to make up the sample is referred to as the sample size. Determining the sample size poses a major challenge for the researcher; it should be optimal because the sample size cannot be either too large or too small (Kothari, 2004). A good sample size must fulfil the requirements of efficiency, representativeness, reliability, and flexibility. There are various factors to consider when it comes to sample size, the researcher must determine the desired precision and the acceptable confidence level for the estimate. Furthermore, the size of the population variance must be evaluated, this is because more variation usually necessitates a larger sample. The population size must be considered and when deciding on the sample size for a research study, the criteria of interest should be kept in mind. The size of the sample we can draw is also limited by costs. As a result, budgetary constraints must always be considered while determining sample size (Kothari, 2004).

Statistics South Africa conducts monthly building statistics, obtaining data from local government institutions on building plans passed and completed through private sector funding. However, this data does not include low-cost housing development as this is not always made available to funding institutions (tradingeconomics.com, 2022). New housing units that were reported as completed in 2019 were a total of 32 435 units over an 8-month period January to August 2019 (ABSA, 2019). The figure of 32 435 is the population figure and when the figure is inputted into the Raosoft sample calculator, a sample size of 380 was recommended (Raosoft, 2022). However, the sample that was achieved from the study was 260 individuals and that was sufficient to run and test the data using SPSS and AMOS v27.

3.6 The Research instrument

The quality of the researchers' efforts will be, in part, judged by the appropriate use of research techniques used by the researcher. The purpose of any measurement procedure is simply to produce reliable information which is valid and relevant to the questions being asked by the researcher and the decisions to be made (Van de Ven

& Delbecq, 1972). Online questionnaires were used for this study. Online questionnaires have been used in various studies (Ha, 2021). The advantage of using self-administered questionnaires is that it allows the researcher to reach a wide and geographically dispersed group of potential respondents in a cost-effective manner. Furthermore, self-administered questionnaires allow respondents to answer the questions in their own time and there is no time constraint as they can answer the questionnaire at a convenient time for them (Ha, 2021).

3.6.1 Research instrument items

The research investigated the causes of consumer brand preference in the South African cement industry and the outcome variables were purchase intention and word-of-mouth. The relationship between the independent variables and dependent variables were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The measurement scales for the constructs have been adapted from validated literature with a total of 37 questions. The questionnaire includes one screening question and six demographic questions. The measurement scales were adapted from the literature as outlined in Table 3.2.

Table 3. 2: Constructs

Construct	**Supporting Literature**
Influenced by others	(Mainardes et al., 2019)
Perceived Product Quality	(Mainardes et al., 2019)
Price	(Mainardes et al., 2019)
Sales promotion	(Kuncoro & Kusumawati, 2021)
Brand Image	(DAM & DAM, 2021)
Packaging	(Waheed & Ahmad, 2018)
Purchase intention	(Kuncoro & Kusumawati, 2021)
Word-of-mouth	(Mahadin & Akroush, 2019)
Brand Preference	(Cheng & Jiang, 2021)

Source: Author’s own construction (2022)

The questionnaire included a participation letter inviting potential respondents to participants in the survey. The research instrument also included a brief explanation of the study's purpose, as well as the researcher's and supervisor's contact information. Prior to answering questions, respondents were asked a screening question which asked if they had purchased cement in the past 12 months, and this was asked to confirm eligibility and if the respondent selected no, meaning they had not purchased cement in the past 12 months, the survey would end for them, and their response would be captured.

3.7 Procedure for data collection

A self-administered questionnaires was sent to potential respondents and asked if they would be interested in taking part in the study. Potential respondents were sent a WhatsApp text or email to ask whether the potential respondents are willing to participate in the study. Subsequently, a link to the online questionnaire upon their confirmation of intention to join the study was sent. In a similar vein, respondents were asked to introduce or recruit further respondents in their network. This is how the snowballing sampling technique was used in the study. Snowballing was a very effective way of collecting data and proved to be invaluable.

3.7.1 Pilot testing

A pilot study is an essential initial step in research and can be used to reveal some logistical issues before starting with the main study (Hazzi & Maldaon, 2015). The results from the pilot study can inform feasibility and identify modifications needed in the main study (Hazzi & Maldaon, 2015). A pilot study was conducted with a small representative group, n=10, prior to data collection. The purpose of this activity was to test if participants have any difficulties reading the sentences and to change specific terms. Pretesting helped with measurement errors, which are described as "the discrepancy between the information sought and the information generated by the researcher's measuring procedure" (Ha, 2021). From the pretesting phase, certain demographic questions were removed which were too technical and would not be relevant to the sample population.

3.8 Data analysis

After the data has been collected, the researcher turns to the task of analysing the data. The analysis of data requires several closely related operations, such as the establishment of categories, the application of these categories to raw data through coding, tabulation, and then drawing statistical inferences (Kothari, 2004). After analysing the data, the researcher is in the position to test the hypothesis and determine if the facts support the hypothesis or if they are contrary. This can be done through various tests which include Chi squared test, t-test, and f–test (Kothari, 2004). The data was analysed using SPPS and AMOS, both programmes test the relationship between the independent variables and the dependent variables. The significance of the association between one dependent variable and one independent variable was assessed using regression analysis. Multiple regression analysis techniques were used as there were more than two independent variables being tested (Crowson, 2021). A Confirmatory Factor Analysis (CFA) was used. CFA is a good technique to test the theories, account for measurement errors and to test multivariate models (NCRMUK, 2016)

3.9 Reliability and validity

Validity and reliability are methods testing the systematic integrity of the research design, the researcher's standing, the plausibility of the results, and the application of the research methodologies that are all important ways of assuring trustworthiness (Rose & Johnson, 2020). Reliability and validity are concepts that are applied to measurement scales and screening tools (Andrade, 2018). Reliability is a word used to describe the validity of a study, especially in terms of the proper methodologies selected and the manner in which those methods were used (Rose & Johnson, 2020). Furthermore, reliability refers to the consistency by which the results are obtained (Andrade, 2018). The instrument's ability to perform its intended function is referred to as its validity (Andrade, 2018). Validity looks at the accuracy of the findings from the standpoint of the researcher, the participant and/or the consumers of the research (Rose & Johnson, 2020).

3.9.1 Internal validity

Internal validity investigates the way the study was designed, conducted, and analysed to obtain trustworthy answers to the research questions in the study (Andrade, 2018). Internal validity examines the extent to which systematic errors (bias) are present

(Andrade, 2018). Confirmatory Factor Analysis was performed to evaluate the constructs of the measurement model.

3.9.2 External validity

Examining a study's external validity determines whether its findings may be applied to other situations (Andrade, 2018). With regard to studies using the positivism approach, the researcher may have quality standards of reliability and validity and be generalised to the large scale of the population (Pham, 2018).

3.9.3 Content validity

Content validity is the extent to which the research instrument provides sufficient coverage of the topic under study (Kothari, 2004). If the population of the study includes a representative sample of the universe, then the content validity is good. Furthermore, content validity is primarily judgemental and intuitive and cannot be expressed numerically (Kothari, 2004). The research obtained both discriminant and convergent validity.

3.9.4 Reliability

Reliability is about the consistency of the methodological process, and the chances of remaining reasonably stable over time and across researchers and/or methods engaged (Rose & Johnson, 2020). Furthermore, reliability considers the consistency and clarity of the research's actual conduct, enhancing the possibility that future researchers will be able to not only understand but also carry out many of the research procedures mentioned. From a reliability point of view, the Cronbach’s alpha values for the measurement items were obtained along with other model fit indices which included CMIN/DF to ensure the reliability of the study.

3.10 Ethical considerations

Researchers need to have their research plans reviewed by an institutional review board (IRB) committee at their college and university campuses (Chih-Pei & Chang, 2017). The committees exist on campuses because of regulations that provide protection against human rights violations (Chih-Pei & Chang, 2017). Furthermore, the committee requires the researcher to assess the potential for risk to participants in a study, such as physical, psychological, social, economic, or legal harm. Also, the researcher considered the special needs of vulnerable groups, such as minors (Chih-Pei & Chang, 2017).

3.10.1 Confidentiality and anonymity

The research was a minimum risk study, the anonymity of respondents was guaranteed and there was a consent form. All the consideration factors that were outlined by Chih-Pei and Chang (2017) were evaluated and an ethical clearance certificate was granted by the institution.

The research study has considered the Protection of Personal Information Act (POPIA) which regulates the processing of personal information for research purposes (Adams, Adeleke, Anderson, Bawa, Branson, Christoffels, Vries, Etheredge, Flack-Davison, & Gaffley, 2021). According to the POPIA, the researcher is referred to as the Responsible Party and is responsible for determining why and how the personal information is being processed (Adams et al., 2021). Furthermore, the responsible party must ensure that there is a lawful basis for the processing of personal information and that the processing of the information is necessary for a defined purpose and could not be achieved without the processing of personal information (Adams et al., 2021). The participation information sheet did state that the responses of the participants is significant for the study being conducted, furthermore respondents were not required to provide their name, ID number and cell phone number so their anonymity was guaranteed.

3.11 Chapter 3 summary

This chapter explored the research methodology that was be used in this study, the study followed a positivism approach, which influenced the quantitative research design that was selected. Probability and non-probability sampling were used, and the chosen sampling techniques were snowballing, stratified, and simple random sampling and the sample achieved is 260 participants. Data was collected via an online close ended self-administered questionnaire. The data was analysed using

SPSS and AMOS, furthermore the validity and reliability of the study were explored in this chapter. The next chapter, chapter 4, is the presentation of the results.

Chapter 4: Data analysis and presentation of results

4.1 Introduction

This chapter presents the research findings. Descriptive statistics from the study are analysed and discussed first, and then the study's reliability and validity measurements, which were determined by CFA. The data collection took place between the 6th of May 2022 and the 25th of July 2022. An online self-administered questionnaire was utilised to collect data and distributed.

4.2. Descriptive profile of respondents

The online questionnaire was completed by 261 individuals. The questionnaire consisted of a screening question which determined if individuals had purchased cement in the past twelve months, those who had purchased cement could continue with the rest of the survey, whereas for those had not, the survey would close. Overall, 261 individuals participated in the survey and 204 individuals continued with the survey and 57 ended at the screening question. The demographic information of the respondents is illustrated in Table 4.1, followed by a discussion afterwards.

Table 4. 1: Descriptive statistics

Gender	**Frequency**	**Percent**
Male	121	59.3
Female	81	39.7
Prefer not to say	2	1
Total	**204**	**100**
Age	**Frequency**	**Percent**
18-21	2	1
21-25	18	8.8
26-30	49	24
31-35	39	19.1
36 – Older	96	47.1
Total	**204**	**100.0%**
Residence/ Province		
	Frequency	**Percent**
Gauteng	124	**60.8**
North - West	**60**	**29.4**
Mpumalanga	**4**	**2**
Limpopo	**2**	**1**
Free State	**4**	**2**
Northern Cape	**3**	**1.5**
Western Cape	**3**	**1.5**
KwaZulu – Natal	**1**	**0.5**
Eastern Cape	**3**	**1.5**
Total	**204**	**100%**
Cement Brand Purchased	**Frequency**	**Percent**
AfriSam	33	16.2
Cemza	2	1
Lafarge	48	23.5
Mamba	4	2
Sephaku	26	12.7
PPC	81	39.7
Other	8	4,9
Total	**204**	**100.0**

Preferred store to purchase cement		
	Frequency	**Percent**
Cashbuild	91	44.6
Builders Warehouse	54	26.5
Buco	5	2.5
Build It	27	13.2
Leroy Merlin	4	2
Other	23	11,2
Total	**204**	**100**
Reasons for purchasing cement		
	Frequency	**Percentage**
Home building	62	30.5
Home renovation	118	58.1
Business	23	11.3
Total	**203**	**100**

Source: Author's own construction (2022)

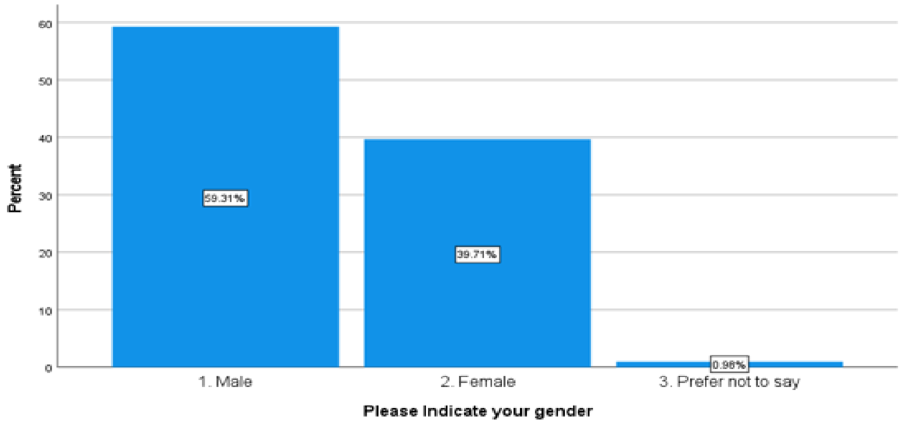
4.2.1 Demographics

The demographics of the respondents which includes the age and geographic location are illustrated in the figures below.

4.2.2 Gender

Most respondents were males (59.3%), followed by females (39.7%) and lastly, 1% preferred not to say. This is illustrated in figure 4.1.

Figure 4. 1: Gender

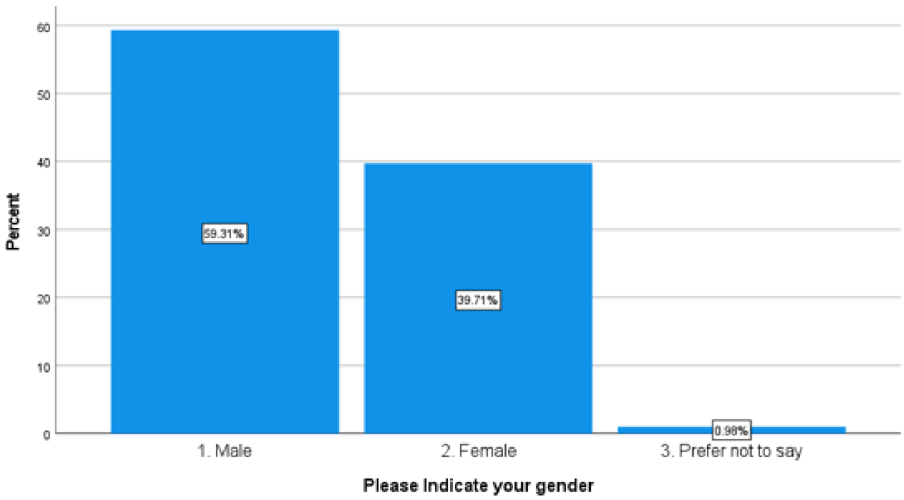


Source: Author’s own construction (2022)

4.2.2 Age group

The 36 years and above age group was the largest group, which was 47.1%, followed by 26 – 30-year-old group, which was 24%. The third largest group was the 31–35-year-old age. The 21-25 and 18-20 age groups responses constituted 8.8% and 1% respectively. Figure 4.2 illustrates the age group distribution of the respondents.

Figure 4. 2: Age group

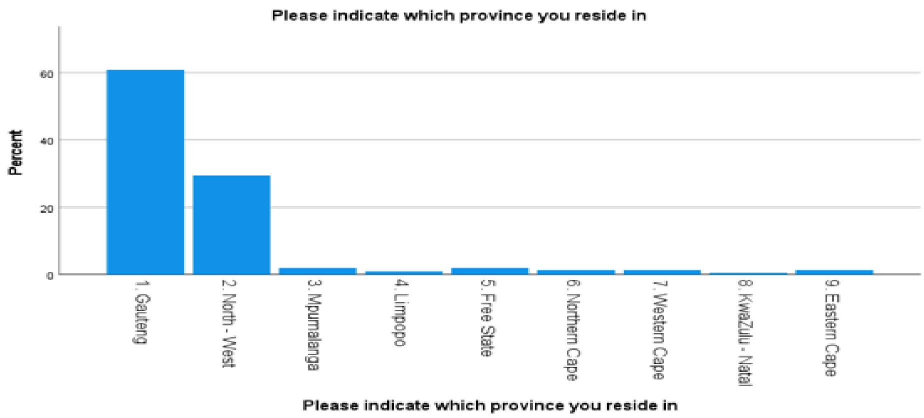


Source: Author’s own construction (2022)

4.2.3 Provincial Residence

Geography plays a major role in the sale and distribution of cement, hence it was important to include the provincial residence of respondents. On average, cement travels 300Km from the factory to the market, with the main nodes being Gauteng, KwaZulu-Natal, and Limpopo (Phillip, 2019). According to Sephaku Cement, their primary geographic markets include Gauteng, Limpopo, Mpumalanga, North West, Free State, Northern Cape, and northern KwaZulu-Natal (KZN) (Sephaku, 2022c). There were responses from all nine provinces. However, most respondents resided in Gauteng (60.8%) and the North–West province (29.4%). the responses from Mpumalanga and the Free State were 2% respectively, followed by the Northern Cape (1.5%), the Western Cape (1.5%), Eastern Cape (1.5%). The responses from Limpopo were 1% and the KZN province was 0.5%. Figure 4.3 outlines the distribution of responses across different provinces. Given that Limpopo, KwaZulu-Natal and the Western Cape are major consumers of cement, it would gave been valuable to gain more responses from those provinces.

Figure 4. 3: Provincial residence

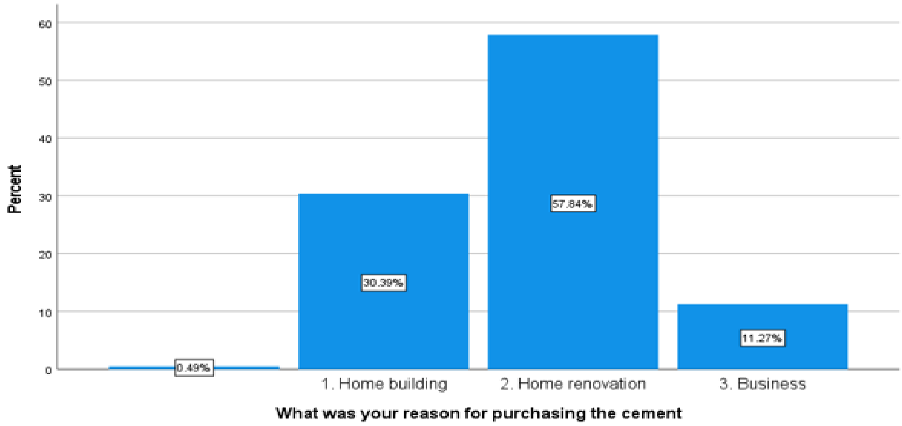


Source: Author's own construction (2022)

4.2.4 Reason for purchasing cement.

This is clearly demonstrated in the graph below as 57.84% of respondents purchased cement for home renovations, followed by home building (30.39%) and lastly, for business purposes (11.27%). Figure 4.5 illustrates the responses for the reason of purchasing cement.

Figure 4. 4: Reason for purchasing cement



Source: Author’s own construction (2022)

4.3 Testing reliability and validity

A test's reliability is determined by how consistently it assesses whatever it is designed to measure, it is an integral part of the validity of the test. If the instrument is sufficiently reliable, then the researcher can assume that measurement errors are sufficiently small to justify using the observed score. for example, the construct. It is crucial to the validity of the test (Teo, 2014).

4.3.1 Cronbach’s alpha

Like composite reliability, the Cronbach’s alpha is used to test internal consistency in the variables. The reliability value of the Cronbach’s alpha ranges from -1 to 1, however we only need to consider the values between 0 – 1. A Cronbach’s alpha value of 0.7 and above considered to be showing good reliability. This means that the questions in the questionnaire had a high correlation to the unobserved variable. Looking at Table 2, the Cronbach’s alpha values were above 0.7 which means that there is internal reliability to the variables being observed.

4.3.2 Composite reliability

Composite reliability is used to test the internal consistency of the variables in the components. For composite reliability to be acceptable, the value must be greater than 0.7. For this study, nine indicator variables were measured, and the composite reliability are shown in Table 4.3. The items measured in the study achieved a composite reliability score which is greater than 0.7; this means that the items or variables have internal consistency.

Table 4. 2: Reliability measures

Research Construct		Descriptive Statistics				Cronbach's Test		C.R. Value	AVE Value	Factor Loading
		Mean Value		Standard Deviation		Item - total	α value			
	SN1	4,034		1,189		0,741				0,837
SN	SN2	4,250		0,993		0,731				0,802
	SN3	3,936	4,074	1,175	1,119	0,767	0,864	0,867	0,799	0,843
	PQ1	4,461		0,704		0,766				0,856
PQ	PQ2	4,466		0,739		0,768				0,853
	PQ3	4,520	4,482	0,691	0,711	0,698	0,864	0,867	0,827	0,772
PP	PP2	3,549		1,268		0,724				0,808
	PP3	3,466	3,507	1,265	1,267	0,724	0,840	0,843	0,832	0,897
	BI1	4,500		0,698		0,725				0,806
BI	BI2	4,250		0,825		0,668				0,765
	BI3	4,485		0,759		0,770				0,824
	BI4	4,446	4,420	0,783	0,766	0,705	0,865	0,868	0,789	0,759
	SP1	2,593		1,381		0,475				0,549
SP	SP2	3,260		1,451		0,522				0,637
	SP3	2,853	2,902	1,465	1,432	0,517	0,690	0,686	0,547	0,755
	PM1	3,598		1,214		0,661				0,735
PM	PM2	3,485		1,246		0,757				0,835
	PM3	3,368		1,331		0,808				0,896
	PM5	3,304	3,439	1,230	1,255	0,606	0,860	0,866	0,740	0,663
	WM1	4,480		0,765		0,789				0,859
WM	WM2	4,510		0,739		0,823				0,915
	WM3	4,191		0,971		0,657				0,692
	WM4	4,407	4,397	0,753	0,807	0,790	0,886	0,900	0,803	0,853
	PI1	4,426		0,694		0,716				0,815
	PI2	4,422		0,742		0,806				0,897
PI	PI3	4,132		0,966		0,538				0,549
	PI4	4,407		0,798		0,778				0,828
	PI5	4,451	4,368	0,777	0,795	0,711	0,871	0,884	0,727	0,769
	BP1	4,152		0,932		0,736				0,896
BP	BP2	3,892		1,021		0,635				0,704
	BP3	3,961	4,002	1,078	1,010	0,669	0,822	0,827	0,739	0,745

Source: Author's own construction (2022)

4.4 Validity Measures

The results of validity measures are discussed below

4.4.1 Convergent validity

Convergent validity is suggested by evidence that multiple indicators of theoretically linked constructs are highly associated (Teo, 2014). For convergent validity to be present in the latent variables, the Average Value Extracted must be greater than 0.5.

The AVE values of the latent variables are above 0.5, which means that convergent validity is present.

4.4.2 Discriminant validity

Evidence that measures of theoretically different constructs do not greatly correlate with one another shows discriminant validity. To ascertain discriminant validity, the square root of AVE must be more than the latent variables correlation. The square root of the AVE is greater than the latent variables as indicated in Table 4.4, this indicates the presence of discriminant validity.

Table 4. 4: Discriminant validity

	SN	PQ	PP	BI	SP	PM	WM	PI	BP
SN	1								
PQ	.469**	1							
PP	.396**	.209**	1						
BI	.517**	.663**	.299**	1					
SP	.111	.056	.338**	.081	1				
PM	.459**	.286**	.493**	.367**	.473**	1			
WM	.544**	.632**	.315**	.668**	.055	.359**	1		
PI	.518**	.619**	.268**	.643**	.037	.310**	.763**	1	
BP	.391**	.431**	.420**	.432**	.113	.387**	.647**	.643**	1

Source: Author's own construction (2022)

4.4.3 Model fit assessment

The goal of SEM and CFA is to identify latent variables using a set of manifest indicators and to then evaluate the hypotheses regarding the relationships among the latent variables (Teo, 2014). Table 4.5 illustrates the model fit indices.

Table 4. 5: Model fit indices

Model Fit Indices	Acceptable Threshold	Outcome
CMIN/DF	<3	1,657
GFI	>0,900	0,9
NFI	>0,900	0,927
RFI	>0,900	0,906
IFI	>0,900	0,969
TLI	>0,900	0,954
CFI	>0,900	0,967

RMSEA	<0,08	0,057

Source: Author's own construction (2022)

i. CMIN/DF

When observing the model of fit and looking at the normed Chi squared value CMIN/DF in the present study, the value is 1.657, which is below 3. A value that is below 3 indicates that the data fits the model well.

ii. CFI

The Comparative Fit Index (CFI) is larger than 0.9 at 0.967, the larger the CFI value, the better. This indicates that the fit is acceptable.

iii. Tucker- Lewis Index (TLI)

Like the CFI value, the TFI value should be larger than 0.9 and indicates that the fit is acceptable. The TFI value is 0.954.

iv. Incremental Fit Index (IFI)

The IFI value which exceeds 0.9 shows that the model fit is acceptable. The IFI value for this study exceeded 0.9 which means there is good fit.

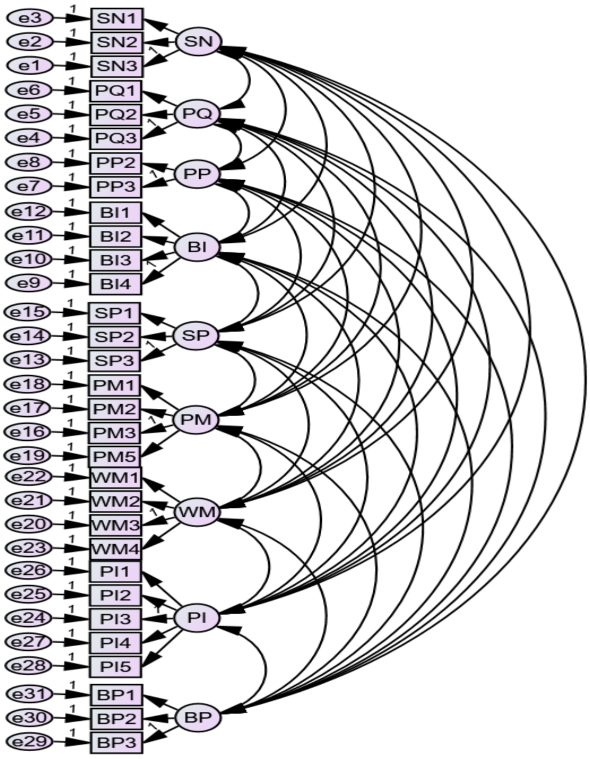
v. Root Mean Square of Approximation (RMSEA)

The RMSEA also measures the fit of the model, a value of 0.05-0.08 indicates that the model fits well. The RMSEA value from the model that was run in this study is 0.057 which means the model fit is acceptable.

4.5 Confirmatory Factor Analysis

Figure 4.5 represents the CFA analysis which is a good technique to measure the relationship between the variables.

Figure 4. 5: CFA

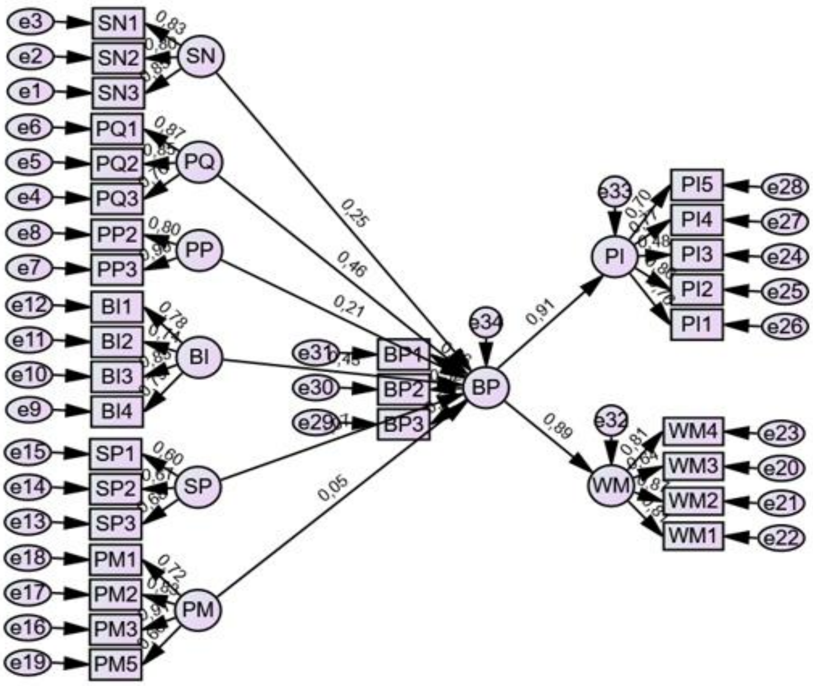


Source: Author’s own construction (2022)

4.6 Path Modelling

Figure 4.6 depicts the study's structured equation model. It has nine measure models that measure the latent variables, which are represented by the letters SN, PQ, PP, BI, SP, PM BP, PI, and WM in the figure, and the indicators are represented by the rectangular shapes labelled SN1 and so forth. The relationship between the measure models is referred to as the structured model, for example, the relationship between SN and PQ. The measure models are reflective models, in which the indicators are highly interchangeable and correlated and this is represented by the arrows pointing towards the indicators from the latent variables.

Figure 4. 6: Path model



Source: Author’s own construction (2022)

4.7 Hypothesis testing results

The study found evidence to support all the hypothesised relationships, of which two did not have a significant impact on brand preference. The results of the hypothesised relationships are illustrated in the tables below.

Table 4. 6: H1 - Brand image and brand preference

Proposed hypothesis relationship	Hypothesis	Estimate/ Coefficient	Path P value	Rejected/ Supported
BP <--- BI	**H1**	**0,431**	*******	**Supported and significant**

Source: Author’s own construction (2022)

The coefficient of H1 was 0,431, which means there is a significant and positive relationship between brand image and brand preference.

Table 4. 7: H2 - Product quality and brand preference

Proposed hypothesis relationship	Hypothesis	Estimate/ Path Coefficient	P value	Rejected/ Supported
BP <--- PQ	**H2**	**0,459**	***	**Supported and significant**

Source: Author's own construction (2022)

The coefficient of H2 was 0,459, which indicates that there is a positive relationship between perceived product quality and brand preference.

Table 4. 8: H3- Price and brand preference

Proposed hypothesis relationship	Hypothesis	Estimate/ Path Coefficient	P value	Rejected/ Supported
BP <--- PP	**H3**	**0,205**	0,009	**Supported and significant**

Source: Author's own construction (2022)

The coefficient for H3 was 0,205, which means that there is a positive relationship between price and brand preference in the South African cement industry.

Table 4. 9: H4 - Packaging and brand preference

Proposed hypothesis relationship	Hypothesis	Estimate/ Path Coefficient	P value	Rejected/ Supported
BP <--- PM	**H4**	**0,049**	**0,434**	**Supported and insignificant**

Source: Author's own construction (2022)

The coefficient for H4 was 0,049, which demonstrates that packaging does impact brand preference, however the impact is not significant.

Table 4. 10: H5 - Influence of others and brand preference

Proposed hypothesis relationship	Hypothesis	Estimate/ Path Coefficient	P value	Rejected/ Supported
BP <--- SN	**H5**	**0,247**	***	**Supported and significant**

Source: Author's own construction (2022)

The coefficient for H5 was 0,247, which implies that the influence of others or subjective norms have a positive impact on brand preference in the cement industry.

Table 4. 1: H6 - Sales promotion and brand preference

Proposed hypothesis relationship	Hypothesis	Estimate/ Path Coefficient	P value	Rejected/ Supported
BP <--- SP	**H6**	**-0,072**	**0,318**	**Supported and insignificant**

Source: Author's own construction (2022)

The coefficient for H6 was -0,072, shows that sales promotions have an impact on brand preference in the cement industry, however that impact is insignificant.

Table 4. 2: H7 - Brand preference and purchase intention

Proposed hypothesis relationship	Hypothesis	Estimate/ Path Coefficient	P value	Rejected/ Supported
PI <--- BP	**H7**	**0,906**	***	**Supported and significant**

Source: Author's own construction (2022)

The coefficient of H7 which is 0,906 shows that there is a positive relationship between brand preference and purchase intention.

Table 4. 3: H8 - Brand preference and word-of-mouth

Proposed hypothesis relationship	Hypothesis	Estimate/ Path Coefficient	P value	Rejected/ Supported
WM <--- BP	**H8**	**0,887**	***	**Supported and significant**

Source: Author’s own construction (2022)

The coefficient of H8 indicates that there is a positive relationship between word-of-mouth and brand preference, with a coefficient of 0,887.

4.8 Chapter 4 summary

In this chapter, the results of the study were presented. The results were obtained through a self-administered questionnaire. SEM was used to analyse the data, using SPSS version 28. The reliability and validity of the results were determined. The hypothesis results were also determined. The next chapter is chapter 5, which is the discussion of the results.

Chapter 5: Discussion of the results

5.1 Introduction

This chapter is a discussion of the results that were obtained from the study and further investigates the profile, the hypothesis results are also discussed in this chapter.

5.2 Respondent's profile

It is important to understand the demographic profiles of the participants in the study, and includes information such age, gender, and the retailer from which they purchased the cement and why they purchased the cement.

5.2.1 Demographic Profiles

The demographic profiles of the respondents are discussed below.

5.2.2 Gender

Although most respondents were men, a sizable number of women participated in the survey. The aim of the question was to make the study as representative as possible as well as to obtain which brand was preferred by which gender. Table 5.1 outlines the gender split of the respondents.

Table 5. 1: Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Male	121	59.3	59.3	59.3
	2. Female	81	39.7	39.7	99.0
	3. Prefer not to say	2	1.0	1.0	100.0
	Total	204	100.0	100.0	

Source: Author's own construction (2022)

5.2.3 Age group

Age was also an important factor to understand in the study to know from the individuals who had participated in the study and have purchased cement in the specified period, how old they were. The study shows that most respondents were 36 years old and above. The study demonstrates that the typical cement buyer is a male who is 36 years old and above who bought cement for home renovations. In South Africa, the average age of first-time home ownership is typically around 34 – 35 years old according to businesstech.co.za, (2021), which is in line with the results of this study for someone who would be building or renovating their home. The results are illustrated in table 5.2.

Table 5. 2: Age group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. 18 - 20 years old	2	1.0	1.0	1.0
	2. 21 - 25 years old	18	8.8	8.8	9.8
	3. 26 - 30 years old	49	24.0	24.0	33.8
	4. 31 - 35 years old	39	19.1	19.1	52.9
	5. 36 years old and above	96	47.1	47.1	100.0
	Total	204	100.0	100.0	

Source: Author’s own construction (2022)

5.2.4 Provincial residence

The reason for asking this question was to find out if the different regions had preference for a particular brand over another. Location is an important consideration when it comes to the purchasing of cement, because once it has been produced, it is either sold in 50Kg bags or bulk tankers and is mainly transported via road on trucks and the distance from the factory to the end consumer has a significant influence on the price and the brands available inland versus coastal. The provincial residence of the respondents is outlined in Table 5.3.

Table 5. 3: Provincial residence

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Gauteng	124	60.8	60.8	60.8
	2. North – West	60	29.4	29.4	90.2
	3. Mpumalanga	4	2.0	2.0	92.2
	4. Limpopo	2	1.0	1.0	93.1
	5. Free State	4	2.0	2.0	95.1
	6. Northern Cape	3	1.5	1.5	96.6
	7. Western Cape	3	1.5	1.5	98.0
	8. KwaZulu – Natal	1	.5	.5	98.5
	9. Eastern Cape	3	1.5	1.5	100.0
	Total	204	100.0	100.0	

Source: Author’s own construction (2022)

5.2.5 Selection of cement brand

It was important to obtain the preferred brand of the respondents, many respondents had purchased PPC, which is South Africa’s oldest and the largest manufacturer. Overall, most of the responses went to the major and established brands in the country. This indicates that the major brands do have good brand image amongst the consumers, however a small portion of respondents did mention that they preferred the cheapest option when it came to cement. Table 5.4 outlines where the respondents usually purchase their cement.

Table 5. 4: Selection of cement brand

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. AfriSam	33	16.2	16.2	16.2
	2. Cemza	2	1.0	1.0	17.2
	3. Lafarge	48	23.5	23.5	40.7
	4. Mamba	4	2.0	2.0	42.6
	5. Sephaku	26	12.7	12.7	55.4
	6. PPC	81	39.7	39.7	95.1
	Other	10	4.9	4.9	100.0
	Total	204	100.0	100.0	

Source: Author’s own construction (2022)

5.2.6 Store where cement was purchased

Bagged cement is distributed through retail channels to cement end-users, while bulk users such as ready-mixed concrete manufacturers purchase cement directly from the cement plant for various construction activities (Sephaku, 2022a). In 2017, the retail hardware sector was experiencing negative growth at 0.7% (Statssa, 2018). However, between August and October 2020, hardware retailers recorded 11% increase in sales compared with the same period in 2019, as mentioned by Smit (2021). This occurred as more people were working from home during the Covid 19 pandemic. Most respondents purchased their cement from Cashbuild, which is one of South Africa's largest hardware retailers. Many respondents who purchased cement from Cashbuild bought it for home building, whereas most participants who bought their cement from Builders Warehouse used it for home renovations. Table 5.5 illustrates the responses.

Table 5. 5: Store where cement was purchased

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Cashbuild	91	44.6	44.6	44.6
	2. Builders Warehouse	54	26.5	26.5	71.1
	3. Buco	5	2.5	2.5	73.5
	4. Build It	27	13.2	13.2	86.8
	5. Leroy Merlin	4	2.0	2.0	88.7
	6. Other	23	11.2	11,2	100
	Total	204	100	100	100

Source: Author's own construction (2022)

5.2.6 Reason for purchasing cement

The reason for asking this question was to ascertain why consumers bought the cement. The retail hardware sector experienced a boom during the Covid 19 pandemic due to home improvements and do-it-yourself (DIY) activities by consumers. As illustrated in table 5.6, most respondents bought cement for home renovation. According to whoownswhom (2023) the most recent records available show an increase in the value of building plans, and new additions, an increase largely reflecting increased spending on DIY projects, additions and alterations, and growth in the informal building sector. The observation that additions and alterations are doing better than new builds indicates an increased financial pressure on South African consumers.

Table 5. 6: Reason for purchasing cement

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	.5	.5	.5
	1. Home building	62	30.4	30.4	30.9
	2. Home renovation	118	57.8	57.8	88.7
	3. Business	23	11.3	11.3	100.0
	Total	204	100.0	100.0	

Source: Author's own construction (2022)

5.3 Hypothesis Discussion

The study outlined six antecedents of brand preference which included brand image, perceived product quality, influenced of others, price, packaging, and sales promotion, and the outcome variables were word-of-mouth and purchase intention.

5.3.1 Hypothesis 1

Brand image is an important antecedent to brand preference as the second stage of the buying process is information search (Jha & Dahal, 2020). According to Raza, Frooghi, Abd Rani and Qureshi (2018), the decision to purchase a brand relies on its image in that market. Furthermore, the authors state there is an effect between brand value and buyers' discrimination, in other words, consumers tend to favour brands that have a more grounded image in the market, and this can occur despite whether the product or service is quality or not quality (Raza et al., 2018). The results of the study found a positive and significant relationship between brand image and brand preference. The results of this study are consistent with the results of Kumar Mishra (2019) and Bonney et al. (2022) which found that brand image has a significant and positive influence on the selection of cement brands. The results of the study are also consistent with the findings of Kim and Chao (2019) which found that brand image positively influences brand preference. Brand image also ties in strongly with brand equity as Ansary and Nik Hashim (2018) found that brand image has a strong influence on brand equity. The similarity between this study and the one that was conducted by Bonney et al. (2022) is that both in Ghana and South Africa, the oldest cement brands in the countries is what respondents preferred or most likely purchased, which is PPC in South Africa and Ghacem in Ghana.

5.3.2 Hypothesis 2

High perceived product quality can sway people away from inferior competitors and back to their preferred products, retaining and attracting both current and new customers (Hanifati & Salehudin, 2021). The study found a significant positive relationship between perceived product quality and brand preference. In terms of perceived product quality, the results of the study matched results of the studies conducted by Roy and Malhotra (2018) and Kumar Mishra (2019). In the study conducted by Kumar Mishra (2019), quality was ranked as the most important factor followed by brand image. The study that was done by Jha and Dahal (2020), also found that quality was the most important factor, followed by price. In the study of Roy and Malhotra (2018), which explored the marketing mix variables that influenced brand preference of milk, the study found that quality was the second most important variable when it comes to influencing brand preference. The findings of this study are also the same as the results of Vazifehdoost and Negahdari (2018), which found a positive relationship between perceived quality and brand loyalty.

5.3.3 Hypothesis 3

The importance of price is often attributed to its impact on consumers' decision-making in actual purchases and their choices of products and services (Cham et al., 2020). When purchasing power is weak, demand for many products becomes price elastic (Kaswengi & Lambey-Checchin, 2019). Commodities have a standard quality, customers have more freedom to acquire from any producer, with price being the most important factor (Samudro et al., 2018). In terms of price, the study conducted found that price has significant and positive influence in the selection of cement brands. These findings are like the results that were obtained by Roy and Malhotra (2018), who investigated the factors which impact the brand preference of milk. In the study, the authors found that price was the most important marketing mix variable that that influenced preference. The results of the study are also the same as the results that were obtained by Lema and Negash (2018) which found that price had a significant influence on the selection of bottled water.

5.3.4 Hypothesis 4

Packaging is the first contact between the brand and the consumer and is a factor in purchase decisions (Jara, Cliquet, & Robert, 2017). Packaging's outer appearance can influence consumer's perceptions and attitudes towards products (Baccarella, Maier, & Voigt, 2021). The results of the study conducted supported the relationship between packaging and brand preference, however the relationship was not significant. This is different to the results that were obtained by Bonney et al. (2022), which found a positive and significant relationship between packaging brand preference in the Ghanian cement industry. The results of Setiowati and Liem (2018) found that attitude toward visual packaging design does not show any significant relationship toward brand preference. The same results were also obtained by Swasty, Putri, Koesoemadinata and Gunawan (2021) in their study which investigated the effect of different packaging colour schemes on perceptions and food product preference, product trial, and purchase intention. The authors found that when it comes to packaging, different colour schemes do not have a significant impact on product preference, purchase intention or product trial. For this study, 95.1% of respondents selected the major brands. As outlined by hypothesis 4, packaging does influence brand preference, however the influence is not significant which could be attributed to the many different brands to choose from.

5.3.5 Hypothesis 5

In terms of subjective norms or the influence of others and its impact on brand preference, the study's results revealed a positive and significant relationship between the influence of others and its impact on brand preference. Family has been explored as a source of brand value and showed that through associations and awareness, family members contribute to customer loyalty and overall brand equity (Rambocas et al., 2018). The results in this study are like the results in the study that was conducted by Núñez-Fernández et al. (2021) which found a positive relationship between subjective norms and purchase intention. The results differed from the results obtained by Rodrigo et al. (2019) which did not find a postive relationship between subjective norms and purchase intention. In the study that was conducted by Elgebali (2020), which explored the attitudes and brand awareness of consumers towards purchasing branded food products, the study found that relatives, friends, and reference groups impacted awareness when purchasing the products. The results of this study are like those that were obtained by Elgebali (2020), Kumar Mishra (2019) and Jha and Dahal (2020) who found that the influence of contractors does impact brand preference when it comes the selection of a cement brand.

5.3.6 Hypothesis 6

Sales promotions are a mechanism employed by retailers to fulfil short term objectives (Iranmanesh et al., 2017). The questions measuring the sales promotion construct asked if participants had purchased cement when there is a price discount or if promotional gifts influenced their decision; the construct had a Cronbach's alpha value of 0.688, which means the questions were measuring what was intended. The results of the study supported the relationship between sales promotion and brand preference, however the influence of sales promotions on brand preference are not significant. When compared to the findings of Langga (2021), the author found that sales promotions do not have a significant influence towards brand loyalty, brand awareness or brand association. Although the findings of Akbar et al. (2020) found a significant relationship between sales promotion and impulse buying, when considering cement and the questions from the research instrument which included price discounts, although price is an important factor, retail consumers do not generally purchase cement because there is a discount. Most respondents purchased cement for home renovation, followed by home building and lastly, for business purposes. The research discovered that sales promotions have an insignificant influence on brand preference in that context.

5.3.7 Hypothesis 7

Purchase intentions are the consumers' inclination towards a particular brand (Islam & Hussain, 2022). A favourable attitude towards a brand will lead to positive purchase intention and acquisition of the brand, likewise an unfavourable attitude towards a brand will increase customers' intentions to switch providers (Rambocas et al., 2018). The study found a significant positive influence between brand preference and purchase intention. The findings of the study are like the results of Junarsin et al. (2022) which found a positive relationship between brand preference and purchase intention. Another which had the same results, is the study of Briliana and Andrianto

(2019) which found a positive relationship between brand preference and purchase intention. Other authors having the same results include Castillo, Flores, Sanchez, Yusay and Posadas (2022) and DAM (2020), in which the authors explored the elements that customers evaluate when it comes to smartphone brands that can influence their purchases.

5.3.8 Hypothesis 8

Word-of-mouth communication is perceived as a credible information source (Cham et al., 2020). The credibility of a brand is an important factor for enhancing word-of-mouth and reducing consumers' switching behaviour (Shankar, Jebarajakirthy, & Ashaduzzaman, 2020). Consumers, who are engaged, participate in the sharing of their experiences with the brand which plays a vital role in the development of new products and services (Kwon, Jung, Choi, & Kim, 2020). In a study conducted by Hilal (2019), the author found that word-of-mouth significantly contributes towards brand equity within fashion clothing stores. The findings of this study are consistent with those of Rambocas et al. (2018), which discovered that word-of-mouth is a result of the relationship between brand equity and consumer satisfaction. The results of this study are also the same as the results that were obtained by Chokpitakkul et al. (2020) which a positive relationship between brand loyalty and word-of-mouth.

5.4 Chapter 5 summary

In conclusion, chapter 5 was a discussion of the results which included the respondents' profiles and hypothesis discussion. The research looked at many authors discussing branding across different product categories and explored their findings in relation to the factors that were the focus of this study. This research study contributes to branding theory by offering and testing a model of the antecedents of brand preference. The study showed that there is a wide range of factors that contribute towards brand preference as well as factors that do not. Brand image, perceived product quality, and the influence of others contribute towards brand preference. However, sales promotion and packaging do not play a significant role when it comes to influencing brand preference. The following chapter is the recommendations and conclusions of the study.

Chapter 6: Conclusions and Recommendations

6.1 Introduction

This chapter contains the recommendations and conclusion of the study. Furthermore, this chapter discusses the implications of the study and the recommendations.

6.2 Conclusion of the study

This research study focused on the antecedents and consequences of brand preference in the South African cement industry. Two theories were explored in the study which are the Theory of Planned Behaviour and the Brand Equity theory. The research employed a quantitative research design and used simple random sampling. The study proposed a conceptual framework, and a self-administered questionnaire was used to collect data and the data was analysed through structural equation modelling. The following latent variables were statistically proven to have a positive and significant influence on brand preference in the cement industry, which are, H1 – Brand image, H2 – Perceived product quality, H3 – Price and H5 – The influence of others. Furthermore, the study found that brand preference positively and significantly influences purchase intention and word-of-mouth which were the outcome variables. The study did find that hypothesis 4, packaging, and hypothesis 6, sales promotion, do not have a significant influence on brand preference.

The findings of this research somewhat agree and disagree with the sentiments of the various authors, for example, Punniyamoorthy, Mahadevan, Shetty and Lakshmi (2011) stated that consumers find it difficult to differentiate between commodities such as cement due to a lack of brand names. This was however, not the case in this study that found that brand image plays an important role in terms of brand preference in the cement industry. However, when one considers the fact that packaging and sales promotion, which are two core components of the marketing mix, do not play a significant role when it comes to brand preference in the cement industry that demonstrates that cement is a bulk commodity and although consumers are aware of the different brands, they are not too concerned about the packaging and they will only purchase cement when they need it, regardless of sales promotions.

6.3 Implications of the study

The purpose of the study was to provide an answer to two questions: What are the causes of brand preference in the South African cement industry, and what are the effects of brand preference in the South African cement industry? The study's implications are two-fold, which are the theoretical and practical implications.

6.3.1 Theoretical implications

The theoretical groundings of the study are the Theory of Brand Equity and the Theory of Planned Behaviour. The Theory of Brand Equity consists of brand awareness, perceived quality, brand loyalty and brand associations (Aaker, 2009). In addition, Aaker (2009) states that the brand equity dimensions are interconnected, for example, perceived quality may be influenced by brand awareness because a visible name is likely to be good quality or by associations, for example, a spokesperson would only endorse a quality product and a loyal customer would not like poor product quality. Brand equity provides value to consumers by increasing a consumer's confidence in the purchase decision and also enhances the processing of information by consumers (Aaker, 2009). The study demonstrated that 94% of the respondents are aware of the major cement brands in South Africa which are PPC, Lafarge, AfriSam, and Mamba Cement. The awareness influenced the major brand equity elements which are brand image, perceived quality, and the outcomes where purchase intention and word-of-mouth are indicators of loyalty. The study added to the Theory of Planned Behaviour by demonstrating that subjective norms play an important role in purchase decision in the cement industry as 74% of respondents agreed that they are influenced by reference groups and 26% disagreed to being influenced by family/friends and contractors when it comes to purchasing cement. The study demonstrated that the Theory of Brand Equity and the Theory of Planned Behaviour do not exist in isolation from each other.

6.3.2 Practical Implications

This study explored various factors that impact the brand selection when it comes to cement. The study found that sales promotion and packaging do not influence brand preference when it comes to cement. However, there are factors that marketers in the industry should focus on. For example, the influence of others and brand image play major roles when it comes to influencing brand preference. Marketers should focus on activities that enhance brand image and communicate perceived quality. The study also revealed that there is significant customer loyalty when it comes to cement, which is indicated by word-of- mouth.

6.4 Recommendations for future research

This research has important consequences for brand strategies, for example, it confirms that brand equity elements are connected. This study was conducted in the cement industry and the results may be different in another product category. Future research studies should focus on antecedents of brand preference in industries that sell products that are viewed as commodities, such as the South African retail fuel industry. According to the South African Petroleum Industry Association (SAIPA) the major players in the South African petroleum industry include BP Southern Africa, Astron Energy, Engen Petroleum, PetroSA, Sasol Oil, Shell South Africa, and Total Energies South Africa. They run distribution centres and storage terminals all around the nation (www.sapia.org.za, 2023). The challenges facing the retail fuel industry in South Africa are like those facing the South African cement industry. According to fuelretailers.co.za (2021) the industry is experiencing declining volumes due to people spending less on travelling, margins being eroded. Furthermore, there interesting dynamic driving the evolution of the industry, factors such as alternative fuels, the introduction of electric and hybrid vehicles. All these factors are going to make it vital to understand the drivers and outcomes of brand preference in the South African retail fuel industry.

6.5 Limitations of the study

The study used a quantitative research design and quantitative research explains phenomena by collecting numerical unchanging detailed data that are analysed using mathematical based methods and SPSS was used in this research. The limitation with the quantitative design is that it can be limited in its pursuit of concrete, statistical relationships and ignore important human elements (Mohajan, 2020). The study only used self-administered questionnaires and perhaps more insight could have been gained with interviews into respondent’s preference of various cement brands. For example, most respondents were neutral when it came to packaging and if the study was qualitative, the researcher could have discussed further with the respondents to understand why they were neutral with regards to packaging.

Although there were participants from all nine provinces in South Africa, 90.2% of respondents resided in only two provinces, which were the Gauteng and North–West province. Valuable information could have been gained from other provinces, as the major cement manufactures operate in more than two provinces.

6.6 Suggestion for future research

The areas that have been covered in this study have outlined that although there is an anticipated construction boom in the South African construction sector largely driven by the government investment in infrastructure, the current reality is that the industry is in a dire state. The reasons for this include reduced spend on infrastructure by the government, the slow implementation of proposed big infrastructure projects by government and economic pressure on consumers reducing spend on non-essential products. All these factors have created an environment where there is excess supply of cement and little demand to meet it and this has intensified competition amongst cement manufacturers.

This research revealed that there is more to brand preference than the antecedents that were explored in the study, there are other elements to consider that were outlined in the literature reviewed, elements like trust and satisfaction which act as moderating variables. Trust is the core of the exchange between brands and consumers (Anantharaman et al., 2023). Furthermore, It is difficult to satisfy consumers without first gaining their trust. According to Anantharaman et al. (2023) when consumers are satisfied with the product or brand, they are more inclined to spread positive word-of-mouth and make repeat purchases. Future studies should develop a conceptual framework that has trust and satisfaction as moderators when it comes to determining brand preference and its impact on word of mouth. Moreover, emotion has been shown to play an important role in influencing customers' purchase decisions {Wang, 2020 #304}.

The studies of Kumar Mishra (2019) and Bonney et al. (2022) both investigated product availability as a factor that influenced brand selection in their respective countries. Although the respondents in this study were asked where they purchased their cement, the study did not explore product availability or investigate the proximity to hardware stores where the individuals were located. Cement is typically not a product that travels well due to transportation costs. The further away customers are from the manufacturer plants the more expensive the product becomes. Some brands are typically not available in certain regions. For instance, Sephaku manufacturing facilities are on land (in the provinces of the North West and Mpumalanga), so you typically won't find Sephaku cement in coastal areas because it wouldn't be commercially viable for the manufacturer to do so. The level of product accessibility and proximity to hardware stores that can affect brand preference in the cement sector can be explored in more detail in future studies.

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Appendices

Appendix A: Ethical Clearance Certificate

Graduate School of Business Administration
University of the Witwatersrand, Johannesburg

Wits Business School Ethics Committee
Constituted under the University Human Research Ethics Committee (Non-Medical)

Ethics Clearance Certificate

Ethics protocol number: WBS/SM675714/812

This certificate is only valid with a legitimate ethics protocol number and signed by the Researcher (below).

Project title	Antecedents and consequences of brand preference in the cement industry
Investigator / Researcher	Mr Goitumetswe Pitso
Nature of Project	MM (Strategic Marketing)
Decision of the Committee	Approved, provided stakeholders and participants are guaranteed anonymity and confidentiality.
Issue Date of Certificate	2022-05-20
Expiry date	Date of submission of the project / research report
Chairperson	Prof Anthony Stacey ☎ +27 11 717 3587 +27 82 880 4531 anthony.stacey@wits.ac.za

Declaration by Researcher

One copy must be signed by the Researcher and returned to the Chairperson of the Wits Business School Ethics Committee.

I fully understand the conditions under which I am authorized to carry out the abovementioned research and I guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I undertake to resubmit the protocol to the Committee.

Signature

Date: 20 May 2022

Appendix B: Participation Information Sheet

PARTICIPATION INFORMATION SHEET

Dear Sir/Madam

My name is Goitumetswe Pitso, and I am a Master of Management student in the field of Strategic Marketing at Wits Business School, Johannesburg. In partial fulfilment of my degree, under the supervision of Dr Neo Ligaraba, I am required to conduct a research study and collect data through an online questionnaire/survey. The title of my research is **"The antecedents and consequences of brand preference in the cement industry.** The study's aim is to find out what factors influence customer cement brand choice, which leads to purchase intent and word-of-mouth. I would like to invite you to participate in this study and complete this questionnaire/survey, which can be accessed through the attached link: Link https://forms.gle/yrNdgsMXfaJBBxTr8

The questionnaire should take about 5 – 10 minutes to complete and it consists of approximately 33 questions. There are no right or incorrect responses, and your response is significant to the study. The survey is anonymous and confidential. You do not need to give your name or ID number, so anonymity and confidentiality are assured. Whether you choose to participate or not, your involvement is entirely voluntary and comes with no risk, punishment, or loss of benefits. We consequently ask that you please provide an honest and best effort response to all inquiries.

As participation in this study is voluntary, you may withdraw at any time.
If you have any questions afterwards about this research, feel free to contact me on the details listed below. If you have any queries, concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (non-medical), telephone + 27(0)11 717 1408, email Shaun.Schoeman@wits.ac.za

Thank you in anticipation of your willingness to participate in the study.

Researcher: Goitumetswe Pitso

675714@students.wits.ac.za | 078 521 200

Supervisor: Dr Neo Ligaraba
neo.ligaraba@wits.ac.za | 011 717 8299

Appendix C: Research Instrument

Screening question:

Have you purchased cement in the past 12 months?

Yes	1
No	2
If no, please close interview	

Section A - Biographic questions

A1 – Please Indicate your gender

Male	1
Female	2
Prefer not to say	3

A2 - Please indicate your age group

18 – 20 years old	1
21 – 25 years old	2
26 – 30 years old	3
31 – 35 years old	4
36 years old and above	5

A3 – Please indicate which province you reside in

Gauteng	1
North - West	2
Mpumalanga	3
Limpopo	4
Free State	5

Northern Cape	6
Western Cape	7
KwaZulu – Natal	8
Eastern Cape	9

A4 – Which brand of cement are you most likely to purchase

Afrisam	1
Cemza	2
Lafarge	3
Mamba	4
Sephaku	5
PPC	6
Other	7
If other, please specify	

A5 – Which store do you usually purchase your cement

Cashbuild	1
Builders Warehouse	2
Buco	3
Build It	4
Leroy Merlin	5
Other	6
If other, please specify	

A6 – What was your reason for purchasing the cement

Home building	1
Home renovation	2
Business	3

Section B

In this section, please indicate the extent to which you disagree or agree with each of the following statements. You can indicate the extent to which you agree or disagree with the statement by clicking the corresponding number in the 5-point scale ranging from: (1) = Strongly disagree; (2) = Disagree; (3) = Neutral; (4) = Agree; (5) = Strongly agree

The questions below are based on the brand of cement which you selected in A4

1. **Influenced by others**

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
SN 1	People who are important to me (friends/family/ contractor/ engineer) think that I should purchase this cement brand					
SN 2	Friends/family/contractor/engineer approve my purchasing of this cement brand					
SN 3	Friends/family/contractor/ engineer want me to purchase this cement brand					

2. **Perceived Product Quality**

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
PQ 1	Compared to other brands of cement, this cement brand is good quality					
PQ 2	Compared to other brands of cement, this cement brand offers me consistent quality					
PQ 3	Compared to other brands of cement, this cement brand is trustworthy					

3. **Price**

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
PP 1	For me to stop purchasing this cement brand, its prices would have to rise a little more					
PP 2	I am willing to pay a higher price for this cement brand than other cement brands in this category					
PP 3	I am willing to pay for my favourite cement brand even if the price increases over time					

4. **Brand image**

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
BI 1	This cement brand is reliable					
BI 2	This cement brand is regarded as the best benchmark in terms of cement					
BI 3	This cement brand is well established					
BI 4	This cement brand has a good reputation					

5. **Sales promotion**

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
SP 1	I only purchase cement when there is price discount					
SP 2	I tend to buy more than usual when offered a price discount on cement					
SP 3	I am influenced by promotional gifts from a cement brand to buy that cement brand.					

6. **Packaging Material**

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
PM 1	I prefer this cement brand due to its high-quality packaging material					
PM 2	The packaging of this cement brand attracts me.					
PM 3	The quality of packaging material of this cement brand means the product is better					
PM 4	The quality of packaging material of this cement brand does not matter to me					
PM 5	I think it's a renowned cement brand due to its packaging.					

7. **Word-of-mouth**

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
WM 1	I would recommend this brand of cement to friends					
WM 2	I would recommend this brand of cement to family and relatives					
WM3	I would recommend this brand of cement to others on mass media promotional campaigns					
WM 4	I would recommend this brand of cement based on reputation					

8. **Purchase intention**

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
PI 1	I feel good about my decision to purchase cement from this brand					
PI 2	I will positively recommend this cement brand to other people					
PI 3	I frequently purchase this cement brand					
PI 4	I intend to purchase again from this brand in the future					
PI 5	Overall, I am satisfied with my purchase of cement from this brand					

9. Brand Preference

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree

BP 1	Although another brand has the same features, I would prefer to purchase from this brand of cement					
BP 2	If another brand shares the same functions, it seems smarter to purchase from this brand of cement					
BP 3	Although there is another brand as good as this one, I prefer to buy from this brand of cement					

Thank you for your participation!

Appendix D: Standardised regression weights

			Estimate
BP	<---	SN	0,247
BP	<---	PQ	0,459
BP	<---	PP	0,205
BP	<---	BI	0,431
BP	<---	SP	-0,072
BP	<---	PM	0,049
PI	<---	BP	0,906
WM	<---	BP	0,887
SN3	<---	SN	0,851
SN2	<---	SN	0,801
SN1	<---	SN	0,831
PQ3	<---	PQ	0,76
PQ2	<---	PQ	0,852
PQ1	<---	PQ	0,866
PP3	<---	PP	0,905
PP2	<---	PP	0,8
BI4	<---	BI	0,79
BI3	<---	BI	0,845
BI2	<---	BI	0,736
BI1	<---	BI	0,784
SP3	<---	SP	0,681
SP2	<---	SP	0,674
SP1	<---	SP	0,604
PM3	<---	PM	0,909
PM2	<---	PM	0,831
PM1	<---	PM	0,721
PM5	<---	PM	0,661
WM3	<---	WM	0,636
WM2	<---	WM	0,872
WM1	<---	WM	0,81
WM4	<---	WM	0,806
PI3	<---	PI	0,484
PI2	<---	PI	0,864
PI1	<---	PI	0,756
PI4	<---	PI	0,765
PI5	<---	PI	0,697
BP3	<---	BP	0,517
BP2	<---	BP	0,516
BP1	<---	BP	0,659

Appendix E: Turnitin report

Turnitin 20 October Attempt 2.pdf

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