UNIVERSITY OF KWAZULU-NATAL

The association between brand equity and consumer perceptions of smartphones among millennials in Pietermaritzburg

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DECLARATION

I Shanice Abegail Mary Oliver declare that

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The *unalome* symbol has been a true epitome of my journey when completing this Master of Commerce in Marketing Management degree. This symbol has been a true reflection on the path that is not always *straight, perfect, or even in the "right" direction. The path has been filled with missteps, lessons, learning,and suffering*.

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"*All things are possible to them that believe"_ Mark 9 :23.*
All things work together for the good, and if you said it, then it must true.

ABSTRACT

Mobile technologies, particularly smartphones, have become an essential part of millennials' lives. It is imperative to understand the fundamental building blocks of the influence that brand equity and consumer perceptions have on the purchasing decisions made by millennials in the long haul. Therefore, offering and designing attractive smartphones is crucial to increasing sales and revenue in the mobile industry, especially because the purchasing decision of millennials is still indecipherable and hybrid.

The purpose of this study is to determine the key brand equity associations between consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg) campus. This study employed a quantitative research approach. A sample of 165 students, between the ages of 24 and 39, who have a smartphone were selected to represent the population.

The data collection process was conducted by means of analysing the respective constructs of this study. Furthermore, the Statistical Package for Social Science (SPSS) was employed in this study. Descriptive statistics were presented in the form of graphs and tables, while cross tabulations and chi-square tests were used to present inferential statistics. Lastly, the essence of reliability was tested through Cronbach Alpha statistics. The findings of the study indicated that all key concepts were positively correlated, meaning that a relationship exists between the variables. There were moderate correlations between brand awareness and brand association (r=.537), brand loyalty (r=.518), brand image (r=.558), perceived quality (r=.604), product packaging (r=.649), online and offline presence (r=.538) as well as overall brand equity (r=.540). Weak correlations were shown between brand awareness and product pricing (r=.317) as well as brand values and ethics (r=.354). On the other hand, brand association was highly correlated with brand loyalty (r=.806), brand image (r=.745), perceived quality (r=.722), and overall brand equity (r=.744).

The results obtained in this study had revealed that the overall brand equity in the smartphone industry continues to grow rapidly and the offering in the market becomes more multifaceted. Therefore, it is imperative that organisations incorporate more than just the handset and the whole package from software systems, applications, and network services. Most significantly, it is imperative to understand the fundamental building blocks of the influence that brand equity and consumer perceptions has on the purchasing decisions amongst millennials in the long haul. Hence, offering and designing attractive smartphones are crucial to increase sales and revenue in the mobile industry, especially since smartphones' purchasing decision among millennials is still indecipherable and hybrid.

Keywords: Brand equity, consumer perceptions, smartphones, millennials, University of KwaZulu-Natal, Pietermaritzburg, brand awareness, brand association, brand image, perceived quality, brand loyalty, product pricing, product packaging and brand values and ethics.

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CHAPTER ONE: INTRODUCTION

1.1 Introduction and Background of the Study

Brand equity has increasingly been considered to be vital for organisational success and sustainable growth across industries (Kim and Kim, 2005). Dumitriu, Militaru, Deselnicu, Niculescu, and Popescu, (2019) adds the need for proper brand equity understanding has become a key element within different industries. In today's cost-conscious society, consumers differ in their awareness of brands and are influenced by diverse images of particular brands (Tekin, Yiltay and Ayaz,2016). They often select a variety of products or services in the marketplace that vary insignificantly in cost or functionality (Tekin, Yiltay and Ayaz,2016). Generally, organisations focus on evoking strong emotions in their consumers towards their brands. However, not all brands can grow into meaningful objects to consumers, which is why brands, on a psychological level, can become symbolic functions in the consumer's mind. A major purpose of a brand is to ensure the consumer can align with the proposition set and the strong personality presented through psychological or social cues (Garmaroudi, King and Lu, 2021). Consumers represent an important part of the local, national, and global financial sector. Therefore, in order to succeed in the ever-changing and competitive environment, marketers need to be well-informed about consumer needs and wants, consumer perceptions, and how the consumer functions (Ginter, Duncan and Swayne,2018).

According to Tekin, Yiltay and Ayaz (2016), customers are affected by numerous emotional, societal, and personal factors which impact their perception of a brand. Hence, examining the association between "what we buy" and "why we buy it" is vital in sustaining brand equity for organisations. As mentioned above, a brand performs an important function in customer decision making. Aaker (1996a) in Shariq, (2018) defines brand equity as a putting together of assets and liabilities linked to a brand. This includes the name or symbol that can have a favourable or unfavourable impact on the value of a product. Brand equity is believed to be one of the most controversial marketing concepts to arise in the 1980s. Despite this, brand equity can have either a positive or negative impact on marketers. Keller, Parameswaran and Jacob (2011) suggest that brand equity has promoted the importance of developing marketing strategies and has assisted in implementing sound managerial decisions and research activities for organisations. Furthermore, brand equity has been evaluated from different angles and perspectives. However, a common viewpoint on how to conceptualise and measure brand equity has not yet been achieved.

According to Muigai (2017), brand equity consists of several assets that can either increase or decrease the value of a product or service for both the organisation and the customer. Anjarsari (2020) proposes that these assets include brand awareness, brand association, perceived quality, brand image, and brand loyalty. Most importantly, for brands to survive in the market, Andai (2016) proposes that marketers distinguish between the value of the brand and the characteristics of the brand; regarding what makes them tick as well as the value the brand is able to retain in the consumer mind. This demonstrates how marketers should use consumer behaviour to gain insights into brand equity.

According to Nyame-Asiamah and Kawalek (2020), consumer behaviour is about human reactions in a profit-making domain. According to Alvino, Constantinides, and Franco (2018), people are drawn to products that meet their needs and expectations while also saving them money. Products can be categorized into durable, non-durable, consumer and specialty products. For example, Nyame-Asiamah and Kawalek (2020) show that our consumer purchasing habits are influenced by our perceptions, self-concepts, social and cultural backgrounds, upbringing, lifestyle, personality, attitudes, beliefs, opinion leaders, and reference groups. What is portrayed by the media also has an influence on what we choose to buy. Therefore, the survival of an organisation is solely dependent on the in-depth knowledge a business has of its target audience.

In today's competitive market, manufacturers must create innovative products that meet the needs of their customers. As a result, manufacturers must consider the process of consumer decision-making. East, Singh, Wright, and Vanhuele (2021) argue that consumer behaviour includes both buying behaviour and the actions that precede and follow the purchase of a product or service. It is believed that extensive knowledge of consumer behaviour improves marketers' understanding of consumers' purchasing behaviour as well as the way the environment shapes the consumers' decision-making process. A marketer must understand the dynamics that influence how individuals or groups buy products and services in addition to the consumer decision-making process.

The smartphone is becoming the everyday configuration of mobile devices in the telecom industry (Cecere Corrocher, and Battaglia,2015). According to Muigai (2017), smartphones have been in the market since 1993 but they only rose to prominence at the end of 2006 with the success of the Blackberry. In 2007, Apple was launched, and the first version of the iPhone was developed shortly after (Muigai, 2017). The following year, in June 2008, Samsung launched the Samsung Instinct, which was a competitor of iPhone (Muigai, 2017). As a result, market competition has been robust amongst well-known establishments, with the well-developed organisations not taking up the limelight. According to Muigai (2017), the present tensions over copyrights and designs between Apple and Samsung are clear indications of smartphone manufacturers competing as respective market leaders.

According to Dwivedi, Ismagilova, Hughes, Carlson, Filieri, Jacobson, Jain, Karjaluoto, Kefi, Krishen, and Kumar, (2021), organisations are presented with greater opportunities to develop value creations and brand positioning strategies due to consumers becoming more susceptible to modern technologies and digital interactions. The recent studies of MacKenzie Jr. and Scherer, (2019), Nicholas, Jamali, Herman, Watkinson, Abrizah, Rodríguez-Bravo, Boukacem-Zeghmouri, Xu, Świgoń, and Polezhaeva (2020), Muigai (2017) and others have highlighted that millennials are ranked as the largest and highest cohort when it comes to the usage of smartphones and social media (Bizirgianni and Dionysopoulou, 2013). According to Muigai (2017), millennials are viewed as realistic consumers with sound consumption knowledge and are constantly on the lookout for products or services that they perceive to be the most valuable to them. Therefore, conducting research on this cohort and the relationship it has established with various brands is important for the appreciation of the integral role that millennials play as active consumers in the marketplace. Consequently, organisations are required to shift focus onto creating positive representations of brands and aligning the brand with millennial tastes, likes, dislikes and selfimage. Furthermore, generating consumer loyalty as an element of strategic brand management should be a key factor as the millennials use brands to satisfy needs and promote individualism. Henceforth, this study aims to address, and fix, the outstanding knowledge by trying to answer the question: is there an association between brand equity and consumer perceptions of smartphones among millennials in Pietermaritzburg?

1.2. Problem Statement

Organisations put emphasis on the financial cost of brand equity. This is done by the organisation assessing whether the efforts of brand-building have aligned with the financial demands. These figures do not expose the consumers' understanding and the way in which they act, which is especially important for creating strong brands. Therefore, better supervision techniques are required in an organisation to build brand equity and assess how consumers react to marketing efforts by the organisation (Andai, 2016).

In South Africa, according to Statista (2018), there are approximately 20 to 22 million smartphone users which constitutes a third of South Africa's population. The absolute figure of mobile connectivity is higher at more than 90 million (Statista, 2018). According to Statista (2018), by the year 2023, South Africa will have over five million added smartphone users. Business Tech (2018) further elaborated on South Africa's remarkable growth as well as the substantial increase of internet usage since 2015, whereby South Africa experienced a 17-percent-point increase.

Previous studies on brand equity have been carried out worldwide. For instance, on a global scale companies have focused on the impact that brand equity has on various industries including L'Oréal skincare products, Louis Vuitton-Moet Hennessy, the clothing sector, and the fast-moving consumer goods sector(Tekin, Yiltay and Ayaz,2016). A local example, Shayamunda (2015) focused on "consumer-based brand equity of luxury car brands in Pietermaritzburg: a gender perspective". Furthermore, Ijumba (2016) conducted a study on the factors affecting choice of, and satisfaction, with mobile phones. As a result, there are current studies on brand equity, but they do not concentrate on brand equity in consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg). This is the gap that this study seeks to fill by investigating the relationship between brand equity and consumer perceptions of smartphones among millennials, specifically students at the University of KwaZulu-Natal in South Africa (Pietermaritzburg).

The reviewed studies show that there has been research conducted on the conceptualisation and operationalisation of brand equity and the influence it has on consumer perception. However, there are gaps that have been left open. Additionally, there is also a limited number of articles that discuss techniques that could be utilised to build stronger brands, especially from a national or international viewpoint. This highlights the need to move beyond the examination of brand equity measurements or different properties that sum up the importance of brand equity in an organisation. Therefore, a more holistic, advanced, and actionable model could be developed to successfully rationalise different countries and enable the examination of the impact brand equity has on consumer perception of smartphones among millennials (Mariani and Wamba 2020). Furthermore, previous research, specifically a case study of University of KwaZulu-Natal (Pietermaritzburg) students, did not clearly assess the relationship between brand equity and consumer perceptions of smartphones among millennials. Conducting this research at the University of KwaZulu-Natal (Pietermaritzburg) will aid in the understanding of the huge contributions that millennials make to the market. Therefore, it is of great significance to evaluate how the students are influenced by brand equity in the proliferated market that smartphones constitute in South Africa. Such insights will help align strategies with mass-media ventures and enhance the development of communication and marketing strategies which smartphone companies can adopt to create an optimal placement of the organisation's brand in the eyes of its stakeholders and the underlining reasons students prefer one brand over another is presented in this research.

1.3. Research Purpose

The purpose of this study is to determine the key brand equity associations between consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg) campus.

1.4. Research Questions

The main research question underpinning this study:

Is there an association between brand equity and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus)?

The sub-research questions which stem from the main research question are:

Is there an association between brand awareness and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus)?

Is there an association between brand association and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus)?

Is there an association between perceived quality and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus)?

Is there an association between brand loyalty and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus)?

Is there an association between brand image and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus)?

Is there an association between product pricing and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus) ?

Is there an association between product packaging and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus) ?

Is there an association between brand values and ethics on consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus)?

Is there an association between online and offline presence on consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus)?

1.5.Research Objectives

The primary objective of this study:

To determine the key brand equity associations between consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus).

The sub-research objectives which stem from the main research objective are:

To examine the association between brand awareness and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus).

To establish the association between brand association and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus).

To determine the association between perceived quality and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus).

To explore the association between brand loyalty and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus).

To investigate the association between brand image and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus).

To explore the association between product pricing and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus).

To identify the association between product packaging and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus).

To determine the association between brand values and ethics and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus).

To examine the association between online and offline presence and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus)

1.6. Significance of the Study

The findings of this study are envisaged to provide a great benefit to the companies in the smartphone industry, particularly when considering that brand strategies play a significant part in the manner in which customers utilise a product or service (Muigai, 2017). The growing demand for smartphones in South Africa validates the reasoning of why customers make purchases, especially university students. Therefore, companies that sell smartphones should incorporate what this study recommends as this will put them in a better position to comprehend the significance of the application aspect of brand equity in their marketing efforts. This study unpacks important outcomes pertaining to the dimensions of brand equity and their associations with consumer perception among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus) who purchase smartphones. Furthermore, no research has been conducted on this specific population before and, as a result, new and pertinent information may be obtained from this study. This study will contribute to the body of knowledge by bringing in new realities and conclusions. Furthermore, this study will determine the key brand equity associations between consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus).

1.7. Scope of the Study

This study encapsulates the essence of brand equity by highlighting 'brand awareness,' 'brand association,' 'perceived quality,' 'brand image' and 'brand loyalty,' and their respective associations with consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus).

1.8. Limitations of the Study

A notable limitation of this study was the relationship between the amount of time given to this project by the University of KwaZulu-Natal and the larger population of South Africa, that studying the entire South Africa, was going to waste scarce resources, tiring and impossible to finish. That is the reason which is why the geographical location for this study then became University of KwaZulu-Natal Pietermaritzburg students

Other limitations that this study may face include:

Language barrier: some students had English as their second language, and they had difficulties filling out questionnaires as they did not fully understand what was being asked of them.

Respondents only included actual smartphone owners: it was a little challenging to identify the exact students who owned smartphones as some kept their phones in their pockets or bags making it difficult to identify them.

1.9. Structure of the Dissertation

This study consists of six interlinked chapters as follows:

Chapter One: Introduction and Background of the Study

The introductory chapter presented the background of the study, the statement of the problem, and the key research objectives and questions. It also explored the significance of this study.

Chapter Two: Literature Review and Conceptual Framework

This chapter contained an evaluation of the literature (body of knowledge) that was reviewed. Furthermore, it focused on literature studies that had been previously explored by other scholars as relevant to the phenomenon under investigation was perused and analysed extensively.

Chapter Three: Methodological Approach: Data Collection

In this chapter the focus was on presenting the way in which data was gathered and the research methodology employed in the conduction of this study. The nature of the study design had been elaborated on.

Chapter Four: Data Analysis, Presentation, and Interpretation

This chapter highlighted the findings and provided an interpretation of the pragmatic results. SPSS was utilised to represent and analyse the quantitative data from the questionnaire while chi-square and cross-tabulations were used to represent and analyse the data of this study.

Chapter Five: Discussion of the Research Findings

The fifth chapter included the empirical results from chapter four and linked the results with the research objectives of the study as well as the literature discoveries.

Chapter Six: Conclusion and Recommendation of the Study

The concluding chapter in which the researcher had drawn up a summary that reiterates the main points of the study and additionally provided suggestions for future studies that may emerge from the findings in this study.

1.10. Conclusion

This chapter provided an introduction and background to this study. It outlined the problem statement, purpose of research, research questions, research objectives, significance of the study, limitations, and the structure of the thesis. In doing so, it has given the study clear direction to determine the key brand equity associations between consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus).

CHAPTER TWO: LITERATURE REVIEW

“*Brand Equity is nice – until you have to use it.”*

“The search for brand equity sometimes feels like whacking at a piñata. It is blind; it is either a hit or miss.”

by Amoroso and Kover (1992).

2.1. Introduction

The previous chapter provided an outline for the direction that this study took. The study began with a brief background on brand equity, consumer perceptions, smartphones, and millennials. Furthermore, before moving on to the next chapter of exploring the association between brand equity and consumer perceptions of smartphones among millennials in Pietermaritzburg at the University of KwaZulu-Natal, concepts such as what constitutes a brand, smartphone, brand awareness, brand loyalty, perceived quality, brand association, brand image, and millennials were defined (Pietermaritzburg campus).

This chapter reviewing literature focused on identifying the significant contribution of existing literature on the phenomenon under inquiry. The main aim of this chapter was to critically engage with the various sources of data and establish a greater understanding of the research questions and objectives highlighted in chapter one. This chapter defines, and unpacks, significant concepts in line with the objectives of this study starting with brands and branding. It also examines the concepts of brand equity, consumer perceptions, attributes of consumer perceptions, smartphones, statistics on smartphones, millennials, and the buying behaviour of millennials.

2.2. Brands and Branding

*2.2.1. **Brand***

Brand is a complex phenomenon that has been discussed and researched extensively by various academics and brand experts including Berger (2019), Anjarsari (2020), Attest (2017), Aaker, (1996) and many others. One of the most reputable definitions of brand is by the American Marketing Association (AMA) (2008) which defines brand as a name, term, sign or symbol, design, or an arrangement aimed at identifying offerings of a company to help set them apart from their rivals. According to Berger (2019), brands are ever-present, and they infiltrate our economic, social, cultural, sporting, and religious lives. Furthermore, Berger (2019) suggests that a brand is an element in a product that helps to distinguish it from other consumer goods and services that are shaped to meet the same need. Krishna (2012) states that “a brand is a consequence of a synaptic process in the brain. There are different areas in the brain that factor in information, pictures, emotions, feelings, and encounters; psychological concepts inside consumers’ minds.” As various individuals might have diverse perceptions about the same brand, a brand can also be described as a collection of different meanings.

2.2.2. The Role Played by Branding Products

Product branding is analogous to naming a child. Parents understand that their children's success and happiness are primarily determined by the development of their character, intellect, and capacity, rather than by their names. Nonetheless, they take great care in naming their children for identification purposes (Pathak, Velasco, and Spence, 2020). Furthermore, branding plays a more key role than a simple name. This is because a brand name is quite unique from an ordinary name. According to Sasmita and Suki (2015), branding products are fundamental in marketing and product promotion, and branding a product creates loyalty. Most significantly, “when consumers associate a name or a logo with a particular product, they will often return to that product repeatedly” (Business Case Studies, 2017). Branding products will give a product an edge over competitors and help a product stand out from the crowd (Business Case Studies, 2017). Furthermore, a brand is also described as a product that includes other aspects that help to distinguish it from different consumer goods and services that are shaped to fulfil the same need (Keller, 2003). Therefore, brands play an essential role from a strategic viewpoint namely through market segmentation, and product differentiation.

Van Gelder (2003) identifies the managerial interdependencies and argues that “a brand is the conversion of the business strategy into a consumer experience that elicits certain behaviour” (van Gelder 2003 : 16). On the other hand, Bedbury and Fenichell (2002) state that “a brand is, if it is something, the consequence of a synaptic process in the brain. There are different areas in the brain that factor in information, pictures, emotions, feelings, and encounters; psychological concepts inside consumers' minds.” As various individuals might have diverse perceptions about the same brand, a brand can also be described as a collection of different meanings. A brand is the lifeline of an organisation. It represents the strength, integrity, and reputation of a business. It is not just how a logo is displayed, but rather the emotive and intellectual response your logo stimulates in the mind of the target audience (Stine, 2013). In simple terms, the success of a business's offerings and their business as a whole depends on the uniqueness of what is being served or offered to the end-user. A good example would be between Apple and Samsung, numerous images come to mind, whether you are a savvy technologist or not. Both brands elicit creativity, expensive, casual atmosphere, and innovative. Hence, brands are the heart and soul of a company and generate market share, gain customer loyalty, and augment channel power (William, no date).

2.3. Brand Equity

According to Alam and Saeed (2016), brand equity has evolved since the late 1980s, in both marketing and business strategy environments. The numerous theories developed around brand equity have established a great deal of attention over the past 20 years and remain a controversial topic within the marketing domain (Alam, and Saeed, 2016). This leads this study to the existence of branding and brand management practices which have a history that can be traced back to past decades. The idea of brand equity as a central business concept for various institutions or organisations is relatively new. Brand equity has only experienced serious development in the past two decades. A significant interest in this concept was sparked by a series of mergers and acquisitions that peaked in the 1980s, when it became clear that the purchase price paid by most firms largely reflected the value of their brands. It is worth noting that the implications of these transactions highlighted how brands were viewed as one of the most important intangible assets of firms. Muigai (2017) adds that brand equity is founded on the value that customers place in a brand in addition to the functionality of the product. Furthermore, Keller, (2020) asserts that brand equity is a set of associations and activities that are linked to multi-channelled and multi-media retail environments. On the other hand, Tavassoli, Sorescu, and Chandy (2014) argue that brand equity relates to the possessions and dangers that can either increase or decrease the worth of a firm and/or company in the eyes of its stakeholders. According to the India Times (2017) study, brands are resources that drive business performance and act as a catalyst for reformed perceptions of what marketing does, who does it, and what role it plays in business strategy. Lastly, Širola and Gallopeni (2020) assert brand equity can mean the holistic worth of a brand existing as an individual resource. It is also depicted as a collective of possessions and dangers that have to do with the name of the brand and its symbolism, facilitating buyers to form a bond with the brand.

Table 2. 1: Mostly cited "Brand Equity" studies

Author	Dimensions of Brand Equity	Related Findings
Aaker (1996)	Brand loyalty, perceived quality, brand awareness, brand associations	Four dimensions of brand equity represent customer perceptions of the brand and could be applied Across markets and products.
Keller (1993)	Brand awareness, brand image	When the consumer is familiar with the brand and holds some favourable, strong, and unique brand associations in the memory, then customer-based brand equity occurs
Park and Srinivasan (1994)	Brand associations (Attribute-based and non-attribute-based component of brand equity)	The non-attribute-based component of brand equity appears to play a more dominant role in determining a brand's equity
Lane and Jacobson (1995)	Brand attitude, brand name familiarity The stock market participants' responses to brand extension	announcements depend on brand attitude and familiarity
Cobbwalgren, Ruble, and Donthu (1995)	Perceived quality, brand awareness, brand associations, advertising awareness	The brand with greater advertising budget yielded substantially higher levels of brand equity. In turn, the brand with the higher equity generated significantly greater preference and purchase intentions.
Aaker (1996)	Brand loyalty, perceived quality, brand awareness, brand associations	Four dimensions of brand equity represent customer perceptions of the brand and could be applied Across markets and products.
Yoo, Donthu, and Lee (2000)	Brand loyalty, perceived quality, brand awareness/associations	Brand equity is positively related to perceived quality, brand loyalty, and brand associations. The relationship of perceived quality and brand associations to brand equity is much weaker than the relationship of brand loyalty to brand equity
Berry (2000)	Brand awareness, brand meaning (customer's dominant perceptions)	Positive service brand equity emerges from the synergy of brand awareness and brand meaning.
Yoo and Donthu (2001)	Brand loyalty, perceived quality, brand awareness/associations	A multidimensional brand equity scale is validated across Americans, Korean Americans and Koreans samples
Gil (2007)	Brand loyalty, perceived quality, brand Awareness, brand associations	Brand loyalty is much closer to the concept of overall brand equity than brand Awareness-associations and perceived quality.
Atilgan (2009)	Brand loyalty, perceived quality, brand Awareness, Brand associations, Brand Trust	Emergence of brand trust as a new dimension instead of brand awareness complies well with recent literature on global branding,
Mishra and Datta (2011)	Brand Name, Brand Communication, Brand Association, Brand Personality, Brand Awareness, Brand Image, Perceived Brand quality, Brand Loyalty	Importance of the effect of the brand assets treated as antecedents like brand name, awareness, personality and consequences like brand preference and purchase intention on customer based brand equity.

(Source: Taleghani et al (2011))

2.3.1. Perspectives of Brand Equity

It is assumed that brand value emerged from three distinct views. The first constituting of the "cognitive psychology viewpoint. This describes brand equity with regards to the varying customer responses in relation to the product, price, place, and promotional strategy of a brand that comes about as of knowledge that buyers have of a brand" (Aaker, 1991; Keller, 1993). This point of view suggests that if a company has a strong brand affiliation with end-users, it is considered more favourable (Baalbaki,2012). Accumulating beneficial marketing blend responses from the customer is therefore simpler. At the other hand, it is more difficult to elicit positive feedback from a product or service if a company has a less favourable brand relationship with the end consumer (Baalbaki,2012).

Hence, with regards to the cognitive perspective, brand equity is the end product of customer reactions to marketing campaigns, informed through associations with buyer products (Anderson, 2007).Following the cognitive psychology perspective comes the information-economic perspective. It focuses on the "market value as the increased usefulness provided to a company by a brand name" (Erdem and Swait, 1998; Wernerfelt, 1988). To put it into context, the name of the brand is an important indication of product quality for consumers. It is constructed by the apparent price or the consumer good being advantageous. This perceived price decreases the cost of information of the customer (Baalbaki,2012). Thus, increasing the value of the business and quality for consumers (Baalbaki,2012). The main function of this perspective is to provide detailed information on the way in which an organisation acquires funds and incurs expenditure for marketing their products (Baalbaki,2012).

The financial perspective encompasses the monetary segment of the market value of a product subtracted from its possessions that can be touched worth (Simon and Sullivan, 1993). The downside of this strategy is double: to begin with, it only measures the intangible value of a company, and (does not factor in possessions that cannot be touched like human resources). Secondly, it makes a calculation on equity on a business scale (corporate) goods and not for example, on a company's product-level items. Hence, the context of this perspective leans more towards a traditional brand equity measurement (Anderson, 2007). Although brand equity's roots derive from three different perspectives, one can categorize it into two particular points of view such as the financial point of view — (i.e. ,brand interest towards company) - firm-based brand equity (FBBE) and market viewpoint - (i.e. , brand interest for customer) - consumer brand equity (CBBE)(Keller, 1993).For that reason, Kapferer's concept of brand value has a monetary meaning, so it carries along with the economic viewpoint (Baalbaki,2012). On the other hand, Farquhar 's interpretation implies that through the customer viewpoint, the additional benefit that a company endows from a purchase (Baalbaki,2012).

Brand equity impacts a large number of customers in a business and creates trust as well. Recently employee-based brand equity (EBBE) came to light (King and Grace, 2009). King and Grace (2009, p. 130) define EBBE as "the varying impact of taking cognisance of a brand due to a worker's reaction towards their work surroundings."

This dissertation will focus on the consumer-based brand equity perspective and will not discuss FBBE or EBBE, as these two perspectives are outside the scope of this study. The rationale behind this decision is based on the following: The financial value of brand equity is ultimately the outcome of consumer response to a brand name. CBBE, on the other hand, is the driving force of increased market share and profitability of the brand since it is based on the market's perceptions (Christodoulides and de Chernatony, 2010). The financial-based perspective thus measures the outcome of customer-based brand equity; and it is therefore expedient to first focus on CBBE.

2.3.2. The Five Dimensions of Brand Equity

A study conducted by Aaker (1996:105) identified that brand equity comprises five diverse dimensions namely brand awareness, perceived quality, brand loyalty, brand association and brand image. The section below analyses the five dimensions of brand equity according to the theories of brand equity

A. ***Brand Awareness***

Brand awareness, according to Bilgin (2018), can be understood as the level of customer's ability to recognize, accept, and recall the brand. Keller (2020) adds brand awareness is the ability of a consumer to recall or recognize a certain brand as a member of a certain group. This means that brand awareness is a crucial component which is often overlooked and is a predominant factor contributing to the consumers' product selection. Aaker (1996) describes brand awareness as the salience a brand has embedded in the customer's memory. Ongoing "visibility, enhancing familiarity, and powerful associations with related offerings and purchasing experience" contribute to brand awareness (Keller, 1993:19). Keller and Lehmann (2006) contend that brand awareness influences customer decision making. Consumers are more likely to purchase goods or services that have a strong brand association.

B. ***Brand Association***

Keller (2020) contends that consumer attitudes toward specific products, as well as the benefits they receive from those products, are what cause them to associate with a specific brand. As a result, brand association can be used as a tool to collect information that can be used to differentiate the brand from the competition (Van Osselaer and Janiszewski 2001). In a study conducted by Aaker (1991), brand association and brand equity are both presented as strongly interlinked. Brand association improves the remarkability of a particular brand. According to Phong, Nga, Hanh, and Minh (2020), brand association creates the association with attitudes, attributes, and benefits, respectively. Brand association also serves as a data collection tool (Van Osselaer and Janiszewski, 2001). According to Anjarsari (2020), effective brand association contributes to increased brand equity. Anjarsari (2020) adds that brand association leads to increased brand loyalty because brand association is related to purchasing motivation. Brand association is related to the brand attributes, and the benefits that consumers receive from purchasing that brand form the foundation of brand loyalty and the reason for purchasing decisions.

C. Brand Loyalty

According to Bilgin (2018), brand loyalty is the consumer's commitment to purchase a certain brand and the disregarding of competitor brands' actions to upgrade or market their services to the consumer. The consumer commits to being a reliable client of that brand. Furthermore, brand loyalty is the consumer behaviour of repurchasing a specific brand, which demonstrates a conscious decision making when the consumer continues to purchase the same brand over and over (Atulkar, 2020). Reichheld and Schefter (2000) highlight that consumers who are loyal to a certain brand are able to convince new customers to buy the brand of a product and this is an attitudinal aspect of the loyalty. Bilgin (2018) adds that brand loyalty goes with price tolerance and acceptance. This means brand loyalty is an important non-material asset for brands and products (Jiang and Zhang, 2016).

D. Brand Image

The position of the brand in the mind of the customer is referred to as brand image. Brand image, according to Sanny, Arina, Maulidya, and Pertiwi (2020), is the consumers' way of recognising a brand, including brand definitions. Brand image relates to the idea that a consumer has about a certain product. The experience, marketing efforts, and social effects create the brand image in the consumers mind (Cheung, Pires, and Rosenberger III, 2019). Bilgin (2018) adds that this influences consumers' trust and attitude towards a certain brand.

E. Perceived Quality

Perceived quality, according to Saleem and Omar (2015), is the psychological judgement made by a certain consumer about the quality of a brand based on their own perceptions. The characteristics of a brand include intrinsic as well as extrinsic signals of quality. According to Anjarsari (2020), when a brand is perceived to be globalised, it can meet consumers' purchase intentions by focusing on features such as quality. They also discovered that there is a link between perceived quality and brand loyalty. Brand loyalty is positively related to perceived quality (Tong and Hawley, 2009).

2.3.3. The Importance of Brand Equity

The two most poignant conceptualisations of brand equity Aaker's (1991) and Keller (1993) have led to the development of many scales to measure brand equity that are supposed to capture what people perceive. However, the conceptualisations were actually developed by what two experts believed made up brand equity, and the subsequent constructs and measurements were developed without first doing what marketers say should always be done first: talk to consumers. According to Attest (2017), brand equity can be defined as the "pulling power" in a marketing industry. Therefore, it is imperative that brands are better recognised amongst the end-user by means of constant public relations and advertising (Sasmita and Suki, 2015). Despite the fact that it sounds like a catchphrase, understanding brand equity is critical if a company wants to develop its brand or market new consumer goods through advertisements. This supports Attest (2017)'s claim that businesses can generate higher profits from consumer goods when the quality of those goods, as perceived by the consumer, is superior to other category players. This stance can be carried out without relying solely on promotions. Hence, this dissertation fills this gap by understanding the consumer's perspective of brand equity through qualitative research and then developing a scale that measures what consumers actually perceive.

2.3.4. Higher Profits

The study conducted by Alhaddad (2015) shows that buyers do not mind paying the price for brands that appeal to them, and one only has to walk into any supermarket to take heed of the different prices that are paid for labelled and general consumer goods. A study conducted by Attest (2017) presented evidence of research driving pricing strategies, with regard to businesses being proficient at employing a premium pricing strategy for their consumer goods or services, despite the difficulty of proving physical superiority amongst rivals. Being able to price products higher leads to higher profit margins, and as such, brand equity represents a significant portion of a company's lead and functionality, particularly in public markets.

2.3.5. Summary of Previous Research on Brand Equity

Focus	**1990s**	**2000s**	**2010s**
Conceptualization and Measurement of brand equity: Dimensions and Scaling	(Simon and Sullivan, 1990; Keller, 1993; Lassar et al., 1995; Aaker, 1996; Gladen, Milne and Sutton, 1998; Agarwal and Rao, 1996; Erdem and Swait, 1998; Chay, 1991; Dyson, Farr and Hollis, 1996; Baldinger, 1990).	(Kim and Kim, 2006; Pappu et al, 2005; Kayaman and Arasli, 2007; Atilgan, Akinci, Aksoy and Kaynak, 2009; Mackay, 2001; de Chernatony and Harris, 2001).	(Chieng and Lee, 2011; Lee and Leh, 2011).
Antecedents of brand equity			
1. Marketing Mix Elements		(Yoo et al., 2000; PalazónVidal and Delgado-Ballester, 2005; Sriram Balachander and Kalwani. 2007;	(Valette-Florence et al., 2011; Sedaghat et al., 2012; Xu and Chan, 2011; Buil, de Chernatony and Martínez, 2011; Zaribaf and Hosseini, 2011;

		Herrmann, Huber, Shao, and Bao, 2007; Tong and Hawley, 2009; Rajh, 2005; Kabadayi et al., 2007; Evanschitzky and Woisetschläger, 2007; Villarejo-Ramos and SanchezFranco, 2005).	Amaretta and Hendriana, 2011; Iranzadeh, Norouzi and heravi, 2012; Chen and Green, 2012, Nezami, 2013; Mutsikiwa et al., 2013).
2. Brand Personality			(Valette-Florence et al., 2011; Lee and Back, 2010; Choi et al., 2011)
3. Service Quality		(Kayaman and Arasli, 2007; Vatjanasaregagul and Wang, 2007; Ha, 2009; Alexandris et al., 2008).	(He and Li, 2011; Malik, Naeem and Nasir, 2011; Li and Krit, 2012; Budiarti et al., 2013).
4. Country of Origin		(Yasin et al., 2007; Ko et al. 2009)	(Chen, Wu, and Chen, 2011; Norouzi and Hosienabadi, 2011; Sanyal and Datta, 2011; Shahin et al., 2013)
5. Relationship Marketing		(Kim et al., 2008; Wolter, 2009)	(Yang, 2010)
6. Others	Cobb-Walgren, Ruble and Donthu, 1995	(Chang and Liu, 2009; Broyles, Schumann and Leingpibul, 2009; Kim and Cavusgil, 2009; DelgadoBallester and Munuera-Alema, 2005; Pappu and Quester, 2006).	(Biedenbach and Marell, 2010; So and King, 2010; Rios and Riquelme, 2010; Tsang, Lee, and Li, 2011; Chen and Green, 2012; Mourad et al., 2011; BenoitMoreau and Parguel, 2011; Ha et al., 2010; Allaway, Huddleston, Whipple and Ellinger, 2011; Akbar and Azhar, 2011).
Interrelationships among brand equity dimensions		(Kayaman and Arasli, 2007; Bamert and Wehrli, 2005).	(Taleghani and Almasi, 2011; Chen and Tseng, 2010; Balaji,

			2011; Iranzadeh, Norouzi and heravi, 2012).
Consequences of brand equity			
1. Purchase Intention	Cobb-Walgren, Ruble and Donthu, 1995	(Chang and Liu, 2009; Broyles, Schumann and Leingpibul, 2009; Chang, Hsu and Chung, 2008).	
2. Company Image		(Kim et al., 2008)	

2.4. Consumer Perceptions

According to Thiruvenkatraj (nd:1), consumer perception is a "marketing concept that encompasses a customer's impression, awareness, or consciousness about a company or its offerings." Customer perception typically influences advertising, reviews, public relations, social media, personal experiences, and other channels."Consumer perception, according to Stevens, Maclaran, and Brown (2019), is a mental development in which an individual becomes aware of their surroundings and translates the environment to fit their window through which they see the world. According to Stevens, Maclaran, and Brown (2019), consumer perception also includes an individual's interpretation of an event or relation that is chosen as the preceptor. According to Hartmann and Siegrist (2017), consumer perception occurs when sensory receptors pick up stimuli and send them through the brain to encode and decode various messages. A person's frame of reference includes their history, beliefs, likes and dislikes, preconceptions, emotions, and other psychosomatic responses to unknown causes (Hartmann, and Siegrist, 2017). According to Walters et al (1989), it is defined as a mental development whereby an individual becomes aware of the surroundings and translates the environment to fit their “window in which they see the world through”. Walters et al. (1989) further state that perception also includes an individual’s interpretation through senses, an event, or relation that may be chosen as the preceptor. In a nutshell, "it is the perception that your customers or prospective customers have of your company." This has a significant impact on an organization's ability to attract new customers and maintain current relationships" (Virtual Hold Technology Solutions,2020).

2.4.1. Consumer Behaviour

The narration of consumer behaviour and the background information of consumer perceptions are intertwined (Hartmann, and Siegrist, 2017). The development of the concept of consumer behaviour is shifting in the sense that brands, marketers, and advertisers have to learn how to quantify the utilisation of new devices and contemporary trends. Having said that, they must link their measurement to what the customer regards as a necessity so that they can look at the diverse ways in which the different devices are utilised. Consumer behaviour is “the process in which consumers make decisions when looking for, buying, making use of, assessing and disposing of products, services and ideas". Schiffman and Kanuk (1997: 6-7) state that it is an evaluation of how people concluded taking advantage of resources at their disposal, be it time, money, or effort on consumption-related items. This also puts to light the question of what they purchase, the reason behind the purchase, when they purchase it, the place of purchase, the frequency of buying the product and the incorporation of the product in their daily lives (Schiffman, O'Cass, Paladino, and Carlson, 2013). It also considers how customers behave when "looking for a product, buying a product, using a product, assessing a product, and disposing of products that they believe meet their needs" (Schiffman *et al*., 2013).

2.4.2. Predictive expectations and normative expectations

These are two fundamentally distinct forms of expectations that have been hypothesized in literature. Predictive expectation are arithmetical; their level is distinct by the increase of particular likelihood of a particular result on its valence; they grow when either the probability or the valence grows; when at least one of these factors declines, expectancy decreases (Meirovich, G., and Little, L. 2013). According to Oliver (2010), expectations of this kind are performance-amended, i.e. revised continuously as a result of constant collaborations with a provider. They can step in both routes as a result of encounters with specific providers (Boulding et al. 1993). For example, “a restaurant patron may be relatively happy with their meal, and become happier with meals to follow, but then experience poorly prepared food or very bad customer service and not patronize that restaurant again” (Meirovich, G., and Little, L. 2013).

The concept of normative expectations was created in service quality literature as an element of the SERVQUAL tool (Parasuraman, Zeithaml, and Berry 1985). They represent customers’ beliefs about what a service provider should offer and exemplify benchmarks against which customers evaluate their perceptions of product or service quality (Meirovich, G., and Little, L., 2013). Meirovich, G., and Little, L., (2013), categorized the two levels as being desired and adequate expectations. Desired expectations are what consumers believe should and can be given to them. Adequate expectations are the least of what consumers are wanting to accept from a service delivery point of view (Parasuraman, Zeithaml, and Berry 1994). The difference lies in how much consumers can deal with, which is with regards to inconsistency in quality (Meirovich, G., and Little, L., 2013).

2.4.3. Consumer perceptions

Consumer perception is critical in terms of creating networking opportunities for consumers and advertising grounds, shaping consumer purchasing behaviour, trust, the manner in which they recommend a brand, and activism (HapticMedia, 2019). It is believed that a satisfied consumer is the one that has developed an emotional attachment with the product or service. A Deloitte study, published in May 2019, states that loyal consumers have a relationship with brands they share a purchasing history within the same way they would have a relationship with their loved ones, making use of words such as "love", "adore" and "happy" when describing the brand (HapticMedia, 2019). Furthermore, when a consumer attains a product that matches the product description, positive customer perception is generated (Clootrack, 2020). Research conducted by Edelman Trust Barometer (2019) denotes that 67% of respondents from 8 markets universally agree with the statement, "a good reputation may drive individuals to experiment with a product, but they may withdraw their support from the organisation if they do not trust the company manufacturing the product" (HapticMedia,2019). Once an organisation strengthens the relationship existing between consumers and themselves,consumer perception progresses. This provides a better competitive advantage(Solimun and Fernandes,2018). Apple, Guerlain, Kenzo, and many other companies, for example, go beyond simply providing people with products that influence their lives. Customers are said to interact with them on a personal level, valuing them as valuable partners, friends, helpers, curators, and so on (HapticMedia, 2019).

Customer perception is imperative to help identify how a brand wants to be regarded in the long run. Rationalising consumer perceptions enhances an organisation's ability to produce products, render services and set their company apart from their competitors in the marketplace (Keller, 2020). Marketers also need to increase the prominence of their brands at the back of their consumer's minds which means they must make the brand more visible to their consumers and possible buyers. According to Solimun and Fernandes (2018), market research needs to be conducted for a product and services offered so that marketers may be aware of what customers are buying and why. Therefore, creating numerous surveys to give customers a platform to communicate their feelings and opinions about your organisation, and the brands you offer in the market, is fundamental to creating awareness. You can collect information directly from the customer by creating a survey. Brands can examine and quantify perception by investing time and employing sophisticated tools and methods (Sarjono, Sasmita and Handoko, 2019). According to López-Fernández (2020), when this is put on a scale it gives a stream of valuable customer awareness. In addition, when a brand makes use of an analytical approach and measures customer perception, it reveals how customers look at an organisation's brand (Sarjono, Sasmita, and Handoko, 2019).

2.5. Attributes of Consumer Perceptions

When consumers have limited time and bandwidth to complete comprehensive research on a novel product, the viewpoint of numerous product features provides the initial reaction for the most part (Zhao, Zhang, Hu, Xu, and Liu, 2021). The features of the product help consumers to decide as to whether or not it fulfils their expectations or not. According to Zhao *et al*. (2021), researching the structure of attributes centred on consumer perceptions will help practitioners better understand what captures consumers. These include quality, aesthetics (packaging), identity, product pricing, and brand values and ethics. The below section discusses these features.

2.5.1. Quality

According to Uggla (2006), quality constitutes a big part of brand identity and is one of the driving forces when choosing a brand. Rathnayaka (2018) states that product quality has an immense effect on brand perceptions. Whether your products are of good or inferior quality, they should match with the prices projected, the branding, and the guarantees the organisation makes about the product (Osterwalder, Pigneur, Bernarda, and Smith, 2015). In simple terms, your product should meet customers' expectations. Snowberrymedia (2018) states that "the quality of your products should match your pricing, branding, and the promises you make about your product". It does not necessarily mean that everything that an organisation sells ought to be of the best quality but that an organisation meets the customer's expectations in terms of quality.

2.5.2. Aesthetics (packaging)

Packaging is the designing of the wrapper of a brand or product. According to Sung (2021), packaging plays a role in advertising the product to consumers and in the selling of the product or service. Packaging expresses the image that the brand communicates to buyers (Hess and Palma, 2019). Therefore, packaging plays a huge role in the experience of the product being utilised to the best of its ability. However, consumer product companies and researchers primarily concentrate on the influence of product promotions, distribution and different pre-prior usage and cost-based functions rather than the packaging (Hess and Palma, 2019). On the other hand, Lim, Baek, Yoon, and Kim (2020) believe packaging has an impact on the way in which customers see a brand to such an extent that it can be considered a selling factor in itself. Factors such as "colour, design, text, environmental-friendliness and sturdiness are contributors to customers developing their own views" (Snowberrymedia, 2018). For example, luxury products might be packaged in "black and gold," while low-priced options will stick to basic colours such as "black, white and red" (Lim, Baek, Yoon, and Kim, 2020). Packaging for high-priced tech products will generally be robust and secure to signify the quality of the product. On the other hand, Paunonen,Pitkänen,Vähä-Nissi, Leminen, and Kainusalmi (2019) state items targeted at environmentally conscious consumers will be packaged in recycled materials, utilising colours like "green and brown". Packaging could be the first contact many customers have with a brand. Hence, it is important to ensure organisations get it right (Snowberrymedia, 2018).

2.5.3. Identity

An organisation's brand identity comprises various elements which are utilised to generate a product image to the customers (Skinner, 2018). The most fundamental elements of band identity are branding, tone of voice, typography, colours, and shapes. It is vital for organisations to ensure that the brand identity remains consistent across all avenues and prevents any miscalculations or confusion (Kristal, Baumgarth, and Henseler, 2020). Most significantly, a solid brand identity helps customers recall the product, helps set an organisation apart from its rivals and echoes the brand values (Kristal, Baumgarth, and Henseler, 2020).

2.5.4. Product Pricing

According to Verhoef (2020), in an event where consumers are comparing two or more smartphone brands, their perceptions about the brands they are comparing may be influenced by product pricing which is a major component influencing consumer perceptions about brands. Verhoef (2020) adds that higher prices have a lot to do with lavishness and excellent customer experience. Whereas lower prices are appealing to customers searching for a bargain and may even drive away consumers concerned about quality and reliability (Snowberrymedia, 2018). According to Chevalier and Kashyap (2019), price forms the basis of choosing brands. This is seen when selecting the lowest price to avoid the risk of selecting the highest price as it communicates product quality.

2.5.5. Brand Values and Ethics

The brand's values and ethics have an important responsibility with regards to consumer perceptions, especially when it comes to how consumers feel about buying from an organization. According to Hossain and Ahmed (2018), if a company strives for excellence for people and the environment, customers will be satisfied with their purchases. However, if an organisation is known for exploiting employees, selling overpriced products, and polluting the environment, the public's perception of your brand is bound to deteriorate in the minds of the consumer (Ferrell, Harrison, Ferrell, and Hair, 2019). In the long run, this can impact the organisation's reputation.

2.6. Definition of Smartphones

Smartphones are a hybrid of a mobile phone and a portable device that has enabled the Internet's most significant technological innovation. A mobile phone functions almost identically to a desktop computer and can do the same amount of work – and possibly even more due to its versatility – as a personal computer (Kortum, and Sorber, 2015). A smartphone is defined as a mobile phone that can be used as a small computer that can connect to the Internet. A smartphone also has many features such as email and network, music and video player, camera, camcorder, GPS navigation, voice recorder, alarm clock, flashlight, picture archive, address book, and much more (Ong, and Poljak, 2020). According to Wu, Wu, Qiu, Redouté, and Yuce (2020), a smartphone is a mobile phone that can be used as a small computer and connects to the internet. In addition to this definition, Ong and Poljak (2020) propose that a smartphone is a phone that performs many of the functions of a computer. They also mention that it usually has a touchscreen interface, Internet access, and an operating system that can run downloaded apps.

2.7. The Evolution of Smartphones Among Millennials in South Africa

Generational cohorts play an important role in marketing because circumstances, environmental factors, economic power, general opinion, and association are common in generational groups and differ with each generation, and their consumer behaviour and influence set each generation apart from the others (Kamenidou, Stavrianea, and Bara, 2020). This study focuses on millennials because they were the first generation to grow up and experience the introduction of mobile phones and smartphones. They were also the first generation to be exposed to instant messaging, and later had unlimited access to the internet and social media, which they saw as part of evolution (Ottman, 2017). The interconnectedness of their social media experiences has exposed them to a variety of brands as well as the social esteem afforded by those brands. The millennials market has always been important in the marketing industry as they most often act on brand awareness, and they invest their money on the trusted and established brands (Moreno, Lafuente, Carreón, and Moreno, 2017). In order for brands to successfully target a market it is important to both understand the target market and the influence media has on them.

The studies conducted in South Africa show that smartphones have become a significant part of millennials' daily lives (Naidoo, 2009; Poushter, 2016; Thusi and Maduku, 2020), as smartphones came at the top of millennials priorities – placing above clothes, music, money, happiness, friends, and love (Generation Next, 2014). The popularity of smartphone brands such as Apple and Samsung among South African millennials is evident that spending priorities have shifted from phone calls and text messages to the social status that comes with brands. There was a momentous turning point in South Africa's telecommunications industry in 2017. A study conducted by Deloitte (2017) reveals that this was the year in which smartphones emerged as the most prevalent communication device for consumers, relegating the feature cell phone back to history.

According to Deloitte (2017), South Africans are among the world's top smartphone users. Furthermore, the use of instant messaging and social network apps among South African consumers is rapidly increasing. To expand on the previous point, Deloitte (2017) notes that customers are increasingly multi-tasking and multi-screening on smartphones. Customer demand for smartphones has undoubtedly increased significantly and will continue to grow rapidly in the South African market (Deloitte, 2017).

The Fintech revolution is gaining market and identity as the use of smartphones grows. Although customers still primarily use the mobile channel for browsing, the vast majority of customers also use the mobile channel to make electronic purchases (Ngubelanga and Duffett, 2021). With "authentication applications such as fingerprint verification for approving purchases and transfers, encouraging the mobile movement toward becoming a true payment enabler," consumers are becoming more affluent (Deloitte, 2017). Furthermore, Thusi and Maduku (2020) state that as more high-tech machine-learning applications enter the mainstream, with more powerful hardware and chipsets in smartphones, consumer adoption in the South African market is expected to rise.

2.7.1. Smartphones Market Size

A study conducted by Statista (2020) reveals that the number of smartphone users has reached the three billion mark globally and is expected to rise further by several hundred million in the coming years. China, India, and the United States are the countries with the largest number of smartphone users, with each country comfortably exceeding the user threshold of 100 million (Huang, Soljak, Boehm, and Car, 2018). Furthermore, Statista (2020) reported that over the years, in regard to market size, models, and manufacturers, the smartphone industry has increasingly grown. According to He, Hu, Wang, Hewage, Sadiq, and Feng (2021), worldwide smartphone shipments are expected to add to about 1.7 billion units in 2020, and, by 2021, 40 percent of the world's population will own a smartphone (Statista, 2020). To date, the growth of mobile technology has not been comparable around or within nations. In developed economies, individuals are more likely to have cell phones (Huang, Soljak, Boehm, and Car, 2018). Furthermore, "smartphones, for example, have a median of 76 percent in 18 developed economies studied, contrasted with an average of just 45 percent in developing economies" (Correa, Pavez, and Contreras, 2020).

2.7.2. Smartphones users in South Africa 2014-2023

According to Statista (2022), between 20 and 22 million South Africans use smartphones, accounting for roughly one-third of the country's population. However, the total number of mobile connections is much higher, with more than 90 million, as feature phones remain popular and widely used in the country and across the continent. However, the number of smartphone users is expected to increase by more than five million by 2023.

2.7.3. Leading Smartphone Vendors

Currently the leading smartphone vendors are Samsung, Apple, and Huawei. These "three smartphone companies combine for almost half of all smartphone exports across the globe" according to Statista (2020). In 2018, the three companies shipped at least 200 million units, with Samsung leading the pack with over 290 million product unit shipments (Statista, 2020). Samsung currently holds roughly one-fifth of global shipments. According to Statista (2020:3),"Apple is the second-largest mobile retailer in the world. In 2016, Apple sold over 210 million iPhones globally. Other well-known smartphone makers include Huawei, Lenovo, and Xiaomi. Android and iOS are the two major operating systems that have emerged since 2010" (Sehgal, Jain, Nagrath, and Kumar, 2019). In South Africa, Samsung is currently the leading mobile phone vendor. The Korean tech giant currently manufactures more than 40% of all devices in use. Huawei, a Chinese telecommunications equipment and consumer electronics manufacturer, and Apple, based in the United States, both have a strong presence in the South African market, each with a market share of more than 15% (Statista ,2022).

2.7.4. Leading mobile operator in South Africa

In South Africa, three mobile network operators account for roughly 90% of the overall market: Vodacom, MTN, and Cell C. Vodacom, in which the British multinational telecommunications company Vodafone has a majority stake, has the most subscribers (around 40%). MTN and Cell C account for roughly 30 and 17 percent of the market, respectively (Statista ,2022).

2.8. Global Overview

2.8.1. Global Statistics of Smartphone Among Millennials

Smartphone ownership will fluctuate widely by area, even across advanced economies as "although around nine out of ten or more South Koreans, Israelis and the Netherlands own smartphones, ownership rates are closer to six out of ten in developed countries such as Poland, Russia and Greece" (Dimock, 2019). Furthermore, Correa, Pavez, and Contreras (2020) state that in emerging economies such as Brazil, India, Kenya, Nigeria, Indonesia and South Africa, smartphone ownership rates range between 24-60 percent. Additionally, those with advanced educational levels and those with higher earnings are more likely to be connected digitally (Lee, Malerba, and Primi, 2020). The older age groups are more likely to own phones now than they were a few years ago, but the younger age groups have adopted at a much faster rate" (Dimock, 2019:10). For example, "those aged 34 and under in the Philippines are 47 percent more likely than those aged 50 and older to own a smartphone today" (Lee, Malerba, and Primi, 2020).

Furthermore, in most countries, education and income levels play significant roles in understanding technological inequalities. Dimock's (2019) study found that educated and higher-paid people are more likely to use the internet than those with lower levels of education or pay. They go on to say that "most Nigerians with secondary or higher education use social media (58%) compared to just 10% of Nigerians with less experience, for a 48 percent disparity" (Dimock, 2019). The educational gap in internet usage is even wider: 65 percent of more educated Nigerians use the internet, compared to 12 percent of those with lower educational levels (Rodrguez-Castelán, Ochoa, Lach, and Masaki, 2021).

Gender plays a significant role in recognising the technological implementation variances of most countries. On the other hand, both in industrialized and emerging countries, men and women generally utilize technologies at equal rates such as computers, the telephone, and social networking (Pew Research Center,2019). The gender disparity in mobile possession, for example, is typically in mid-single digits, if there are differences at all (Pew Research Center,2019). In Japan, "69 percent of men own smartphones relative to 63 percent of women" (Pew Research Center, 2019). However, in most countries in recent years, smartphones have been mostly obtained at similar rates by men and women, indicating that gender difference in use has remained steady (Pew Research Center,2019).

"In Brazil, for example, while 38 % of women and 43% of men owned smartphones in 2015, today 57% of women own smartphones and 63% own smartphones – a nearly equal difference at both points in time" (Pew Research Center, 2019). The noteworthy exception to this pattern is India, while men (34 percent) are far more likely to own smartphones than women (15 percent) – a 19 percentage point gap (Pew Research Centre, 2019).

2.8.2. Popular Smartphone Brands Globally

Digital literacy and technological advances across the world are growing in leaps and bounds and innovations, such as smartphones, have risen significantly in the industry over the last few years. Furthermore, several of the leading mobile vendors are designing and marketing advanced technologies such as multiple SIMS and high-speed networks (Schilling, and Shankar, 2019). Players in the mobile industry engage in ongoing competitive partnerships that culminate in bitter rivalry. The ever-increasing proliferation of local mobile players is driving the global smartphone market to develop into one of the most profitable industries of all time. Furthermore, the growing digital literacy and consumer buying power will continue to increase demand on the smartphone market over the next few years, especially in emerging economies such as India and China (Mohammed, 2018). It is anticipated that the introduction of affordable or cost-effective smartphones and the growing 4G coverage in rural areas will gradually change the competitive landscape within the telecommunications industry in the coming years (Yaacoub and Alouini, 2020).

2.8.3. Top Smartphone Companies by Market Share in 2019

1. Samsung

Established in 1938 with its South Korean headquarters, Samsung was able to achieve the high-ranking position among the world's largest smartphone firms (You, 2021). The company is committed to providing a wide variety of goods and services across various industries (You, 2021). Samsung became a worldwide pacesetter with its ground-breaking products *"Samsung Galaxy A9, Samsung Galaxy A7, Samsung Galaxy J6+, Samsung Galaxy Note 9 and many more"* (Technavio, 2019:5).

2. Huawei Technologies

Established in 1987, Huawei Technologies is a focused Chinese business that offers telecommunications equipment, global networking, and services (Mascitelli and Chung, 2019). The company became one of the biggest producers of telecommunications equipment after Ericson purchased it in 2012 (Pawlicki, 2017). Huawei Technologies produced more than USD 92 billion in revenue from global sales of a range of products and services including smartphones, mobile and fixed broadband networks, tablet computers, dongles, consultancy, and managed services (Mascitelli and Chung, 2019). The organisation employs over 180,000 people worldwide and has promoted the use of modern technology in its current innovations. According to Yu, Klongthong, Thavorn, and Ngamkroeckjoti (2021), Huawei Technologies disclosed the foldable model functionality of its next generation of 5 G mobiles in September 2018. Its key products include *"Huawei P20, Huawei P20 Pro, Huawei Mate 10, Huawei P10 Plus, Huawei Y7 Prime 2018"* (Technavio,2019:6).

3. Apple

"Apple is a technology company headquartered in the United States that designs, develops and sells internet services, computer devices and consumer electronics" (Technavio, 2019:7). Since 1976, the company has focused on the launch of ground-breaking designs in computer software and hardware. Additionally, Verhoef, Broekhuizen, Bart, Bhattacharya, Dong, Fabian, and Haenlein (2021) report that the company employs over 123,000 employees worldwide with more than five hundred retail stores worldwide. Apple announced the launch of its iPhone XR as the new iPhone breakthrough in September 2018 by integrating advanced iPhone X technology with elements including a next-generation Neural Network, Face ID and TrueDepth camera system (Technavio, 2019). In 2017, the company reported profits of USD 229 billion, cementing its position as the world's largest smartphone company by market share (Dolata, 2018). *Key Products: iPhone Xs, iPhone XR, iPhone8, iPhone7 and others"* (Technavio, 2019:7).

4. OPPO

Founded in 2001, the company has retained its position among the world's largest smartphone companies thanks to its smartphones, mobile devices, and Blu-ray players, (Xun, 2018). Studies suggest a steady increase in demand from the developing economies in the APAC region, including India and China. For the global rugged smartphone market, the company has concentrated on enhancing its growth plans. As a result, OPPO revealed in October 2018 its ground plan for the launch or establishment of its first research and development centre in Hyderabad (Xun, 2018). *"Key Products: OPPO F9, OPPO F9 Pro, OPPO Find X, OPPO F7, OPPO A83" (Technavio, 2019,8)*

5. Vivo

Established in 2009, the company is owned by BBK Electronics, which focuses on mobile manufacturing and distribution, smartphone accessories, online services, and software (Haider, 2020). The company has its technology centres in China's urban regions, recruiting more than 1,600 research and development professionals (Haider, 2020). Due to the growing acceptance of its smartphones among millennial consumers Vivo has managed to increase its substantial share in the top 10 biggest smartphone firms. Most notably, the increasing demand from the Indian smartphone industry's millennial consumer segments with a broad array of advanced features transforms into a viable option for potential buyers (Haider, M.M., 2020).*"Key products: Vivo V11 Pro, Vivo NEX, Vivo V9" (Technavio, 2019,9).*

6. Xiaomi

Founded in 2010, Xiaomi is headquartered in China and is involved in the production of smartphones, laptops, consumer electronics, and other mobile apps (Xiao, 2017). The business supplies consumers in China as well as other developing economies including India, Indonesia, South Africa, the Philippines, and others (Technavio, 2019). In 2017, Xiaomi had raised USD 18 billion in sales with the assistance of more than 15,000 workers worldwide. It also increased consumer buying power in developing nations and increased digital literacy among millennials. Xiaomi was able to reach out to a broader market group, with a heavy presence on the online distribution channels (Xiao, X., 2017). *"Key Products: Mi Max 2/Mi MIX 2, Redmi Y2, Redmi 6, Redmi 6A, 5Pro, POCO F1, Redmi 5/Redmi 5A" (Technavio,2019,p.10).*

2.8.4. Future Trends in the Global Smartphones Market

Some of the largest mobile firms are increasingly releasing smartphones with the combined adoption of machinery learning, artificial intelligence, and other emerging technologies to achieve a higher market share . Furthermore, features like smart cameras and smart power management are gaining popularity in the global smartphone industry (Patel and Patel, 2016). On the other hand, manufacturers such as Samsung and Apple concentrate on using the aid of artificial intelligence to improve the capabilities of phone cameras (Chaudhary, 2019). Huawei Technologies also offers smartphones "with various attractive features, including split-screen, fast projection, and multi-column display (Technavio, 2019:11). In addition, artificial phone intelligence enables users to translate into a variety of languages without connecting to the Internet, and these developments in the global smartphone industry are expected to expand over the forecast period (Patel and Patel, 2016).

2.9. Millennials

2.8.1. Definition of Millennials

Millennials, also known as the Millenarian Generation, or Generation Y, is the term generally used to define "an individual who was born between 1980 and 2000 (early 21st century)" (Webopedia, 2020). According to Dimock (2019) millennials are believed to be a cohort born between the year 1981 to 1996 (aged 23 to 38 in 2019), and anyone born after 1997 deemed part of a new generation. The millennial generation is widely characterised as being heavily influenced by technology and more tolerance of non-traditional families and values is practised (Swanzen, 2018). The millennial generation characteristics include being able to save money, being very realistic when buying products, being networking oriented and making purchase decisions based on recommendations. Furthermore, they are fearful of their health and environmental problems and find "shopping as a social activity as an errand" (Adespresso, 2018).

2.8.2. Five Facts Describing the Millennial Consumer

“Fact 1: Millennials Require a Platform to Voice Their Viewpoints”

Millennials are fervent when it comes to expressing their views in all walks of life. A recent study led by Media Post suggests "87 percent of millennials believe that organisations can get sound feedback on their brands from customers before they produce new goods or services. Hence, millennials like to be the drivers in the decision-making process. They want, or rather, expect, organisations to seek ideas from them first before they place a new brand on the shelves" (Ipsos, 2015). Ordun (2015) also notes that millennials find satisfaction in knowing that their opinion is significant.

“Fact 2: Millennials are Passionate About Utilising and Sharing Content Online, Particularly Videos Exclusively on YouTube”

Millennials are deemed as the chief influencers in posting more content than any other generation, (Purani, Kumar, and Sahadev, 2019). Although there is a boundless range of sites in the social media domain, YouTube remains the leading platform in this community. YouTube reaches approximately 50 percent of the 18-34-year-old population, which is more than any cable network (Ipsos, 2015).

“Fact 3: Millennials Find Gratification in Using Emojis More Than Plain Text to Communicate”

For this demographic of customers, graphics are important. Dimock (2019) found that "53 percent of young adults (aged 18-29) are on Instagram, compared to 21 percent of the adult population as a whole" (Ipsos, 2015). On the other hand, Ordun (2015) discovered that millennials are considered to be more likely than any other generation to post content such as photos or provide comments or feedback about products, retailers, and brands on their social media pages. For instance, “66% of millennials post pictures or reviews on goods, services, stores, brands, etc. on social media sites (compared to 58% of Gen X and 40% of Boomers), and 69% of millennials pin items and product details on Pinterest (compared to 56% of Gen X and 34% of Boomers)” (Ipsos, 2015).

“Fact 4: Millennials are all over mobile”

According to Nielsen research, more than 85 percent of millennials in the United States own smartphones, making them the generation with the highest penetration rate of any other generation. (Ipsos, 2015). Hence, millennials came of age with the Internet and smartphones. It does not come as a surprise that they are known as a highly linked mobile group. According to Ipsos (2015), an analysis conducted in partnership with Google discovered on an average day, individuals aged between “18- to 34-year-olds who own a smartphone, their smartphone is in close proximity to them more than any other device”. Studies have indicated that “83% of millennials say that they sleep with their smartphones, compared to 50% of Boomers”.

“Fact 5: Millennials are Hyper-Connected”

Millennials are a generation filled with verve and hyper-connection. Mundt, Ross, and Burnett (2018) believe that the growth in technology has allowed millennials to be connected at any given time and at any location. Most significantly, social media outweighs email on a collaborative scale. According to Ipsos (2015), millennials distribute approximately six pieces of content through social media and only five through email.

2.9. Buying-Behaviour of Millennials

The generational cohort theory holds that because each generation was exposed to different life situations and circumstances as they grew up, these experiences influenced their behavior, attitudes, and beliefs (Ting and de Run, 2015; Bevan-Dye, 2013). So, regardless of the generation's social class or geography (where they live), the way they see life is similar (Bolton, Parasuraman, Hoefnagels, Migchels, Kabadayi, Gruber, Loureiro and Solnet, 2013:9).Furthermore, because of their exposure to different life circumstances, Gen Y consumers have different values and beliefs than other generations, such as Generation X (Gen X) (Li, Li, and Hudson, 2013). According to Li et al. (2013), these distinct values and beliefs influence Gen Y purchasing decisions and market behavior. To capture the attention of this important market segment, marketers must first understand Gen Y's attitudes, values, and beliefs (Brosdahl and Carpenter, 2011). There are four major consumer generations: Baby Boomers (born between 1946 and 1964), Gen X (born between 1965 and 1976), Gen Y (born between 1977 and 1995), and Generation Z (born after 1995). (Shahzad et al., 2015; Perreault, Cannon and McCarthy, 2015; Leung, 2013; Bevan-Dye, 2013). Consumers from each generation have distinct personality traits, values, beliefs, and interests and expectations (Li et al., 2013). Gibson and Sodeman (2015:65) support this assertion by stating that "each generation has its own defining characteristics that shape their assumptions through milestone social and cultural events and how generational members view the world, authority, and commitment." In addition, because of technological advancements, Gen Y grew up in a fast-paced society, and the new generation, Gen Z, is confronted with challenges such as recession, terrorism, and economic uncertainty. These life events that different generations experience have an impact on their values and general behavior.

In this study, the relevant consumer generation is Gen Y because it is the "most appealing market segment due to its purchasing power" (Makhitha, 2014:39; Wiedmann, Behrens, Klarmann and Hennigs, 2014:1129). Gen Y spends more than $200 billion per year and will most likely spend $10 trillion in their lifetime (McDaniel, Lamb and Hair, 2013:98). Furthermore, in the twenty-first century, the Gen Y cohort influences how marketing and advertising strategies are developed (Kothandaram, 2015; Kashif and Rehman, 2014). As a result, in order to capture the attention of this influential group, marketers must first understand their purchasing habits (Bilgihan, Peng and Kandampully, 2014; Schewe, Debevec, Madden, Diamond, Parment and Murphy, 2013). In South Africa, Gen Y accounts for 25-28% of total spending (Duffett, 2015; Kruger, and Saayman, 2014). In South Africa, Generation Y consumers are the first to benefit from the country's democratic transition in 1994. (Dlodlo and Mafini, 2013:2). As a result, an appealing segment of the middle class and emerging elites known as black diamonds has emerged within the larger cohort (Duh and Struwig, 2015). This market, which has about two million people, is made up of people who earn high salaries, are well educated, and own cars and houses (Kruger & Saayman, 2014). This emerging market's annual spending power ranges between \$20 and \$25 billion (Akpojivi, 2013; Cant and Meyer, 2012).Most significantly, this section discusses studies carried out on the underlying buying behaviour of millennials. The goal of this section is to gain an understanding of how different generations, especially millennials, make decisions across a variety of categories of purchasing behaviour

i. "Millennials want their purchases to make them feel good"

According to Santiago, (2019), 60 percent of millennials are likely to be attracted to brands that are an expression of their personality. Therefore, the brand should make them look and feel good as a whole. Although baby boomers and Gen Xers buy quantity-based goods, millennials value their money more and judge goods on a logistical and emotional spectrum (Naderi and Van Steenburg, 2018). In addition, because of their global purchasing power, Generation Y represents a lucrative market opportunity for consumer goods companies (Schewe et al., 2013). Gen Y consumers have the most disposable income of any group, making them the largest consumer group in any economy (Mandhlazi et al., 2013). According to Duh and Struwig (2015:95), "because they were born to the wealthiest generational cohort in history (Baby Boomers), Gen Y have more money at their disposal than any other young group ever." According to Kim and Jang (2014), Gen Y consumers are raised by parents and grandparents who financially support them for discretionary spending.

ii. "Millennials place value on experiences"

Moreno, Lafuente, Carreón, and Moreno (2017) assume that 50 percent of millennials prefer to spend their money on experiences over materialistic items and they are willing to pay extra for such. In reality, a number of brands have already recognised this and are turning to experiential marketing to forge a connection. In essence, this means providing incentives for interaction, often through extraordinary events, between the brand and customers.

iii. "Millennials like sharing with their friends"

Researchers find that millennials are 13 percent more likely to post their social media transactions than Gen Xers (Kim, McInerney, Rüdiger Smith, and Yamakawa, 2020). This gives them the ideal platform for expressing their thoughts, whether they are positive or negative. Forbes (2018) asserts that brands should frequently engage with their social media users, listen attentively to what consumers are thinking and feeling, and be open to fixing any misconceptions of their brand accordingly. The strongest drivers of Gen Y consumption are social motivation and acceptance by society and peers (Grotts and Johnson, 2013; Eastman and Liu, 2012). In a Malaysian study conducted by Hwa, Lee, and Cheng (2011), it was discovered that when choosing between mobile phone options, Gen Y relies on the influence and suggestions of their peers. The desire for social acceptance drives Generation Y to overspend on prestige brands and products (Casidy et al., 2015). As Khan et al. (2016:145) put it, "social motivation or acceptance or appropriateness influences consumers to engage in impulse buying behavior."

iv. "Millennials shop promiscuously"

Millennials are eager to try out new, creative brands rather than stick with a brand that is perceived as old and traditional (Santiago, 2019). According to research, brands should shift their focus from how to win consumers away from competitors to how to persuade end-users to choose them. This model should be restructured so that loyalty is not the only way to attract customers, but that the goal is to provide the customer with a linking and returning intent (Saleem, and Omar ,2015).

v. "Millennials trust peer-generated endorsements"

According to Fromm and Read (2018), more than one-third of millennials prefer to wait until someone they trust has completed a task. "Although they enjoy trying new products and services, they try to avoid actively paying attention to company-generated advertising and prefer to rely on word of mouth and product feedback" (Fromm and Garton, 2013). As part of their consumer confidence-building strategy, Fromm and Read (2018) recommend that businesses plan a marketing strategy that is aligned with influencer marketing.

vi. "Millennials seek relevancy"

Personality traits such as sociability, self-reliance, and assertiveness (Moon, 2016; Bilgihan, 2016) influence consumers' thoughts, feelings, and actions (Esu, 2016). Loroz and Helgeson (2016) identified the personality traits associated with Generation Y. They include qualities such as assertiveness, self-reliance, emotional and intellectual expression, innovation, and curiosity. Khan, Hui, Chen, and Hoe (2016) go on to say that Gen Y is self-assured and individualistic. Forbes (2018) suggests that nearly half of the millennials surveyed trust brands that generate important advertising and social media content.

They also assert personalisation and relevance are important to millennials and this should be considered by all brands. Organisations should perform research as part of strategic planning to further explore ways of understanding how their brand resonates and interacts with the customer (Kim, McInerney, Rüdiger Smith, and Yamakawa, 2020). Given their exceptionally long and confusing path to adulthood, Forbes' research has revealed that millennials are slowly coming into their own (Forbes, 2018). Their buying habits were formed by their journey, influenced by social and economic struggle, and strong preferences.

2.10. Generation Y culture orientation pertaining to mobile phones

Individualism and collectivism cultural dimensions influence Gen Y attitudes, thoughts, and behavior in terms of mobile phone consumption behavior. A smartphone is the "favourite device for Gen Y consumers worldwide" (Koo, Knight, Yang and Xiang, 2012:57). A study conducted in the United States and Korea, two countries known for having a significant number of people with mobile phones (Koo et al., 2012), revealed that because the United States and Korea are characterised by individualist and collectivist cultural dimensions, respectively, Gen Y preferred different communication approaches when promotional messages were sent to their phones (Koo et al., 2012). Whereas Generation Y in the United States preferred structured, detailed, and text-heavy mobile promotional messages, their Korean counterparts preferred nonverbal communication with limited word use (Koo et al., 2012). The US findings on mobile marketing to Gen Y differ from those of Knittel et al. (2016) and Valentine and Powers (2013), who claim that Gen Y will not delete mobile promotional messages that are short, relevant, quick, direct, and honest. Shuter, Cheong, and Chen (2016) conducted a study to determine which cultural factors influence Gen Y students from the United States and Denmark's use of mobile phones in lecture halls. When compared to Danish students, American students were significantly more preoccupied with mobile phones in class and were more distracted by the unnecessary use of mobile phones, according to this study. This behavior is detrimental, as students who use mobile phones, laptop computers, and tablets during lectures outperform those who do not use gadgets in lecture halls (Shuter et al., 2016; Duncan, Hoekstra and Wilcox, 2012). While cultural values predict consumer behavior, Perreault et al. (2015) argue that they are changing and that marketers should keep an eye on the changes and their impact on large and elusive market segment, such as Gen Y.

2.11. Conclusion

The South African and global mobile phones industry is characterised by intense competition due to the existence of dominant companies such as Samsung, Apple, Nokia, and BlackBerry. The industry has evolved from producing basic feature mobile phones to smartphones in a concerted effort to cater for technological savvy consumers. The literature (body of knowledge) was reviewed in this chapter. It concentrated on research on the subject of brand equity, consumer perceptions, smartphones, and millennials. The literature was reviewed in accordance with the study's goal of determining the key brand equity associations between consumer perceptions of smartphones among millennials.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1. Introduction

The previous chapters – the introductory chapter and literature review chapter – served as the foundational chapters of the study. The introductory chapter aimed at showcasing that the problem under investigation was significant enough to warrant the investigation. Thereafter, the literature review aimed to provide insight into the research problem with research objectives and research questions guiding the review of literature. It also focused on defining key concepts and terminologies. Most significantly, identification of numerous studies and case studies played a significant role in supporting the review of literature in this study. The subsequent chapter provides an in-depth understanding of the research methodology employed in this research including discussions around data analysis, data collection, research design, sampling and sampling method, research quality criteria, and, conclusively, the ethical considerations of the study. The chapter had chronologically portrayed these sections, while intended to mirror the method of the study.

Research methodology is a comprehensive investigation that comprises how data is to be gathered, the numerous instruments employed, and how the tools will be utilised with the intention of basically analysing data collected (Kumar, 2018). In addition, it focuses on the overall strategy that is used when incorporating the various components of the study coherently and logically. As mentioned by Clow and James (2013), a research methodology is grounded on defining the research problem and the subsequent research questions and hypotheses. Furthermore, Zikmund, Babin, Carr and Griffin (2013:64) define research methodology as "a master plan that specifies the methods and procedures for collecting and analysing the needed information". Bairagi and Munot (2019) confirm this, postulating that research methodology is gathering of facts, validating them, and coming to new realities. It includes a wide range of tools and techniques for systematic and scientific use in research. It is of high importance that the researcher highlights that this study was conducted during the COVID-19 pandemic. The methodology used, sampling techniques, data collection method and the responses by the target population were subject to the limitations brought by the pandemic, South African National Disaster Act, 2002 (Act no 57 of 2002) and the lockdown rules and regulations imposed by the South African government in line with the National Disaster Act, 2002.

3.1.1. Research Design

According to Bhattacherjee (2012), a research design is defined as a 'blueprint' for pragmatic research which aims to answer research questions or to test hypotheses. Research design can either take the route of being descriptive, explanatory, or exploratory (Bhattacherjee, 2012). In a quantitative or qualitative study, exploratory research is typically conducted to establish a primary viewpoint on a specific phenomenon of interest (Antwi and Hamza, 2015). On the other hand, the explanatory research design is suitable when examining the causes, effect, and outcome of a specific phenomenon (Asad, Hassan, Sherwani, Abbas, Shahbaz, and Soomro, 2019). The descriptive research design is used for the comprehensive description of a phenomenon (Bhattacherjee,2012). Furthermore, research design determines and describes the characteristics of various variables within the study, as is typical in qualitative research. Furthermore, it focuses on describing what is known as the critical aspect of the variable of interest in a real-life situation (Bhattacherjee, 2012). As a result, it is critical to have a well-thought-out research design that contributes to the validity and credibility of the research findings (Wiid and Diggines, 2010).

This study employed explanatory research design. Explanatory research design is when the research design focuses on explaining the phenomenon under enquiry and attempts to answer the what, how and why questions. It is used to explain patterns of relationships between variable experiments and questionnaires and surveys are the most popular techniques used to collect data in this design.

3.1.2. Research Approaches

Research approaches can be divided into quantitative, qualitative, and mixed methods. These approaches have various sub-sectional research methods incorporated in each of them. Rogerson (2019) defines quantitative research as being able to "quantify the initial problem employing methods that generate numerical data or data that can be transcribed into usable statistics. It is used to quantify attitudes, opinions, behaviours, and other defined variables." In accordance with Bhattacherjee (2012), quantitative methods rationalise a phenomenon through numerical evaluation of data collected through data collection tools such as questionnaires and surveys. In essence, the quantitative method concentrates on gathering statistical figures to describe a phenomenon.

On the other hand, a qualitative research approach uses a different approach when conducting scientific inquiry than a quantitative research approach does. Even though the stages, and some of the processes, are almost the same, a qualitative method is distinctive as it uses text and image data (Creswell and Creswell, 2017). Qualitative research utilises interviews, documents, observations, and surveys. Qualitative researchers also focus on seeking a better understanding of the participants rather than trying to fit responses into predetermined categories with limited room for qualifying or explaining the choices made by the participant (Braun, Clarke, Boulton, Davey, and McEvoy, 2021)

For the purpose of this study the researcher will utilise a quantitative research approach. The quantitative research method depends on using techniques that produce numerical data and hard facts leading to the discovery of reliable and credible information. Furthermore, it also focuses on establishing cause and effect relationships between two variables with the use of statistical methods (Ahmad, Wasim, Irfan, Gogoi, Srivastava, and Farheen, 2019). In addition, Barham (2015) suggests that quantitative research aims to establish a clear-cut representation of the thoughts which the respondents hold. Therefore, it creates a copy of reality and then tries to find out whether that representation is true or not. This approach has been implemented solely because it allows the researcher to measure the distinct variables, which can be utilised to support the generalisability of the outcomes of the study. In this study, a quantitative data collection instrument will be utilised in the form of a questionnaire.

3.1.4. Study Site

The study will be conducted in Pietermaritzburg and specifically within the campus of the University of KwaZulu-Natal. The researcher chose the location due to ease of access to data collection.

3.2. Target Population

Target population as defined by Kelley-Quon (2018) as a body of individuals, animals, and objects who possess the same qualities or characteristics. It is imperative in any research project conducted that an appropriate target population is ascertained (Stutterheim and Ratcliffe, 2021). This is because a comprehensive population allows the researcher to acquire sound results (Zikmund, Babin, Carr, and Griffin, 2013). The target population of interest in this study was the undergraduate and post-graduate students at the University of KwaZulu-Natal (Pietermaritzburg) who were born between 1982 and 1996 and were defined as millennials (Taylor, 2016). The University of KwaZulu-Natal (Pietermaritzburg campus) has about 2 314 millennials (students registered in 2021 who have smartphones and are between the ages of 24 and 39) (Institutional Intelligence Department, 2021). During the process of data collection, the target population was on lockdown. They were prevented from being on university premises and from attending any social gatherings. However, the researcher made a conscious effort to reach out to the target population and sample it, ensuring that only those who met the required characteristics participated in the study.

3.3. Sample Size

The study population was the millennials in University of KwaZulu-Natal (Pietermaritzburg campus), and the sample frame was drawn from the 2 314 registered millennial students at the University of KwaZulu-Natal (Pietermaritzburg campus). The sample size was determined using the Gill, and Johnson, Clark (2010) table. A sample of approximately 330 students was selected to be respondents. However, due to the unprecedented COVID-19, in accordance with the rules and regulations of the University of KwaZulu-Natal and Ethics Committee restrictions, the sample size was drastically reduced to 165 respondents . This can be observed in Table 3.1.

Bibliography

There are no sources in the current document.

Table 3. 1: "Sample size based on Desired Accuracy with Confidence Level of 95%."

	Variance of the population P=50%		
	Confidence level=95% *Margin of error*		
Population Size	5	3	1
50	44	48	50

75	63	70	74
100	79	91	99
150	108	132	148
200	132	168	196
250	151	203	244
300	168	234	291
400	196	291	384
500	217	340	475
600	234	384	565
700	248	423	652
800	260	457	738
1000	278	516	906
1500	306	624	1297
2000	322	696	1655
3000	341	787	2286
5000	357	879	3288
10000	370	964	4899

Source: (Gill et al., 2010).

3.4. Sampling Techniques

According to Farhady and Movahedi (2013), the sampling technique can be described as a process of identifying the characteristics of an entire population. There are two categories of sampling techniques namely, probability and nonprobability sampling techniques. Sekaran and Bougie (2019) denotes that probability sampling techniques use random selections, and these techniques provide each unit in the target population an equal opportunity of being selected.

Due to the quantitative nature of this study, the probability sampling technique was used. For the purpose of this study, in line with probability research techniques, a simple random sampling method was adopted. In order to comply with COVID-19 restrictions, which included the shutting down of South African universities and the implementation of social distancing, the researcher created an online questionnaire using Microsoft forms. This questionnaire was made available for respondents to complete using their smartphones and computers. The researcher used the simple random technique to collect data and appealed for respondents to complete the questionnaire online after online classes had ended and for respondents to share the link with other students who fit the described criteria. An inclusion criterion respondents in this study was only being a millennial aged between 24 and 39 years old and having ownership of a smartphone. The method of data collection was an online administration of the questionnaire. Some of the questions were closed-ended questions requiring a yes or no answer while in other instances, the respondents responded through a score (five-point Likert scale).

3.4.1. Data Collection Techniques

Data collection is the gathering information from primary sources or secondary sources. Primary data can be described as any type of data that the researcher can go out and collect on their own (Business Dictionary,2020). Examples of this type of research include surveys, interviews, observations, ethnographic research, and questionnaires (Fallon, 2019). Business Dictionary (2020) explains primary research as data that is gathered directly from first-hand experience whereas secondary data comprises data that has been collected for specific reasons but can be reused for a different purpose or in another study (Simon and Goes, 2013).

According to Chu and Ke (2017), the primary data collection methods encompass three commonly used methods. These are observation, interview, and questionnaire.

- **Observation:** this method focuses on the manner in which the subjects are observed within their environment. Thereafter, the outcomes are verified for reliability purposes. The usage of this method is focused on collecting information in communication sciences.
- **Interview method:** the researcher or interviewer poses questions to the respondents. During the interview, the respondents are able to also ask questions of the interviewer. The interviewer then records the process.
- **Questionnaire method:** this method is prominent in the collection of data. The questionnaires can be given to the respondents physically or via email. Generally, researchers prefer emails as it is cost effective and the respondents are easily accessible, even if they are living over an extended geographical area.

In this study, the questionnaire method was employed for the collection of data. The instrument used to carry out this research was a self-administered questionnaire, whereby respondents completed the questionnaire by themselves. The electronic questionnaire was sent via Microsoft forms as the respondents for this study were students from UKZN (Pietermaritzburg campus) and the researcher had to follow the COVID-19 regulations.

The main reason for using this method of data collection is its cost-effectiveness and easy accessibility. Furthermore, respondents have full control of the pace at which they answer the questions without having to feel rushed. This method also allowed the privacy of the respondents to be preserved.

3.5. Questionnaire Design

According to (Cheung, 2014), a structured questionnaire comprises a set of standardised questions with a fixed scheme whereby the respondents are required to choose a response from a predetermined scale that consists of closed-end questions. For this study, the researcher had utilised a questionnaire-based survey which had structured questions in the form of a five-point Likert scale. Most significantly, the researcher had utilised a structured questionnaire approach to generate a large number of respondents fast, effortlessly, and efficiently by using Microsoft forms. Furthermore, an added advantage of using closed-end questions on Microsoft forms was that the researcher was able to easily create, code and interpret the necessary responses pertaining to the overall brand equity of smartphones among millennials. The questionnaire consisted of forty questions which were divided into 11 sections. The sections were labelled from A to K.

"Section A : Demographic Information"

This section comprised of questions that aimed to acquire the demographic information of the participants. The demographic information included the gender, age, ethnicity, year of study, and specification of smartphone brands. Demographic information is useful in terms of understanding and explaining the phenomenon better.

"Section B: Brand Awareness"

This section presented the study's respondents with questions to probe whether brand awareness played a significant role in brand equity and consumer perceptions of smartphones among millennials.

"Section C: Brand Association"

The section investigated whether the study's respondent deemed brand association an important factor in brand equity and consumer perceptions of smartphones among millennials.

"Section D : Brand Loyalty"

The questions under this section helped the researcher to understand whether brand loyalty plays a key role in brand equity and consumer perceptions of smartphones among millennials.

"Section E : Brand Image"

This section was aimed at giving the researcher clear insight into whether brand image plays a key role in brand equity and consumer perceptions of smartphones among millennials.

"Section F : Perceived Quality"

The section investigated the extent to which perceived quality plays a key role in brand equity and consumer perceptions of smartphones among millennials.

"Section G : Product Pricing"

The section investigated the extent to which product pricing plays a key role in brand equity and consumer perceptions of smartphones among millennials.

"Section H : Product Packaging"

The section focused on identifying the important role of product packaging on brand equity and consumer perceptions of smartphones among millennials.

"Section I : Brand Values and Ethics"

The section investigated the extent to which brand values and ethics play a key role in brand equity and consumer perceptions of smartphones among millennials.

"Section J : Online and Offline Presence "

This section aimed at giving the researcher clear insight into the key role online and offline presence plays in brand equity and consumer perceptions of smartphones among millennials.

Table 3. 2 : Operationalisation of this study's paradigms

Paradigms Theoretical definition	Operational definition*	Sources from which scales were adapted
"Brand awareness" "The degree to which consumers remember or identify a specific brand"	I think of my current smartphone brand first among many smartphone brands.	(Shen, *Yuan, Zhang, Q., and Zhao,* , 2014: 28)
	I heard of my current smartphone brand before using it.	(Shen *et al.,* 2014:28)
	I am easily aware of the symbol or logo of the smartphone brand I use.	(Severi and Ling, 2013:125)
"Brand association" The observations and associations consumers have about a brand	I typically go for my smartphone brand because it is highly reliable.	(Baalbaki and Guzmán, 2016)
	The smartphone brand I use reflects my individuality (e.g., fun, practical, and technical).	(Shen *et al.,* 2014:28)
	I feel my smartphone brand improves how I am perceived by my peers.	(Deng *et al.,* 2010)

"Brand loyalty" "The extent to which a consumer constantly buys the same product over time rather than purchasing from numerous suppliers"	When I purchase a smartphone, my current smartphone brand is always my first choice.	(Shen *et al.,* 2014:28)
	"If I were to buy another smartphone in future, I would choose my current smartphone brand again."	(Shen *et al.,* 2014:28)
	"I would recommend my current smartphone brand to my family and friends."	(Shen *et al.,* 2014:28)
	My current "smartphone makes me want to get accessories for it and other complementary products like apps."	(Shen *et al.,* 2014:28)
"Brand image" The perceptions and connotations consumers have about a brand	The brand image of the smartphone I use is more unique than that of other brands.	(Shen *et al.,* 2014:28)
	"I have a good impression of the overall image of the smartphone I use."	(Shen *et al.,* 2014:28)
	I trust the smartphone brand I use.	(Shen *et al.,* 2014:28)
	I personally feel that the smartphone brand I use is the most innovative in the market.	(Shen *et al.,* 2014:28)
"Perceived quality" The degree to which consumers	The quality of the smartphone brand I am using is high.	(Baalbaki and Guzmán, 2016)

intuitively assess the product's overall quality	The performance of my current smartphone is high.	(Baalbaki and Guzmán, 2016)
	"I am most likely to continue my relationship with the smartphone brand I use because it offers me longevity, reliability, and durability."	(Baalbaki and Guzmán, 2016)
	The quality of my current smartphone outperforms other competitors in the market.	(Baalbaki and Guzmán, 2016)
"Product pricing" The perceived financial profits and costs connected with purchasing or consuming a product	Relative to other smartphones, my current smartphone brand is a good buy.	(Buil Martinez and de Chernatony 2013:116)
	The smartphone contract which I am currently under offers me good value for money.	(Buil, et al, 2013:118)
	The smartphone I purchased is reasonably priced.	(Kumar, Townsend and Vorhies, 2015:722)
	When I bought my current smartphone, I felt that I got a reasonable deal.	(Rubio, Oubina and Villasenor, 2014:292)
"Product packaging" "The science ,art and technology of enclosing or protecting products for distribution, storage, sale and use"	The design of my smartphone is visually attractive.	(Kumar *et al.,* 2015)
	My smartphone attracts my senses very much (e.g., touch, functionality, sound).	(Baalbaki and Guzmán, 2016)
	The smartphone I currently use is physically durable (waterproof, scratch resistant, and wireless charging)	(Kumar *et al.,* 2015)

“Brand values and ethics” The core values that define an organisations’ beliefs	I purchased my current smartphone because I believe that the brand values adhere to sustainability and ethical practices.	(Sondoh *et al.,* 2007)
	My current smartphone brand is important to me because I believe that the brand adheres to the environmental and ethical practices.	(Baalbaki and Guzmán, 2016)
“Online and offline presence” All activity and content that an entity or business has under their name on the Internet	My current smartphone data package allows me to monitor my online and offline activities/experience.	(Baalbaki and Guzmán, 2016)
	I use my smartphone to participate in online and offline shopping.	(Baalbaki and Guzmán, 2016)
“Overall brand equity” “The consumers’ overall attitudes towards a specific brand and their intention to” select the brand against its competitors	“Even if there is another smartphone brand as good as mine, I would still prefer my smartphone brand.”	(Yoo and Donthu, 2001:13)
	My perception of the business model that my current smartphone brand uses is economically sustainable and innovative.	(Shen *et al.,* 2014:29)
	The current smartphone brand I use is memorable and recognisable, which makes me confident about its longevity in the market.	(Shen *et al.,* 2014:29)
	My overall perception of my smartphone in regard to (e.g., price, packaging, quality, brand values and online and offline presence) is high.	(Shen *et al.,* 2014:29)

		Even when the cost of other smartphones are offered at a reduced price or are on promotion, I will "still prefer to buy" my smartphone brand.	(Yoo and Donthu, 2001:10)
		"Even when the price of other phones are reduced, I will still prefer to buy" my smartphone brand.	(Yoo and Donthu, 2001:12)

"Paradigm items were measured on a five-point Likert scale, with 1 and 5 representing "strongly agree" and " strongly disagree" respectively".

Source: Researcher's own operationalisation of this study

3.6. Distribution of Questionnaires

As declared earlier, the target population of this study comprises students from the University of KwaZulu-Natal, (Pietermaritzburg campus). Due to the current COVID-19 pandemic, and the rules and regulations set by the University of KwaZulu-Natal, the researcher adhered to not physically handing out copies of the questionnaire, but rather using online platforms to distribute questionnaires to the sampled population.

3.6.1. "Handling non-response bias"

According to Bhattacherjee (2012), non-response bias is the non-responsiveness of the respondents to the questionnaires that were handed to them. Moreover, having a substantial number of respondents can prevent the results of a study from being generalized. It is imperative to mention that the response rate achieved in this study was 97 percent (as shown in chapter four). A set of measures were put in place to ensure the non-response bias rate was avoided at all costs in this study.

3.6.2. "Respondent-friendly questionnaire"

The questionnaire was set in such a manner that the questions asked were distinct, brief, and straight to the point. They were also easy to comprehend. The questions were designed in this manner in order to avoid the respondents having to take up too much of their time reading, understanding, and filling out the questionnaire.

3.6.3 "Confidentiality and privacy"

According to Kaiser (2009), when collecting data from prospect participants it is imperative that the researcher maintains high levels of confidentiality and privacy when presenting detailed personal information of respondents. Therefore, the researcher carefully considered the audience for this study and ensured to re-envision the informed consent process to avoid any confidentiality and privacy dilemmas. An informed consent form was provided to all respondents beforehand, and the respondents were debriefed that their personal information will be safeguarded. Most significantly, the respondents were reassured that their information will not be revealed to any third parties during and after the data collection was completed.

3.7. Data Analysis

By definition, descriptive statistics are used to encapsulate and describe the data obtained from a sample of respondents (Hair Ortinau, and Harrison, 2010). The main functionality of descriptive statistics is to provide a basic overview of the sample, measures, graphics, and quantitative analysis of data (Kautish and Sharma, 2019). On the other hand, Krefeld-Schwalb, Witte, and Zenker (2018) state that inferential statistics are utilised for getting to an endpoint that surpasses the actual data on its own. The main purpose of inferential statistics is to infer from the sample data what the actual population might think, judge, or observe amongst each other. Furthermore, descriptive statistics was utilised to examine the data together with frequencies and percentages included. The total mean scores and standard deviation of the dimensions of brand equity and consumer perceptions was assessed.

Inferential statistics was led by the utilisation of regression and correlation analysis to determine the relationship that exists between the dependent and independent variables. Therefore, the researcher utilised both descriptive and inferential statistical measures to ensure no data is distorted. The questionnaire was divided into several sections with subheadings which included major themes such as demographic information, information on smartphones the participants own, five dimensions of brand equity, and consumer perceptions dimensions.

Data collected was coded, edited, and analysed using Statistical Package for Social Science (SPSS). Descriptive statistics was utilised to analyse data by use of frequencies and percentages. The overall mean scores and standard deviations of brand equity dimensions and millennials consumer perceptions was computed and evaluated. Inferential statistics were conducted using cross-tabulations and correlation analysis to determine the relationship between the dependent and independent variables. Lastly, the essence of reliability was tested through Cronbach Alpha statistics.

3.8. Reliability and Validity

According to Kumar (2018), reliability and validity are defined as hypotheses used to assess the substance of research. The main purposes of these concepts are to highlight the efficiency of a method, technique, or test measure. In simple terms, reliability is regarded as the consistency of a measure, and validity the accuracy of a measure Kumar (2018). The importance of reliability and validity in a quantitative research design comes into play in the formulation of a research design, research methodology, and the drawing up of the results.

Reliability for this study was estimated by comparing different versions of the same measurement. On the other hand, validity is not easy to measure but can be approximated by drawing up a comparison with other data or theory that is relevant (Scribbr, 2019). The researcher utilised internal consistency in this study to establish whether there was a strong correlation between brand equity and consumer perceptions of smartphones amongst millennials. The main aim was to establish whether the researcher could get the same results from different facets of the questionnaire, which was designed to measure the same phenomenon. Reliable sources were also used in this study. A comprehensive reference is provided in the bibliography section of this research. Where required, a section for appendices is also attached. All information collected was analysed and paraphrased. Furthermore, statistical data and other relevant data used is provided and acknowledged accordingly. It was imperative that the validity of the research instruments of this study was maintained and so the questionnaire was sent to the research committee of the University of KwaZulu-Natal for scrutiny. Thereafter, the researcher implemented the recommendations of the committee before commencing with the data collection process.

3.8.1. Reliability

There are four types of reliability tests including "internal consistency reliability, test-retest reliability, split-half reliability and inter-observer reliability" (Sekaran and Bougie, 2019).

"Internal consistency reliability": focuses on measuring the uniformity which exists between the numerous items of the same hypothesis (Sekaran and Bougie, 2019).

"Test-retest reliability": represents the dependability between two dimensions of the same survey disseminated to the same sample size at a different time (Sekaran and Bougie, 2019).

"Split half reliability": focuses on measuring the consistency between two halves of a hypothesis measurement (Sekaran and Bougie, 2019).

"Inter-observer reliability": represents the consistency between two unbiassed observers of the same hypothesis (Sekaran and Bougie, 2019).

In this study, Cronbach's alpha and reliability values were utilised to measure the internal consistency of the scale items. These values ranged between 0 and 1, and the closer the value is to 1, the greater the internal consistency (Abakah-Anaman, 2018). The Cronbach's alpha and reliability results obtained for this study's constructs will be further discussed in Chapter 4.

The questionnaire consisted of section A, which contained questions pertaining to demographic details of respondents (gender, age, year of study and brand of smartphone owned) will be presented in frequency distribution tables with bar graphs. Furthermore, a comprehensive summary of respondents' responses to various measurement scale questions in section B to K. The key concepts was namely: "brand awareness," "brand association," "brand image," "brand loyalty," "perceived quality," "product packaging," "product pricing," "brand values and ethics," "online and offline presence," and "overall brand equity" was measured. The mean and standard deviation to define the percentage of respondents who responded to specific questions in a particular manner was measured as well. In addition, the ten constructs that were measured encompassed percentages of the degree to which respondents had "agreed" or "disagreed" on a five-point Likert scale and was represented in the descriptive section of this study. The results exhibited in data analysis chapter (chapter four) of this study.

3.8.2. Validity

According to Bhattacherjee (2012), there are three types of validity which include content validity, criterion-related validity, and construct validity.

"Content validity": represents the degree to which a measuring tool stipulates a 'true' depiction of the hypotheses measured (Bhattacherjee, 2012).

"Criterion-related validity": focuses on an individual's ability to predict the results of the present situation of a research study (Bhattacherjee, 2012).

"Construct validity": the degree to which the result of a measurement associates with the other hypotheses with different measuring tools. For example, to assess the construct validity, one evaluates other paradigms with the result given by the measuring tool (Bhattacherjee, 2012).

This study employed construct validity to assess the quality of the research instrument. In this study, a questionnaire with structured five-point Likert scale statements was used. Hence, it was appropriate to use cross-tabulations and correlations analysis to assess the construct validity. The results are all presented in the data analysis chapter (chapter four) of this study.

3.9. Ethical Considerations

Before commencing this empirical study, the Ethics Committee at the University of KwaZulu-Natal granted ethical clearance to the researcher to conduct the following study. This was completed after the Ethics Committee at the University of KwaZulu-Natal had assessed the researcher's data collection methods as well as seen that it is ethically acceptable and does not pose any ethical issues for the participants. A gatekeeper's letter was also applied for in the School of Management, I.T, and Governance by the researcher. Thereafter, once permission was given from the director: governance and administration office of the registrar, the researcher continued with the collection of data.

According to Khamitov, Grégoire, and Suri (2020), it is imperative that researchers adopt a systematic review approach to instinctively participate with a variety of ethical issues connected with potential conflicts of interest and subjects of voice and representation.

i. "Disclosure"

The researcher will ensure, before commencing with the data collection process, to explain in great detail the main purpose of the study to respondents. Most significantly, the various constructs and vocabularies will be briefly explained to the respondents before the questionnaire is completed. The average time that it is expected to take to fill in the questionnaire will also be communicated to the respondents before they start the process (Bahige, 2019).

ii. "Voluntariness of participation"

The respondents filled out the questionnaire and were given an informed consent form clearly stipulating that their participation in this study was voluntary, confidential, and anonymous. The respondents were also debriefed that they are at liberty to withdraw their participation from the study at any given point should they feel uncomfortable in answering any questions, and they were reassured that not participating in the study held no bearing or implication of their academic results (Bahige, 2019)

iii. "Anonymity and confidentiality"

The anonymity of the respondents was preserved, and they were reassured that their identities in the section containing the analysis of the results obtained was not revealed to any third parties. Most significantly, student names and student numbers were not on the questionnaire to ensure anonymity of respondents, and other codes were utilised to identify the respondents instead – this includes age or gender (Bahige, 2019). Furthermore, the questionnaires and the data that was collected from the empirical study will be safeguarded "at the School of Management, IT and Governance for a period of five (5) years in compliance with the Ethical Clearance that was granted for this research project".

3.10. Conclusion

This chapter focused on the methodology that was employed to conduct this research study. A quantitative approach was adopted in this study, and a probability sampling technique, namely snowball sampling technique, was employed to select the sample and questionnaires were used to collect the data for the study. Most significantly, a concise overview of the questionnaire and various constructs in this study was presented alongside the fundamental etiquette used to handle non-response bias. The chapter concluded with a brief discussion of the ethical considerations that the researcher ought to adhere to when collecting data. The next chapter (data analysis) focuses on the interpretation of the data

CHAPTER FOUR: FINDINGS AND ANALYSIS

4.1. Introduction

The previous chapter provided a comprehensive presentation of the research methodology that was utilised to administer this study. The chapter showed the data collection tool that was depicted, as well as the sampling techniques employed. The chapter also provided a representation of the target population and methods of analysis used in this study. This chapter presents the responses obtained from the respondents, as well as their analysis. To begin, concise vignettes about each research respondent are stipulated. Every vignette contains information pertaining to the respondent's gender, age, level of study, and brand of smartphone ownership at the time of data collection. Most significantly, an inclusive report was conducted to display how the questionnaire was tested for reliability and consistency. Furthermore, this chapter focused on presenting the inferential and descriptive statistics of the data collected. This chapter focuses solely on presenting the results collected from the respondents. Thereafter, a comprehensive interpretation of the results will be presented in chapter five.

4.2. Response Rate

The sample size for this research was designated in traditionalism with the Gill *et al*. (2010) table. At the time the study was conducted, the total target population of millennial students at UKZN (Pietermaritzburg campus) was 2 314 (Institutional Intelligence Department, 2021). As indicated in the table, the required sample size for a population between the range of 2 200 and 2 400 is 331. However, due to being in unprecedented times with the COVID-19 pandemic and ethical regulations, the researcher had dropped the sample size to 165 respondents. Therefore, 165 questionnaires were distributed to millennial students of UKZN (Pietermaritzburg campus). The data collection process was over a span of one and a half months and, out of the 165 distributed questionnaires, 160 were received and usable, resulting in a 97% response rate. This is observed in (Figure 4:1).

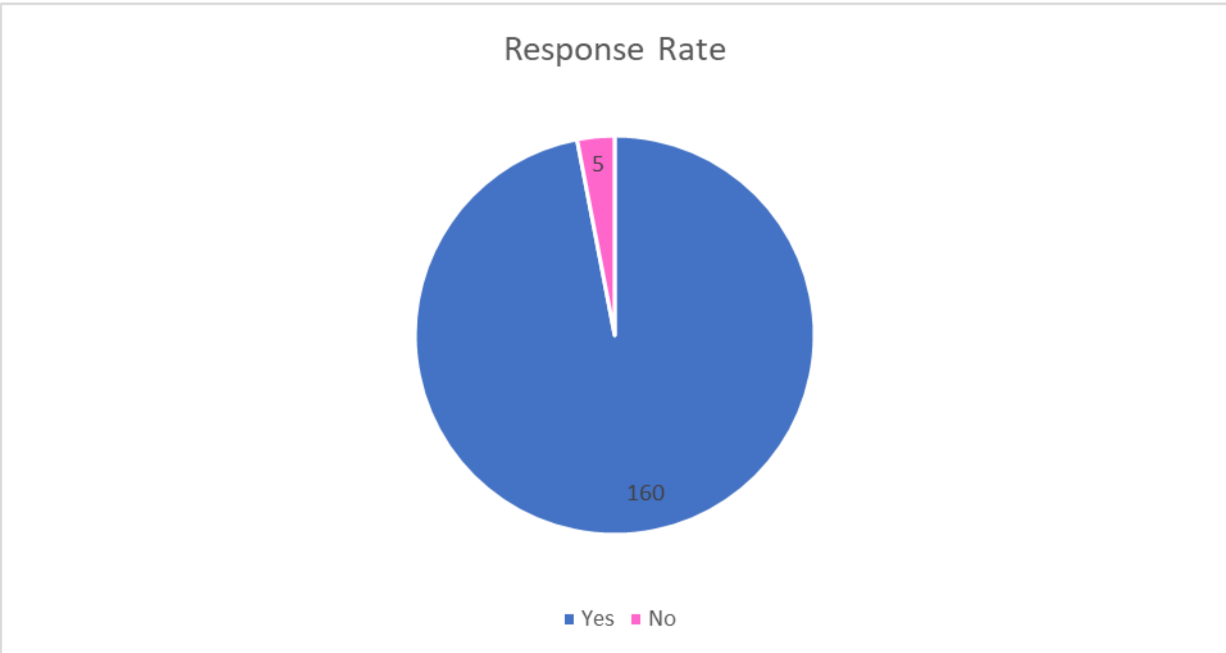


Figure 4. 1: Response rate

4.3. Consistency and Reliability

The consistency level of the collected data was attained by conducting a Cronbach alpha reliability test. The Cronbach alpha reliability test is performed to determine whether the instruments utilised in the data collection stage, in this case the questionnaires, were reliable and without omissions (Sekaran and Bougie, 2019). Furthermore, Sekaran and Bougie (2019) state the possibility of attaining more reliable responses is higher when the value of the Cronbach alpha is close to 1. A research instrument is considered reliable if its Cronbach alpha's value is greater than 0.7 (Nunnally *et al.,* 1967). A reliability test was performed in SPSS for the instrument that was used in this study and a Cronbach alpha of 0.978 was obtained and this can be observed in (Table 4:1). This is an indication that the responses and items in the questionnaire are reliable and consistent.

Table 4. 1: Reliability statistics

Cronbach's Alpha	No. of Items
.978	35

4.4. Distribution of Data: Normality

Kim (2013) suggests it is imperative to examine the normality of a data set prior to conducting a statistical analysis. Therefore, researchers ought to perform a normal distribution process which is known as a normality test. It is crucial to perform parametric and non-parametric tests to examine whether the data follows a normal distribution. Parametric tests can be conducted by utilising the example of the analysis of variance (known as ANOVA) and t-tests. On the other hand, if the data does not follow a normal distribution, non-parametric tests are most suitable to be conducted, namely chi-square, Kruskal-Wallis, Friedman, and the Mann-Whitney U test. In this study, the Kolmogorov Smirnov and the Shapiro-Wilk tests in SPSS were employed to test the normality of data. In accordance with Statistics (2013), "there are two hypotheses that are used to test for the normality: the variables being tested follow a normal distribution (H0), and the variables being tested do not follow a normal distribution (H1); with H0 being the null hypothesis and H1 being the alternative hypothesis". In simple terms, Kowalski (1972) suggests that for a data set to be deemed as normally distributed, both Shapiro-Wilk and Kolmogorov tests must have a significant value greater than 0.5. On the other hand, if the significant values are less than 0.5, then such data is believed to follow a non-normally distribution. The significant value attained was less than 0.05, which indicates that the data employed for this study was not normally distributed. For this reason, the chi-square tests (non-parametric tests) were conducted on the data sets.

4.5. Descriptive Statistics of the Study

The demographic profile of the 160 respondents who completed the questionnaire is provided in a brief summary. The descriptive statistics of this study include the following: gender, age, ethnicity, year of study and the smartphones the respondents own. This is followed by a discussion of respondents' responses to measurement items designed to measure the main constructs of this study.

4.5.1. Gender of respondents

The following section focuses on the results obtained regarding the gender of the respondents who completed the questionnaire. This can be observed in (Table 4.2) whereby of the 160 respondents, 37.5% were female, 41.3% were male, 18.1% were non-binary, 2.5% did not wish to answer, and the remaining 0.6% of the respondents were other. This distribution reflects the gender structure of the population of South Africa (Statista 2016:17). In addition, a greater ratio of males were willing to partake in the study.

Table 4. 2: Gender range of respondents

Gender	Frequency	Percentage
Do not wish to answer	4	2.5%
Female	60	37.5%
Male	66	41.3%
Non-Binary	29	18.1%
Other	1	0.6%
Total	160	100%

4.5.2. Age of respondents

The following section focused on the results obtained regarding the age of the respondents who completed the questionnaire. This can be observed in (Table 4.3) whereby out of the 160 students who participated in this study, 31.3% of the respondents were between the age of 24 to 26, 28.7% of the respondents were between the age of 27 and 31, 20% of the respondents were between the age of 32 and 35, and the remaining 20% of the respondents were between the age of 36 and 39. In terms of age, 100% of respondents were between the ages of 24 and 39 years, because that was the targeted age of the study, and respondents who did not fall in this age category were not given a chance to participate through a screening question.

Table 4. 3: The age of respondents

Age	Frequency	Percentage
24-26	50	31.3%
27-31	46	28.7%
32-35	32	20%
36-39	32	20%
Total	160	100%

4.5.4. Respondents' year of study

The following section focused on the results obtained regarding the year of study of the respondents who completed the questionnaire. This can be observed in (Table 4.5) whereby the respondents in this study were millennial students of UKZN (Pietermaritzburg campus). They were from multiple different colleges including Agriculture, Engineering and Science, Health Sciences, Humanities and Law and Management studies, and ranged between first year and PhD level students. The statistical results obtained from this study showed that 0.6% of the respondents were first year students, 1.3% of the respondents were second year students, 20.6% of the respondents were third year students, 23.1% of the respondents were Honours students, 30% of the respondents were Masters students, and the remaining 24.4% of the respondents were PhD students.

Table 4. 5: The year of study of respondents

Year of Study	Frequency	Percentage
1st Year	1	0.6%
2nd Year	2	1.3%
3rd Year	33	20.6%
Honours	37	23.1%
Masters	48	30%
PhD	39	24.4%
Total	160	100%

4.5.5. Respondent's brand of smartphone ownership

The following section focused on the results obtained regarding the respondents, who completed the questionnaire, brand of smartphone. This can be observed in (Table 4.6) whereby the respondents to this study were millennial students of UKZN (Pietermaritzburg) campus who owned a smartphone. In Section A of the questionnaire, respondents were requested to specify the name of smartphones they owned. This was stipulated to establish which brands are predominately utilised by millennials students of UKZN (Pietermaritzburg) campus. The smartphone brands used by the respondents included Apple, Essential

Phone (PH-10), Hisense, Huawei, LG, Nokia, Samsung, Stylo and Xiamoi. The statistical results obtained from this study showed that 22.5% of the respondents owned an Apple smartphone, 0.6% of the respondents owned an Essential Phone (PH-10) smartphone, 3.1% of the respondents owned a Hisense smartphone, 28.7% of the respondents owned a Huawei smartphone, 4.4% of the respondents owned an LG smartphone, 6.9% of the respondents owned a Nokia smartphone, 31.9% of the respondents owned a Samsung smartphone, 0.6% of the respondents owned a Stylo smartphone, and the remaining 1.3% of the respondents owned a Xiaomi smartphone. In a study piloted by Romaniuk and Nenycz-Thiel (2016) regarding smartphone brand ownership across developing markets (i.e., India, China, Russia, Brazil, Indonesia, and South Korea), Samsung was recorded as the most owned phone brand in all the studied countries. Therefore, it is interesting to note that even in South Africa specifically at UKZN (Pietermaritzburg Campus) – Samsung was the dominating smartphone brand among millennial students with a (31.9%).

Table 4. 6: The respondent's brand of smartphone ownership

Smartphone Brand	Frequency	Percentage
Apple	36	22.5%
Essential Phone (PH-10)	1	0.6%
Hisense	5	3.1%
Huawei	46	28.7%
LG	7	4.4%
Nokia	11	6.9%
Samsung	51	31.9%
Stylo	1	0.6%
Xiaomi	2	1.3%
Total	160	100%

4.6. Construct means and corresponding standard deviations

This study comprises 10 constructs that were measured to calculate the validated items. The main purpose of this section was to report on the means and standard deviations of these constructs. The questions posed to the respondents were based on "brand awareness," "brand association," "brand loyalty," "brand image," "perceived quality," "product pricing," "product packaging," "brand values and ethics," "online and offline presence," and "overall brand equity." The responses to the questions of each construct were given on a five-point Likert scale of "Strongly agree," encrypted as 1, to "Strongly Disagree", coded as 5. The following presents the responses of respondents to the questions of each construct.

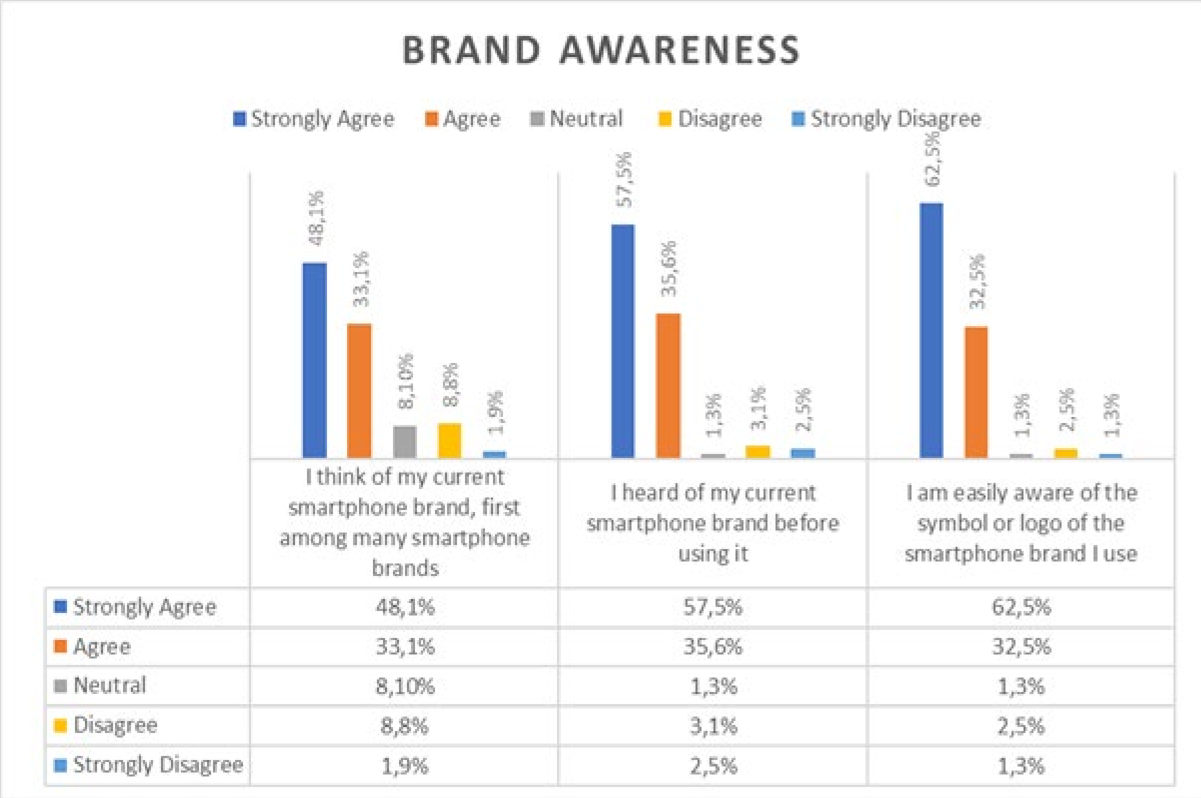


Figure 4. 2: Brand awareness responses of the questionnaire

4.6.1. Mean and standard deviations for brand awareness

The overall mean and standard deviations calculated for brand awareness were 1.62 and 0.88, respectively. 81.2% of the respondents indicated that they think of their smartphone brand first among many smartphone brands while 10.7% of the respondents indicated that they do not think of their smartphone brand first among many smartphone brands. On the other hand, 93.1% of respondents had heard of their current smartphone brand before using it while 5.6% of respondents indicated that they had not heard of their current smartphone brand before using it. 95% of respondents were easily aware of the symbol or logo of the smartphone brand that they use and 3.8% of respondents were not easily aware of the symbol or logo of the smartphone brand that they use. Most significantly, this reveals that respondents were fairly aware of their smartphone brands and were able to recall the symbols and logos of their smartphone brands.

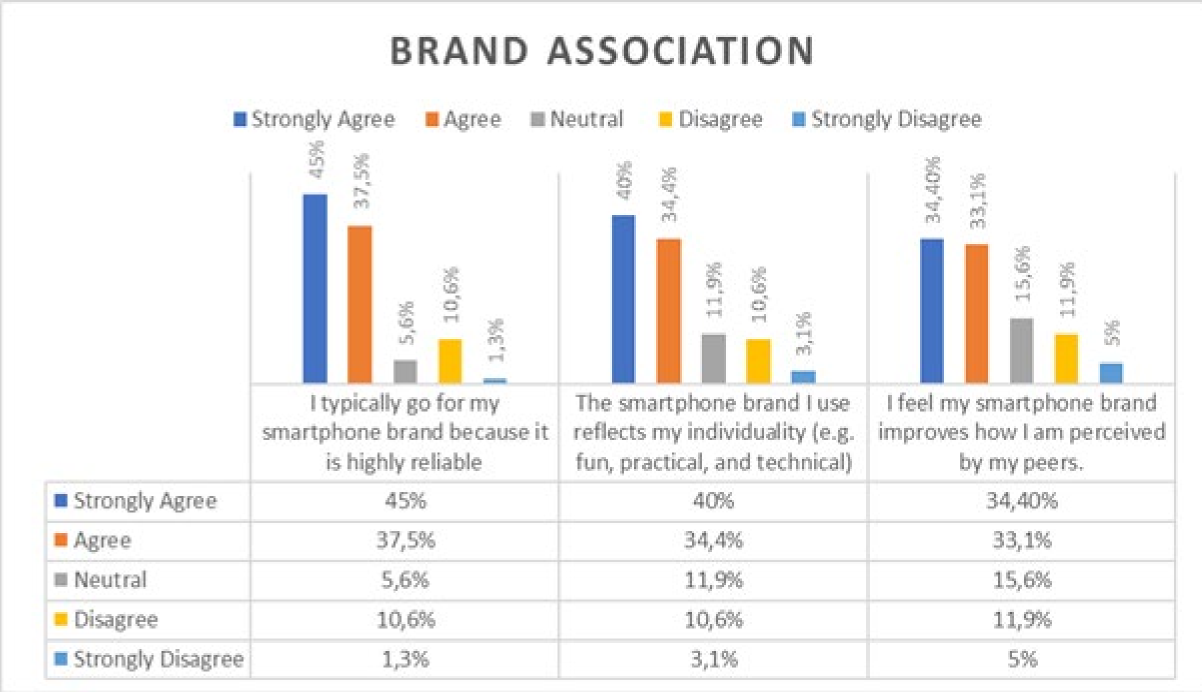


Figure 4. 3: Brand association responses of questionnaire

4.6.2. Mean and standard deviations for brand association

The overall mean and standard deviations generated for the brand association construct were 2.02 and 2.50, respectively. This signifies consumers are satisfied with the brand. 82.5% of the respondents indicated that they typically go for their smartphone brands because it is highly reliable whereas 11.9% of the respondents indicated that they do not typically go for their smartphone brands because it is highly reliable. On the other hand, 74.4% of respondents believe that their smartphone brand reflects their individuality, and 13.7% of respondents indicated that their smartphone brand does not reflect their individuality. 67.5% of respondents feel that their smartphone brand improves how they are perceived by their peers, and 16.9% of respondents indicated that their smartphone brand does not improve how they are perceived by their peers. Most significantly, this reveals that respondents have a fairly positive association of their smartphone brands, and their smartphone brands have improved how their peers perceive them.

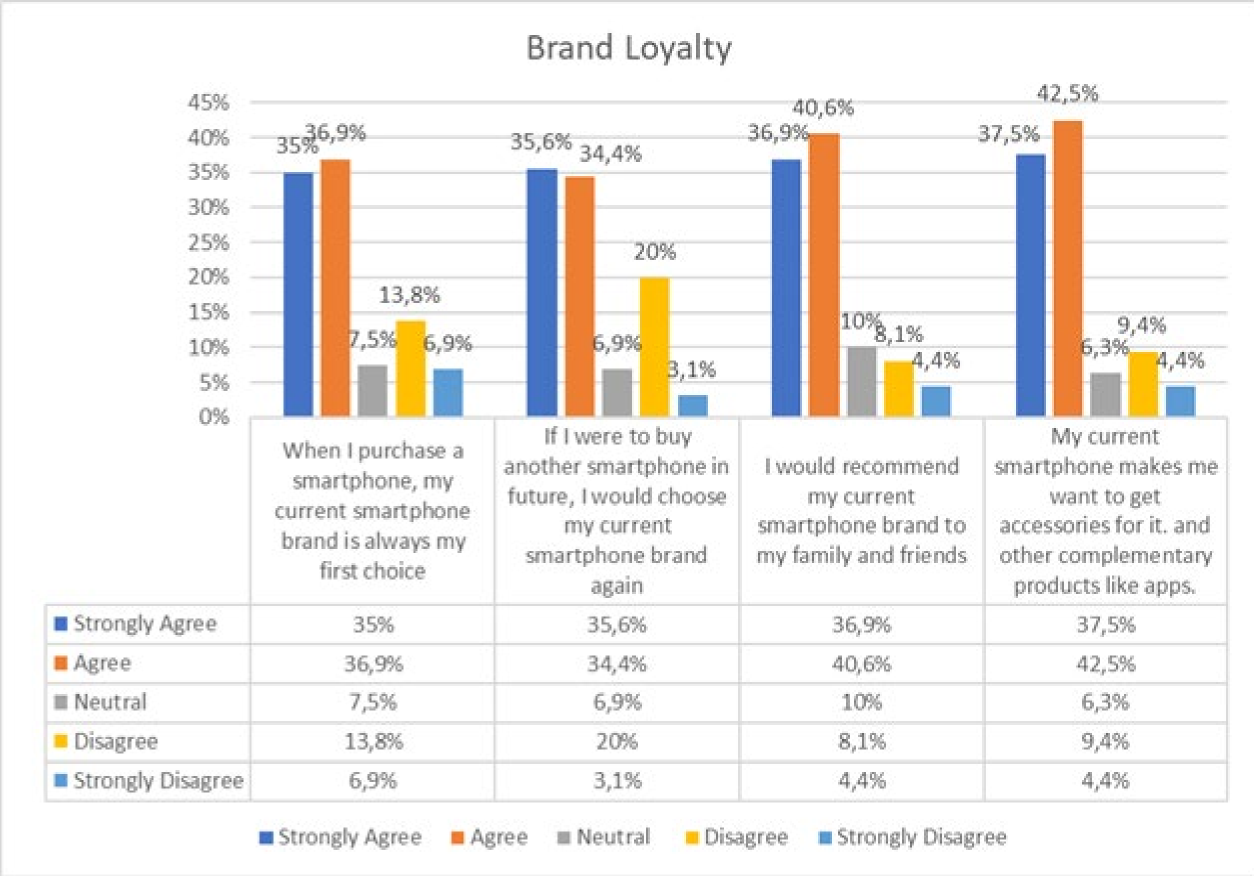


Figure 4. 4: Brand loyalty responses of the questionnaire

4.6.3. Mean and standard deviations for brand loyalty

The results obtained on the overall mean and standard deviations generated for brand loyalty were 2.10 and 1.16, respectively. This signifies the respondents are satisfied with the brand. 71.9% of the respondents indicated that when they purchase a smartphone, their current smartphone brand is always their first choice whereas 20.7% of the respondents indicated that when they purchase a smartphone, their current smartphone brand is not always their first choice. On the other hand, 70% of respondents indicated that if they were to buy another smartphone in future, they would choose their current smartphone brand again while 23.1% of respondents would not repurchase their current smartphone brand. 77.5 % of respondents indicated that they would recommend their current smartphone to family and friends while 12.5% of respondents indicated that they would not recommend their current smartphone to family and friends. Furthermore, 80% of respondents indicated that they would purchase accessories and other complementary products like apps for their current smartphone, whereas 13.8% of respondents would not purchase accessories and other complementary products like apps for their current smartphone. Most significantly, this reveals that respondents are highly loyal to their current smartphone brands and would recommend their smartphone brands to family and friends.

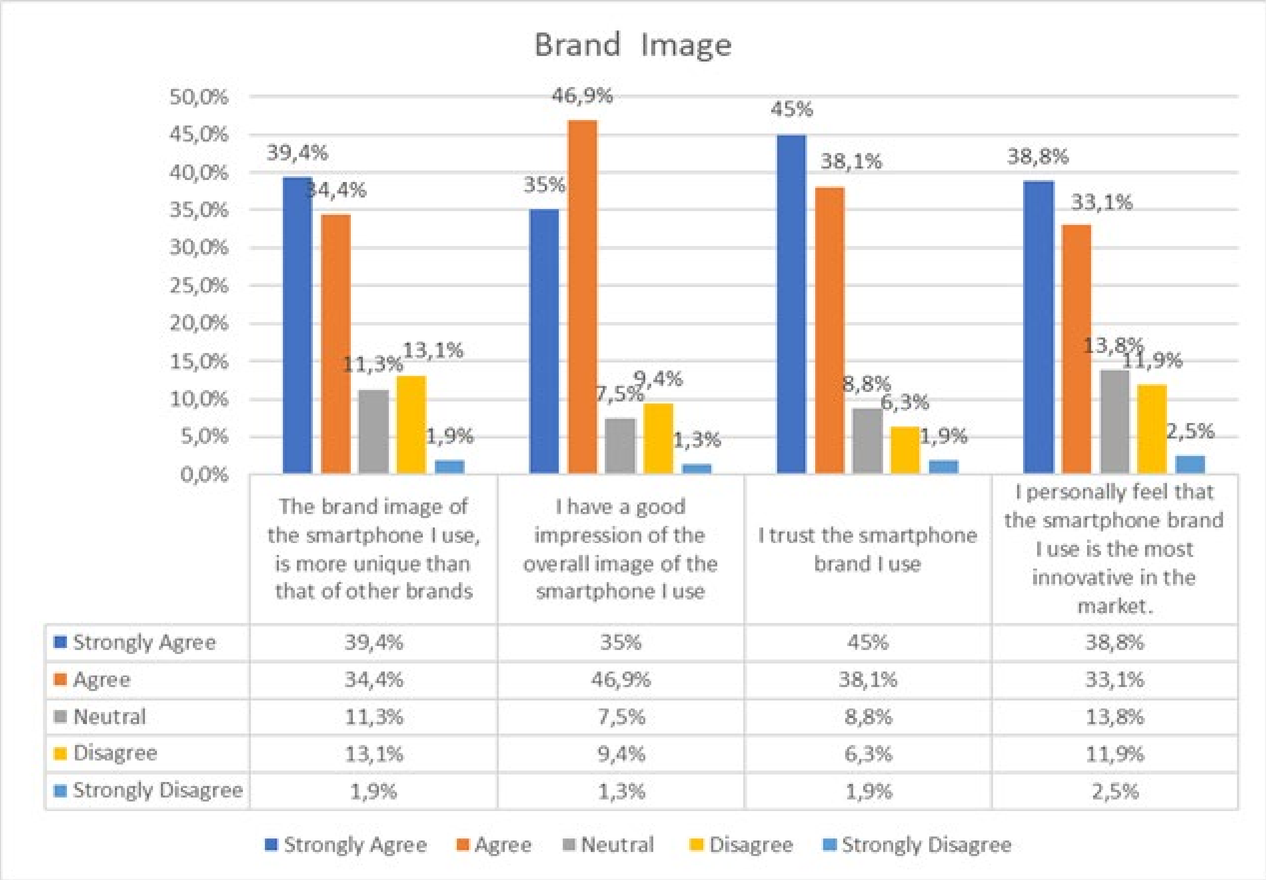


Figure 4.5: Brand image responses of questionnaire

4.6.4. Mean and standard deviations for brand image

The results obtained on the overall mean and standard deviations generated for brand image were 1.96 and 0.51, respectively. This signifies they are satisfied with the brand. 73.8% of the respondents indicated that their current smartphone brand image is more unique than that of other brands. In comparison, 15.2% of the respondents indicated that their current smartphone brand image is not more unique than that of other brands. On the other hand, 81.9% of respondents indicated that they have a good impression of the overall image of the smartphone they use while 10.7% of respondents do not have a good impression of the overall image of the smartphone they use. 83.1% of respondents indicated that they trust the smartphone they use and 8.2% of respondents indicated that they do not trust the smartphone they use. On the other hand, 71.9% of respondents indicated that they personally feel that the smartphone brand they use is the most innovative in the market, whereas 14.4% of respondents indicated that they do not feel as though the smartphone they use is the most innovative in the market. Most significantly, this reveals that respondents have a positive impression of the overall image of the smartphone they use.

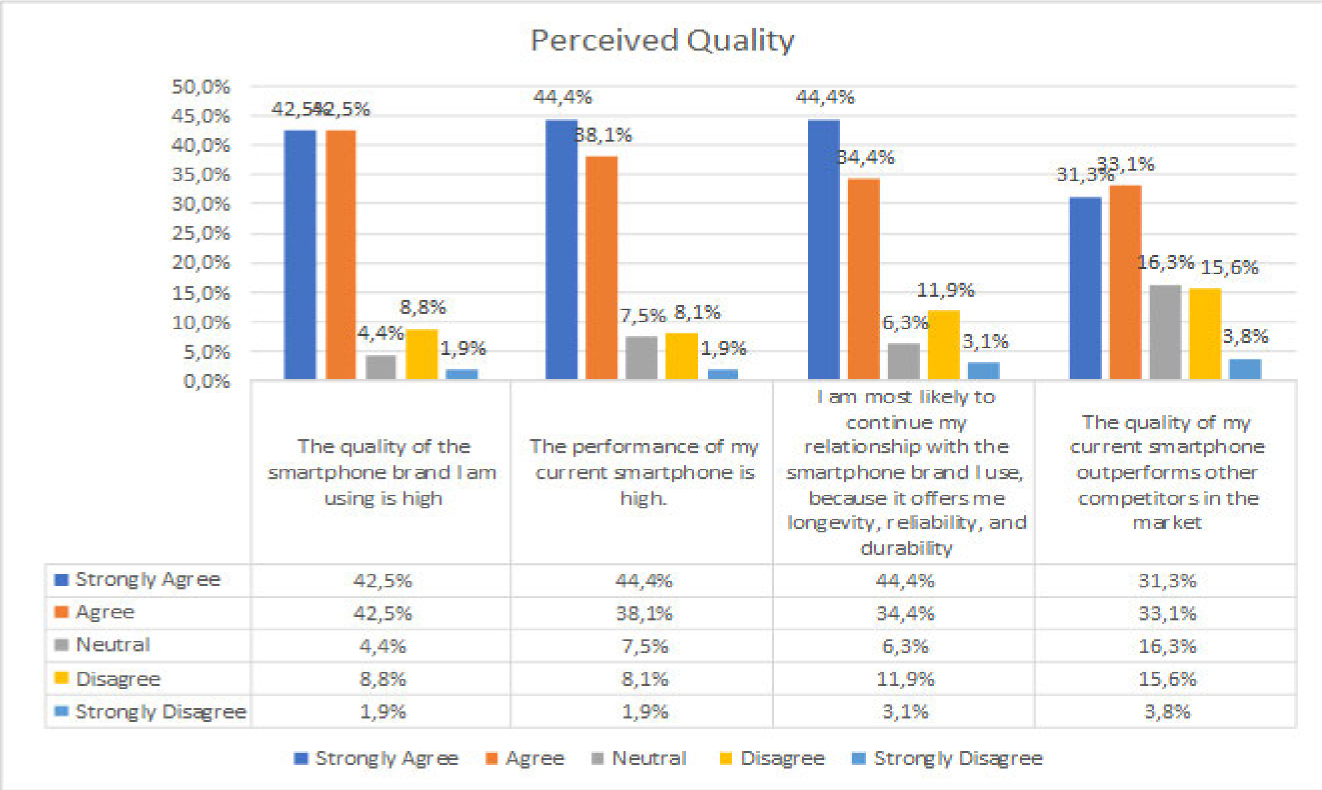


Figure 4.6: Perceived quality responses of the questionnaire

4.6.5. Mean and standard deviations for perceived quality

The results obtained on the overall mean and standard deviations generated for perceived quality were 1.98 and 1.06, respectively, thus signifying the respondents are satisfied with the brand. 85% of the respondents indicated the quality of the smartphone brand they are using is high. In comparison, 10.7% of the respondents indicated that the quality of the smartphone brand they are using is not high. Furthermore, 82.5% of respondents indicated the performance of their current smartphone is high while 10% of respondents indicated the performance of their current smartphone is not high. 78.8% of respondents indicated that they would likely continue their relationship with the smartphone brand they use because it offers longevity, reliability, and durability while 15% of respondents indicated that they would not continue their relationship with the smartphone brand they use. Moreover, 64.4% of respondents indicated the quality of their current smartphone outperforms other competitors in the market, whereas 19.4% of respondents indicated that the quality of their current smartphone does not outperform other competitors in the market. This reveals that respondents have a favourable impression of the perceived quality and performance of the smartphone brands they are currently utilising.

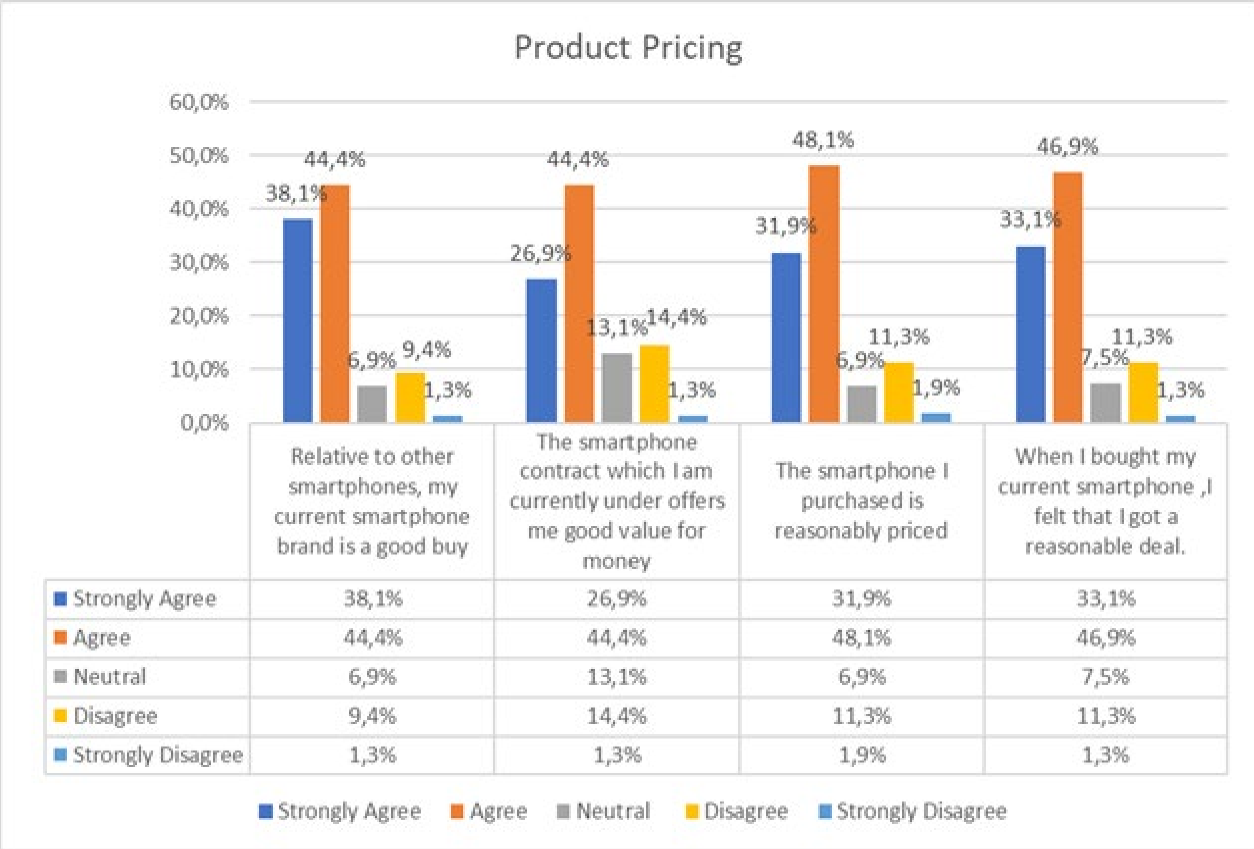


Figure 4.7: Product pricing responses of questionnaire

4.6.6. Mean and standard deviations for product pricing

The results obtained on the overall mean and standard deviations generated for product pricing were 2.03 and 0.99, respectively, thus signifying the respondents are satisfied with the brand. 82.5% of the respondents indicated that, relative to other smartphones, their current smartphone brand is a good buy whereas 10.7% of the respondents indicated that, relative to other smartphones, their current smartphone brand is not a good buy. On the other hand, 71.3% of respondents indicated the smartphone contract which they are currently under offers good value for money, and 15.7% of respondents indicated the smartphone contract which they are currently under does not offer good value for money. 80% of respondents indicated the smartphone they purchased is reasonably priced, and 13.2% of respondents indicated that the smartphone they purchased is not reasonably priced. On the other hand, 80% of respondents indicated they felt that they got a reasonable deal when they bought their current smartphone, whereas 12.6% of respondents indicated they did not get a reasonable deal when they bought their current smartphone. Most significantly, this reveals that respondents have a satisfactory impression of the product pricing and contract deals of the smartphone brands they are currently utilising.

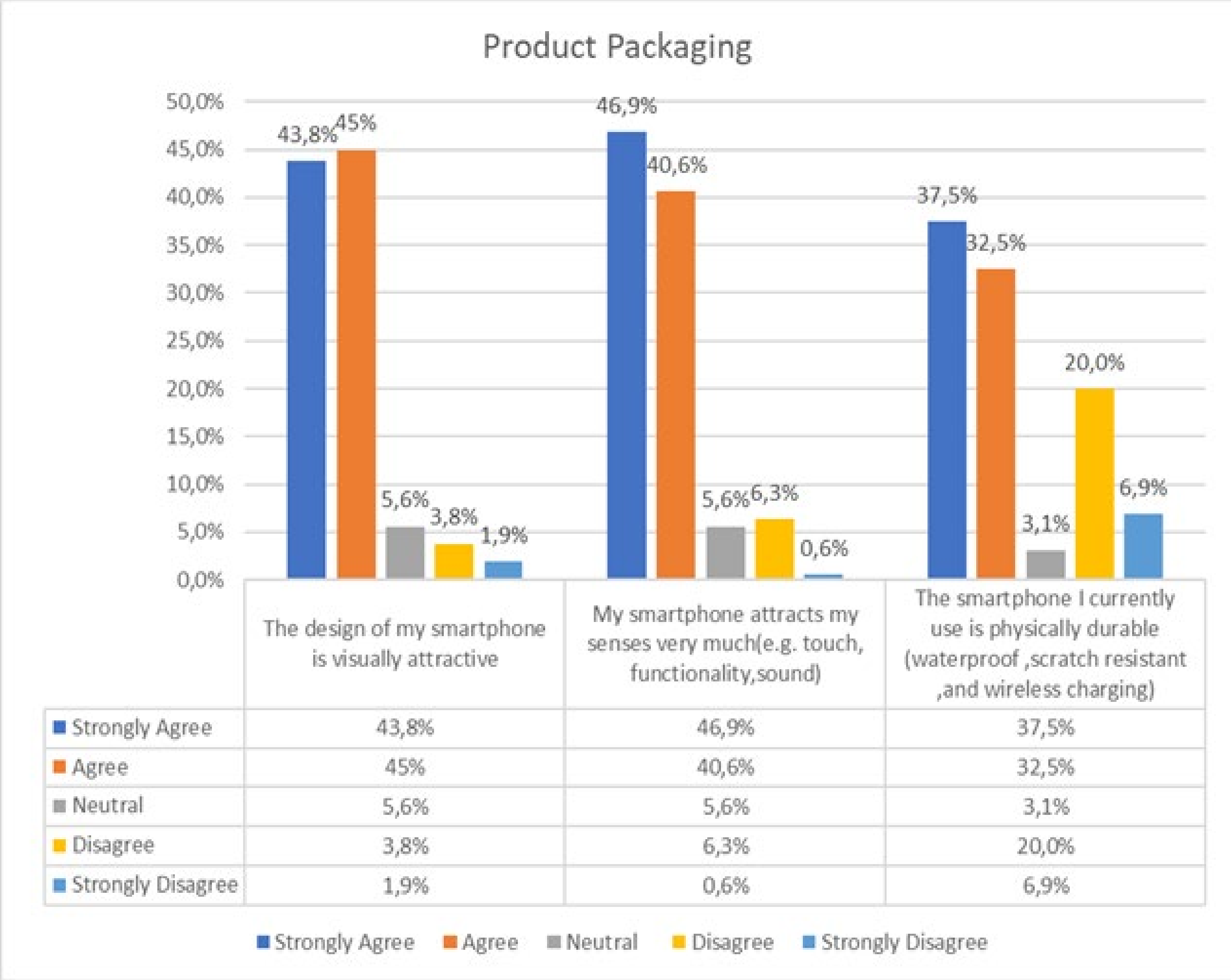


Figure 4.8: Product packaging responses of the questionnaire

4.6.7. Mean and standard deviations for product packaging

The results obtained on the overall mean and standard deviations generated for product packaging were 1.91 and 2.17, respectively, thus signifying the respondents are satisfied with the product packaging. 88.8% of the respondents indicated the design of their smartphone is visually attractive whereas 5.7% of the respondents indicated the design of their smartphone is not visually attractive. On the other hand, 87.5% of respondents indicated that their smartphone attracts their senses very much (e.g., touch, functionality, and sound) while 6.9% of respondents indicated that their smartphone does not attract their senses very much 70% of respondents indicated the smartphone they are currently using is physically durable (waterproof, scratch-resistant, and wireless charging) while 26.9% of respondents indicated that the smartphone they are currently using is not physically durable. This reveals that respondents have a satisfactory impression of the product packaging, physical functionality, and durability of the smartphone brands they are currently utilising.

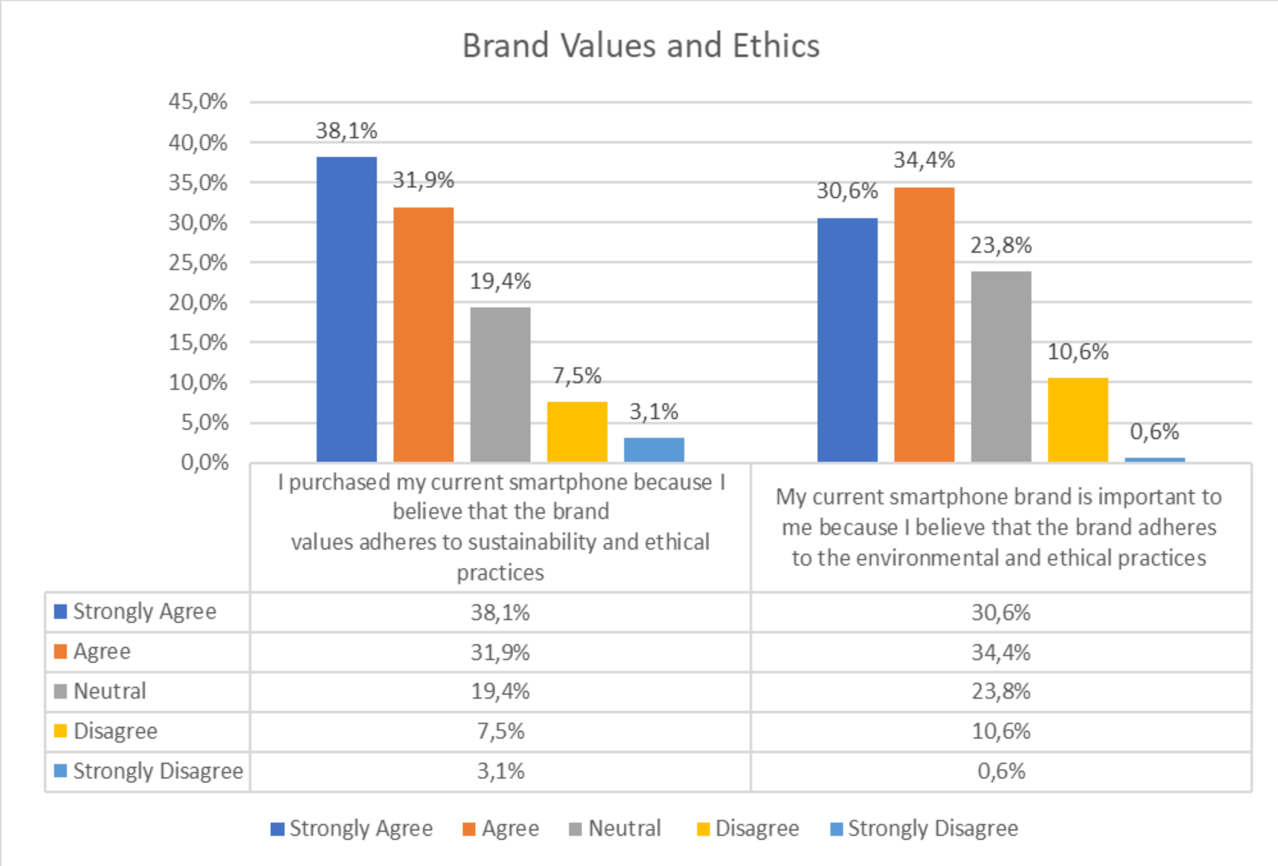


Figure 4.9: Brand values and ethics responses of the questionnaire

4.6.8. Mean and standard deviations for brand values and ethics

The results obtained on the overall mean and standard deviations generated for brand values and ethics were 2.10 and 1.03, respectively. This signifies the respondents are satisfied with the brand. 70% of the respondents indicated they had purchased their current smartphone because it adheres to sustainable business values and ethics whereas 10.6% of the respondents indicated they had purchased their current smartphone because it does not adhere to sustainable business values and ethics. On the other hand, 65% of respondents indicated that their current smartphone brand is important to them because it is conscious of its environmental impact and 11.2% of respondents indicated that their current smartphone brand is not important to them because it is not conscious of its environmental impact. Most significantly, this reveals that respondents believe smartphone brands have to adhere to sustainable business values and ethics and the environmental impact.

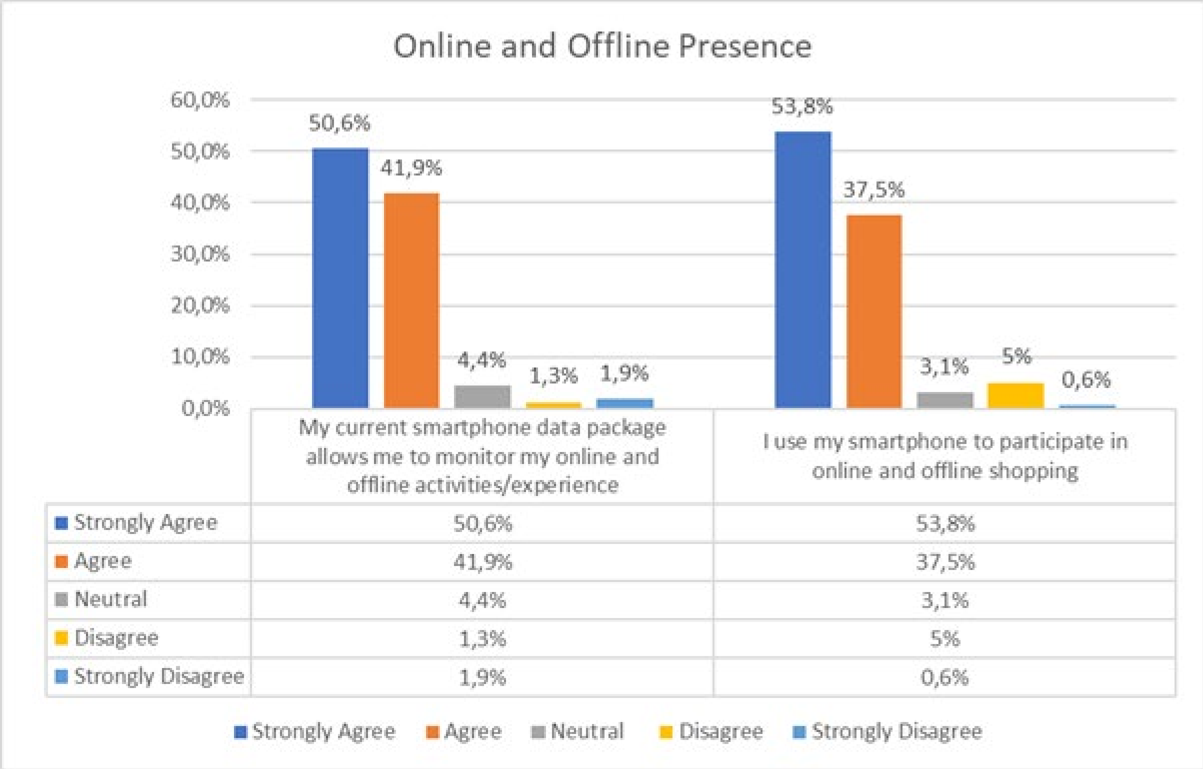
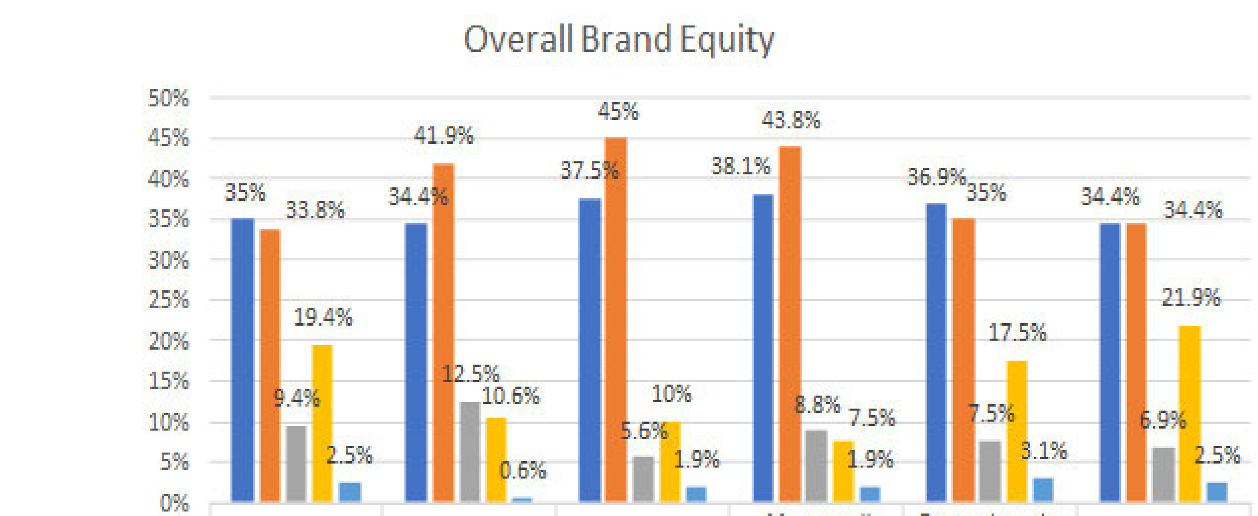


Figure 4. 10: Online and offline responses of questionnaire

4.6.9. Mean and standard deviations for online and offline presence

The results obtained on the overall mean and standard deviations generated for online and offline presence were 1.88 and 0.91, respectively, thus signifying the respondents are satisfied with the brand. 92.5% of the respondents indicated that their current smartphone data package allows them to monitor their online and offline activities/experience whereas 3.2% of the respondents indicated that their current smartphone data package does not allow them to monitor their online and offline activities/experiences. On the other hand, 91.3% of respondents indicated that they use their smartphone to participate in online and offline shopping and 5.6% of respondents indicated that they do not use their smartphone to participate in online and offline shopping. Most significantly, this reveals that the majority of respondents utilise their smartphones for online and offline shopping and to monitor their online and offline activities and experience.



	Even if there is another smartphone brand as good as mine, I would still prefer my smartphone brand	My perception of the business model that my current smartphone brand uses is economically sustainable and innovative	The current smartphone brand I use is memorable and recognisable, which makes me confident about its longevity in the market	My overall perception of my smartphone in regards to (e.g. price, packaging,quality,brand values and online and offline presence) is high	Even when the cost of other smartphones are offered at a reduced price or are on promotion , I will still prefer to buy my smartphone brand	Even when the price of other phones are reduced, I will still prefer to buy my smartphone brand
Strongly Agree	35%	34.4%	37.5%	38.1%	36.9%	34.4%
Agree	33.8%	41.9%	45%	43.8%	35%	34.4%
Neutral	9.4%	12.5%	5.6%	8.8%	7.5%	6.9%
Disagree	19.4%	10.6%	10%	7.5%	17.5%	21.9%
Strongly Disagree	2.5%	0.6%	1.9%	1.9%	3.1%	2.5%

Figure 4.11: Overall brand equity responses of the questionnaire

4.6.10. Mean and standard deviations for overall brand equity

The results obtained on the overall mean and standard deviations generated for overall brand equity were 1.90 and 0.99, respectively, thus signifying they are satisfied with the brand. 68.8% of the respondents indicated that even if there is another smartphone brand as good as their current smartphone, they would still prefer their smartphone brand whereas 21.9% of the respondents indicated even if there is another smartphone brand as good as their current smartphone, they would not prefer their current smartphone brand. On the other hand, 76.3% of respondents indicated that their perception of the business model that their current smartphone brand uses is economically sustainable and innovative.

In contrast, 11.2% of respondents indicated that their perception of the business model that their current smartphone brand uses is not economically sustainable and innovative. 82.5% of respondents indicated that the current smartphone brand they use is memorable and recognisable, which makes them confident about its longevity in the market, and 9.4% of respondents indicated that the current smartphone brand they use is not memorable and recognisable, which does not make them confident about its longevity in the market. 81.9% of respondents indicated that the overall perception of their smartphone with regard to price, packaging, quality, brand values and online and offline presence is high and 9.4% of respondents indicated that the overall perception of their smartphone is not high.

On the other hand, 71.9% of respondents indicated that even when other smartphones are offered at a reduced price or are on promotion, they will still prefer to buy their current smartphone brand, whereas 20.6% of respondents indicated that even when other smartphones are offered at a reduced price or are on promotion, they will not buy their current smartphone brand. 68.8% of respondents indicated that even when the price of other phones are reduced, they will still prefer to buy their smartphone brand, and 24.4% of respondents indicated that even when the price of other phones are reduced, they will not prefer to buy their smartphone brand. Most significantly, this reveals that the majority of respondents' overall brand equity and perception of their smartphone brands is of imperative value to them.

4.7. Cross tabulations and Chi-square tests

Cross tabulations (crosstabs) were applied in this study in order to determine whether a substantial relationship existed amongst the categorical variables of the study. In accordance with Gartung, Edholm, Edholm, McNall, and Lew (2001), cross-tabulations are employed to underpin the research findings and assess the variables in order to provide perceptiveness or interpretations. Most significantly, cross-tabulation represents the result of the total group and sub-group of participants which facilitates the examination of existing relationships within the data set. Merriam-Webster Dictionary (2021:1) defines a chi-square as "a statistic that is a sum of terms each of which is a quotient obtained by dividing the square of the difference between the observed and theoretical values of a quantity by the theoretical value." The chi-square test was employed to ascertain whether a significant relationship between the variables in the cross-tabulation exists. Bryman and Cramer (2012) suggest that the value of the chi-square should be less than 0.05 (Pearson value, $P < 0.05$) in order for a significant relationship to be proven between the variables being examined. For this study, the cross-tabulations for the different variables were presented, and the P-value was observed to determine if a significant relationship exists between the variables being tested. It is important to know that the cross-tabulation of the analysis of this study only focused on gender, age, ethnicity, year of study and brand of smartphone. The following presents the results of the cross-tabulation as well as the *P* values obtained to determine how significant the relationships of the variables tested are.

The results are organised in terms of age, gender, ethnicity, year of study and brand of smartphone.

4.7.1. Cross tabulation and chi-square between brand awareness

i) *Age*

Most participants (48.1%) strongly agreed that they thought of their current smartphone first, among the many smartphone brands. Furthermore, approximately 62% of those aged 24-26, 71.1% of those aged 27-31, and 43.8% of participants aged 32-35 and 36-39, respectively, strongly agreed that they had heard of their smartphone brand before using it. Additionally, 62.5% of respondents across all age groups strongly agreed that they were easily aware of the symbol or logo of the smartphone brand they use, whereas only 2.5% and 1.3% of respondents disagreed and strongly disagreed, meaning that they were not aware of the logo of their smartphone brand. There was a statistically significant association between respondents' age and whether they thought of their smartphone brand first among many smartphone brands X^2 *(12, N=160) =21.28, p<.046*).

Table 4. 7: Chi-square tests brand awareness

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	21.286[a]	12	.046
Likelihood Ratio	22.607	12	.031
Linear-by-Linear Association	.109	1	.742
N of Valid Cases	160		
a. 12 cells (60.0%) have expected count less than 5. The minimum expected count is .60.			

ii) *Gender*

Regarding gender and brand awareness, 58.3% of females strongly agreed that they think of their current smartphone brand first among many smartphone brands, followed by 30% who agreed, 6.7% who were neutral and 5.0% who disagreed with the statement. Furthermore, 43.9% of male respondents strongly agreed that they think of their current smartphone brand first among many smartphone brands, whereas 13.6% disagreed. Most non-binary respondents (41.4%) agreed with the statement, while 25.0% of those that did not wish to give their gender orientation strongly disagreed with the statement.

Additionally, most respondents strongly agreed that they heard of their current smartphone brand first before using it (65.0% of females, 51,4% males, 55.2% non-binary, and 75.0% of respondents that did not wish to answer). Moreover, irrespective of gender, 62.5% of respondents stated that they were easily aware of the symbol or logo of the smartphone brand they use.

The results of the chi-square analysis showed no statistically significant association between gender and brand awareness. This means that gender had no bearing on whether participants were aware of the smartphone brand they are currently using.

iii) *Year of study*

Regarding brand awareness and respondents' year of study, most respondents in their 3rd year of study (51.5%), as well as those who were completing either Honour (43.2%), Masters (58.3%) or PhD (38.5%), strongly agreed that they thought of their current smartphone brand first among the many smartphone brands available. Furthermore, regardless of respondents' year of study, most strongly agreed that they had heard of their smartphone brand before using it (57.5%) and that they are easily aware of the symbol or logo of the smartphone brand they use (62.5%). However, no statistically significant association was found between the year of study and brand awareness.

iv) *Brand of smartphone*

Ninety-one percent of respondents using an Apple smartphone strongly agreed that they thought of their current smartphone brand first among many smartphone brands, while 42.9% of LG users were neutral and only 2.0% of Samsung users disagreed, compared to the 58.8% who agreed. Furthermore, regardless of smartphone brand, 57.5% of respondents strongly agreed that they heard of their current smartphone brand before using it, while 35.6% agreed, 1.3% were neutral, 3.1% disagreed, and 2.4% strongly disagreed.

In relation to brand awareness, 94.4% of Apple users strongly agreed that they heard of their current smartphone brand before using it. Most respondents using either Huawei, LG, Nokia, or Samsung smartphones also agreed that they heard of their current smartphone brand before using it. 62%of respondents also said they were easily aware of the symbol or logo of their smartphone brand compared to only 1.3% who were neutral or strongly disagreed. There was a significant association between brand awareness and the brand of smartphones.

4.7.2. Cross tabulation and chi-square between brand association

i) *Age*

In terms of brand association, most respondents (50%) aged between 24-26 strongly agreed with the statement, "I typically go for my smartphone brand because it is highly reliable". Furthermore, 43.5% and 46.9% of those aged between 27-31 and 32-35, respectively, strongly agreed with the statement, whereas 43.8% of respondents aged between 36-39 agreed with the statement. About 18% of respondents aged between 32-35 disagreed with the statement and 9.4% of those aged between 36-39 were neutral. With regards to whether respondents felt their smartphone brand reflected their individuality,42.0%, 39.1%, 40.6% and 37.5% of respondents aged between 24-26, 27-31, 32-35 and 36-39 respectively, strongly agreed that their smartphone brand reflects their individuality, whereas 10,6% of respondents across all age groups disagreed and only 11.9% were neutral. Furthermore, 34.8%, 28.1%, and 40.6% of those aged between 27-31, 32-35 and 36-39 agreed with the statement, "I feel my smartphone brand improves how I am perceived by my peers" while only 14.0% and 6.0% of those aged between 24-26 disagreed or strongly disagreed with the statement. The chi-square analysis showed no statistically significant results between age, reliability of smartphone brand, whether it reflects individuality and whether respondents felt the brand improves how they are perceived by their peers.

Gender

With reference to the brand association, 43,1%, 42.4% and 41.4% of female, male and non-binary respondents, respectively, strongly agreed that they typically go for their smartphone brand because it is highly reliable, whereas only 10.6% of respondents across all gender categories disagreed. Furthermore, 39.4% and 37.9% of male and non-binary respondents agreed that the smartphone brand they use reflects their individuality, while 43.3% of female respondents and 50.0% of the respondents that did not wish to answer strongly agreed that their individuality is reflected by their smartphone brand, compared to a few respondents across all gender categories who disagreed or strongly disagreed (10,6% and 3.1%, respectively). Additionally, 34,4% of respondents across all gender categories strongly agreed that their smartphone brand improves how they are perceived by their peers, followed by 33.1% who agreed, 15,6% who were neutral, 11,9% who disagreed and 5.0% who strongly disagreed that their smartphone brand improves how they are perceived by their peers. Moreover, in terms of the chi-square results, only one statistically significant association was found between gender and brand association. Specifically, the association was shown between gender and the reliability of smartphone brands respondents typically 'go for.' This means that whether a smartphone brand reflects respondents' individuality or whether it improves how they are perceived by their peers was not associated with their gender.

ii) *Year of study*

Fifteen percent of respondents in their 3rd year disagreed that they typically go for their smartphone brand because it is highly reliable, compared to 43.2%, 54.2% and 38.5% who were completing an Honours, Masters or PhD who strongly agreed. Additionally, most respondents felt that the smartphone brand they use reflects their individuality, whereas only 5.0% strongly disagreed that their smartphone brand improved how they were perceived by their peers. There was no significant association between the year of study and brand association.

iii) *Brand of smartphone*

The chi-square analysis between the brand of smartphone and whether respondents typically go for their smartphone brand because it is highly reliable, whether the brand reflects their individuality and improves how they are perceived by their peers was statistically significant, demonstrating an association between brand association and brand of smartphone. Furthermore, 83.3% and 54.9% of Apple and Samsung users, respectively, strongly agreed while 23.9% and 14.3% of Huawei or LG users disagreed with the statement. In addition, most respondents said their smartphone brand reflected their individuality and improved how they were perceived by their peers (40.0% and 34.4%, respectively).

4.7.3. Cross tabulation and chi-square between brand loyalty

i) *Age*

Regardless of age, most respondents (36.9%) agreed that their current smartphone brand is always their first choice when they purchase a smartphone, compared to only 13.8% of respondents who disagreed. Additionally, about 20% of respondents said they would not choose their current smartphone brand again if they were to buy another smartphone in future, whereas 45.5% of respondents mentioned that they would recommend their current smartphone brand to their family and friends. Moreover, 42.0% of respondents aged between 24-26, 39.1% of respondents aged between 27-31, as well as 40.6% and 37.5%, of those aged between 32-35 and 36-39, respectively, strongly agreed that their current smartphone brand makes them want to get accessories and other complementary products like apps for it. There was no statistically significant association between age and brand loyalty. This means that irrespective of age, respondents were not loyal to any brand of smartphone.

ii) *Gender*

In terms of brand loyalty, many female respondents (40,0%) strongly agreed with the statement "when I purchase a smartphone, my current smartphone brand is always my first choice". Most male respondents (34,8%), as well as non-binary respondents (37.9%), also agreed with the above statement while 11,7% of the female, 15.2% of the male, and 17.2% of the non-binary respondents disagreed with the statement. Although most respondents across all gender categories said they would choose their current smartphone brand again if they were to buy another smartphone in future, a notable percentage of female, male and non-binary respondents disagreed (18.3%, 19,7% and 27.6%, respectively).Furthermore, 10,6% of the male respondents were neutral while none of the female respondents strongly disagreed that they would not purchase their current smartphone brand again. Moreover, only a few of male (4.5%) and non-binary (3.4%) respondents strongly disagreed- demonstrating that they would not choose their current smartphone brand if they were to buy another smartphone in future.

Additionally, 45.0% and 41.7% of females said they would recommend their current smartphone brand to their family and friends, while 8.0% were neutral and 5.0% said they would not recommend their smartphone brand to their family and friends. A similar trend was shown between male respondents and non-binary respondents in that most agreed (42.4% and 34.5%) that they would recommend their smartphone brand to their family and friends, while only a few were neutral (12.1% and 10,3%, respectively) However, compared to male respondents (7.6%), a notable percentage of non-binary respondents (17.2%) disagreed that they would recommend their smartphone brand to family and friends. Moreover, only a small percentage of non-binary respondents (4.4%) strongly disagreed that their current smartphone makes them want to get accessories and other complimentary products like apps for it. In terms of the chi-square analysis, there was no association between gender and brand loyalty.

iii) *Year of study*

Regarding brand loyalty, 30.3% of respondents in their 3rd year of the study strongly agreed or agreed that their current smartphone brand is always their first choice when they purchase a smartphone, followed by 9.1% who were neutral and 15.3% who disagreed. Furthermore, 29.7% of respondents completing their honours disagreed that they would choose their current smartphone brand again if they were to buy another smartphone in future, whereas 41.7% of respondents completing their masters strongly agreed that they would recommend their current smartphone brand to their family and friends, and 48.7% of respondents completing their PhD said their current smartphone makes them want to get accessories and other complimentary products such as apps for it. There was no association between the year of study and brand loyalty.

iv) *Brand of smartphone*

With respect to brand loyalty, 30.4% of Huawei users disagreed that their current smartphone brand is always their first choice when they purchase a smartphone compared to 45% of Nokia and Samsung users who agreed. Additionally, 83.3% of Apple users strongly agreed that they would choose their current smartphone brand again if they were to buy another smartphone, whereas 37.0% of Huawei users disagreed, and 14.3% of Nokia users were neutral. Furthermore, most Apple (75.0%), Huawei (50.0%), Samsung (49.0%), Nokia (45.5%), or LG (42.9%) users strongly agreed or agreed that they would recommend their current smartphone brand to their family and friends, whereas 42,5% of respondents said their current smartphone makes them want to get accessories and other complimentary products like apps for it. There was a significant association between brand loyalty and the brand of smartphone.

4.7.4. Cross tabulation and chi-square between brand image

i) *Age*

44% of respondents aged between 24-26 strongly agreed with the statement, "the brand image I use is more unique than that of other brands" compared to only 2% who strongly disagreed with the statement. Similar results were shown among respondents aged between 27-31, where most respondents (47.8%) strongly agreed with the statement, compared to only 4.3% who disagreed with the statement. Furthermore, in terms of whether respondents have a good impression of the overall image of the smartphone they use, about 46% of respondents across all age groups agreed with the statement. Additionally, 46.0%, 43.8% and 54.3% of respondents in the age groups 24-26, 27-31 and 32-35, respectively, said they trust their smartphone brand, whereas only 6.3% of those aged between 36-39 did not trust the smartphone brand they use. Moreover, respondents across all age groups strongly agreed that the smartphone brand they use is the most innovative in the market, while only 2.5% did not feel that their smartphone brand is the most innovative in the market.

Although most respondents across all age groups said they trust their smartphone brand and have a good impression of the brand image, as well as feel that it is the most innovative in the market, the chi-square analysis that can be observed in (Table 4.8) showed no statistically significant results between age and brand image. This means that there was no association between respondents' age and the brand image of the smartphone they use.

Table 4. 8: Chi-square tests brand image

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	14.915[a]	12	.246
Likelihood Ratio	15.808	12	.200
Linear-by-Linear Association	.183	1	.669
N of Valid Cases	160		
a. 10 cells (50.0%) have expected count less than 5. The minimum expected count is 2.20.			

ii) *Gender*

With respect to gender and brand image, 43.3% of female respondents strongly agreed that the brand image of the smartphone brand is more unique than that of other brands, compared to 11.7% who were either neutral or disagreed with the statement. On the other hand, only 16.7% and 6.9% of male and non-binary respondents disagreed, compared to the 33,3% male and 37,9% non-binary respondents who agreed. Furthermore, most female, male, or non-binary respondents agreed that they have a good impression of the overall image of the smartphone brand they use (48,3%, 42,4% and 51,7%, respectively), and the majority of respondents strongly agreed that they trusted the smartphone brand they use (48,3% of the female respondents, 48,5% of the male and 34,5% of the non-binary respondents).

In terms of whether respondents feel that the smartphone brand they use is the most innovative in the market, 40,0% of female participants strongly agreed, while 18,2% of male respondents were neutral, and 13,8% of non-binary respondents disagreed. Furthermore, the results of the chi-square analysis showed a statistically significant association between gender and the overall impression of the image of the smartphone respondents use. This means that in relation to brand image, gender was not associated with whether respondents trust the smartphone brand they use, the uniqueness of the smartphone brand compared to other brands, or whether respondents feel their smartphone brand is the most innovative in the market.

iii) *Year of study*

About 33.3% of respondents in their 3rd year of study, as well as 46.2% of respondents completing their PhD, agreed that the brand image of the smartphone they use is more unique than that of other brands compared to 18.9% in Honours who disagreed, and 10.4.% of those completing their Masters who were neutral. Although there was no statistically significant association between brand image and year of study, 45,0% of respondents strongly agreed that they had a good impression of the overall image of the smartphone they use, while 38.8% of respondents said they trusted their smartphone brand and 42.5% felt that the smartphone brand they use is the most innovative in the market.

iv) *Brand of smartphone*

83% of Apple users strongly agreed that the brand image of the smartphone they use is more unique than that of other brands, while most Huawei (56.5%), Nokia (63.6%), LG (57.1%) or Samsung (54.9%) users agreed that they had a good impression of the overall image of the smartphone they use. Furthermore, 45% of respondents, regardless of smartphone brand, strongly agreed that they trusted their smartphone brand, whereas a small percentage of Apple, LG, Nokia, Huawei, Hisense, or Samsung users were neutral when it came to whether they felt their smartphone brand was the most innovative in the market.

4.7.5. Cross tabulation and chi-square between perceived quality

i) *Age*

In terms of perceived smartphone quality, respondents aged 24-26 (46.0%) and 27-31 (52.5%) strongly agreed that the quality of their smartphone is high, while most of those aged 32-35 (46.9%) and 36-39 (53.1%) agreed. Furthermore, most respondents aged 24-27 and 27-31 strongly agreed that the performance of their smartphone is high, whereas 12.5% of those aged 32-35 and 36-39 disagreed. Although there was no significant association between age and perceived smartphone quality, most respondents said their smartphone brand offers them longevity, reliability, and durability.

ii) *Gender*

The chi-square analysis showed no statistically significant association between gender and perceived smartphone quality. However, regardless of gender identity, most respondents strongly agreed that the quality (42.5%) and performance (44.4%) of their current smartphone brand are high. Respondents also strongly agreed that the quality of their smartphone brand outperforms other competitors in the market. Furthermore, 36.7% of female respondents as well as 24.8% of male respondents, agreed that they were more likely to continue their relationship with the smartphone brand they use because it offers them longevity, reliability, and durability, whereas 24.1%of non-binary respondents disagreed.

iii) *Year of study*

Regarding perceived quality, 51.5%, 27.0%, 37.5%, and 53.8% of respondents who were completing their 3rd year, Honours, Masters, or PhD agreed that the quality of the smartphone brand they are using is high, whereas only a small percentage of respondents, regardless of their year of study, disagreed that the performance of their current smartphone is high. Furthermore, 44.3% of respondents said they were more likely to continue their relationship with the smartphone brand they use because it offers them longevity, reliability, and durability. In relation, there was an association between the year of study and whether respondents were likely to continue their relationship with their smartphone brand, as evidenced by a statistically significant chi-square test [X^2 *(20, N=160) =33.661, p<.029*]. The chi-square analysis between the year of study and whether the quality of respondents' current smartphone outperforms other competitors in the market was also statistically significant X^2 *(20, N=160) =32.001, p<.043.*

iv) *Brand of smartphone*

With respect to perceived smartphone quality, 88.9% and 51.0% of Apple and Samsung users strongly agreed that the quality of their smartphone brand is high, followed by 60.9% and 72.7% of Huawei and Nokia users who agreed and 42.9% of LG users who disagreed. 94% of Apple users strongly agreed that the performance of their smartphone is high compared to 28.6% of LG users who disagreed and the 56.5% and 72.7% of Huawei and Nokia users who agreed. While most Apple users (83.3%) strongly agreed that the quality of their smartphone outperforms other competitors in the market, 26.1%, 57.1% and 27.3% of Huawei, LG, and Nokia users, respectively, disagreed. Additionally, most Apple (88.9%) and Samsung (51.0%) users said they were more likely to continue their relationship with their current smartphone brand because it offers longevity, reliability, and durability. Moreover, there was a statistically significant association between perceived smartphone quality and brand of smartphone X^2 *(32, N=160)=154.787, p<.001.*

4.7.6. Cross tabulation and chi-square between product pricing

i) *Age*

In terms of whether respondents regard their current smartphone brand as a good buy relative to other smartphones, the majority of respondents (52.2%) aged 27-31 agreed, whereas 44.0% of respondents aged 24-26 strongly agreed. Furthermore, 18.8% and 12.5% of respondents aged between 32-35 and 36-39, respectively, disagreed, compared to 43.3% of respondents in both age groups who agreed that their current smartphone brand is a good buy relative to other smartphones. In addition, most respondents across all age groups (44.0%) agreed that the smartphone contract they are currently under offers them good value for money, whereas 13.3% were neutral and 14.4% disagreed. Furthermore, most respondents (77.0%) agreed that the smartphone they purchased was reasonably priced compared to only 18.0% of respondents who disagreed. Moreover, only 11.6% of respondents disagreed that they felt they got a reasonable deal when they bought their current smartphone, compared to 33.1% who strongly agreed. There was no association between age and product pricing, as evidenced by non-significant chi-square results.

ii) *Gender*

About 45% of female respondents strongly agreed that their current smartphone brand is a good buy compared to other smartphones, while 10,6% of male respondents were neutral and only 17,2% of non-binary respondents disagreed. Furthermore, the majority of male, female, and non-binary respondents (42,4%, 43,3% and 55,2%, respectively) agreed that the smartphone contract they are currently under offers them good value for money, whereas 48,1% of respondents, regardless of gender identity, agreed that the smartphone brand they purchased was reasonably priced compared to only 1.9% who strongly disagreed. Additionally, 46,9 % of respondents felt they got a reasonable deal when they bought their current smartphone, compared to 7.5% who were neutral, 11.3% who disagreed and 1.3% who strongly disagreed. There was no association between gender and product pricing, as evidenced by the lack of statistically significant chi-square tests.

iii) *Year of study*

Only 1.3% of respondents strongly disagreed that their current smartphone brand is a good buy compared to other smartphones, while 44.4% of respondents agreed that the smartphone contract, they are currently under offers them good value for money. With regards to whether respondents thought the smartphone they purchased was reasonably priced, 57.6% of respondents in their 3rd year of study agreed, followed by 10.8% and 16.7% of respondents completing their honours or masters who were neutral and 12.8% of those completing their PhDs who disagreed. Respondents completing their 3rd year (63.6%), honours (32.4%), masters (45.8%) or PhDs (46.2%) also said they felt they got a reasonable deal when they bought their current smartphone.

iv) *Brand of smartphone*

Most Apple users strongly agreed that compared to other smartphones, their current smartphone brand is a good buy, whereas 42.9% of LG users disagreed and 18.2% of Nokia users were neutral. Regarding whether respondents think the smartphone contract they are currently under offers them good value for money, 19.6%, 28.6% and 18.2% of Huawei, LG and Nokia users disagreed, while 19.6% of Samsung users were neutral and 63.9%, 57.1% and 72.7% of Apple, LG or Nokia users strongly agreed or agreed with the statement. In addition, 16.7% and 28.6% of Apple or LG users disagreed that their smartphone is reasonably priced, compared to 63.0%, 49.0% and 81.8% of Huawei, Samsung and Nokia users who agreed. Moreover, most respondents, regardless of smartphone brand, said they felt they got a reasonable deal when they bought their smartphone.

4.7.7.Cross tabulation and chi-square between product packaging

i) *Age*

46& of respondents aged between 24-26 strongly agreed that the design of their smartphone is visually attractive, followed by 40% who agreed, 6% who were neutral and 4% who either disagreed or strongly disagreed. Furthermore, about 50% of respondents aged 27-31 strongly agreed that the design of their smartphone brand was visually attractive, while 53.1% and 46.9% of those aged between 32-35 and 36-39, respectively, agreed that the design was visually attractive. Respondents also stated that their smartphone greatly appeals to their senses (i.e., touch, sound, functionality). Moreover, although most respondents agreed that their smartphone is physically durable as it is waterproof and scratch-resistant and has wireless charging, some respondents aged 24-26 and 27-31 disagreed with that assertion (24% and 23%, respectively).

ii) *Gender*

Although the chi-square analysis results were not statistically significant, demonstrating that there is no association between gender and product packaging, 50.0% of female respondents strongly agreed that the design of their smartphone is visually attractive, while 55.2% of non-binary respondents agreed that their smartphone is very appealing to their senses in terms of touch, functionality, or sound, and 37.9% of male respondents strongly agreed that their current smartphone is physically durable.

iii) *Year of study*

Irrespective of year of study, 45.0% of respondents agreed that the design of their smartphone is visually attractive, followed by 5.6% who were neutral, 3.8% who disagreed and 1.9% who strongly disagreed. Furthermore, 46.9% of respondents strongly agreed that their smartphone attracts their senses very much, while 37.5% said the smartphone they use is physically durable.

iv) *Brand of smartphone*

Eighty-three percent of Apple users strongly agreed that the design of their smartphone is visually attractive, followed by 69.9%, 57.1%, and 54.5% of Huawei, LG and Nokia users who agreed, and only 2.0% of Samsung users who strongly disagreed. The majority of Apple (86.1%), Huawei (63.8%), Samsung (54.9%), and Nokia (63.6%) users also said their smartphone attracts their senses very much compared to 28.6% of LG users who disagreed. Lastly, most respondents strongly agreed that the smartphone they currently use is physically durable, while only 23.9%, 28.6%, and 19.6% of Huawei, LG, and Samsung users, respectively, were neutral.

4.7.8.Cross tabulation and chi-square between brand values and ethics

i) *Age*

With regard to brand values and ethics, 38.1% of respondents strongly agreed that they purchased their current smartphone because it adheres to sustainable business values and ethics, whereas 19.4% were neutral and 7.5% disagreed. Furthermore, the chi-square analysis showed a statistically significant association between respondents' age and their decision to purchase a smartphone because of its sustainable business values and ethics X^2 *(12, N=160) = 25.255, p<.014.*

In relation to the aforementioned, 20.0% of respondents aged 24-26 disagreed that their current smartphone brand is conscious of its environmental impact, whereas 32.6% of those aged between 27-31, 37,5% of respondents aged 32-35 and 46.9% of those in the older age group (36-39) agreed that their smartphone brand is important to them because it is conscious of its environmental impact.

ii) *Gender*

Regarding brand values and ethics, 41.7% of female respondents, 39.4% of male respondents, and 34,5% of non-binary respondents strongly agreed with the statement "I purchased my current smartphone brand because it adheres to sustainable business values and ethics", whereas 18.3% and 18.2% of female and male respondents, as well as 24.1% of non-binary respondents, were neutral. Twenty-six percent of female respondents were also neutral when it came to the statement "My current smartphone brand is important to me because it is conscious of its environmental impact," compared to 12.1% of males who disagreed and 48,3% of non-binary respondents who agreed with the statement.

iii) *Year of study*

Overall, 19.4% of respondents were neutral regarding the statement "I purchased my current smartphone because it adheres to sustainable business values and ethics," whereas 34.4% said their current smartphone brand is important because it is conscious of its environmental impact.

iv) *Brand of smartphone*

Regarding brand values and ethics, only 2% of Huawei or Samsung users strongly disagreed that they purchased their current smartphone because it adheres to sustainable business values and ethics, whereas 19.4%, 42.9% and 9.1% of Apple, LG or Nokia users were neutral. Furthermore, 61.1%, 42.9%, 49.0%, 37.0% and 54.5% of Apple, LG, Samsung, Huawei, and Nokia users said they purchased their current smartphone because it adhered to sustainable business values and ethics. In relation, a notable percentage of Apple, Huawei, LG, Nokia, or Samsung users were neutral when it came to the statement "my current smartphone brand is important to me because it is conscious of its environmental impact" (25.0%, 28.3%, 28.6%,17.6% and 27.3%, respectively).

4.7.9.Cross tabulation and chi-square between online and offline presence

i) *Age*

About 50% of respondents across all age groups strongly agreed that their current smartphone data package allows them to monitor their online and offline activities, whereas 53% of respondents across all age groups strongly agreed that they used their smartphones to participate in online and offline shopping.

ii) *Gender*

The majority of female (51.7%), male (53.0%), and non-binary (51.7%) respondents strongly agreed that their current smartphone data package allows them to monitor their online and offline activities. Furthermore, 8.3% said they use their smartphone to participate in online and offline shopping.

iii) *Year of study*

In terms of online and offline presence, most respondents in their 3rd (57.6%), Honours (54.1%) or Masters (47.9%) year of study strongly agreed that their current smartphone data package allows them to monitor their online and offline activities/experiences, while most respondents completing their PhD (48.7%) agreed with the statement. Furthermore, most respondents in their 3rd year of study (63.6%), as well as those completing their Honours (54.1%), Masters (52.1%) and PhD (48.7%) said they used their smartphone to participate in online and offline shopping, compared to only 5.0% who disagreed.

iv) *Brand of smartphone*

The results of the chi-square analysis showed a statistically significant association between the brand of smartphones and online and offline presence. Furthermore, most Apple (80.6%) and Samsung (51.0) users strongly agreed that their current smartphone data package allows them to monitor their online and offline activities and experiences. Lastly, regardless of smartphone brand, 53.8% of respondents strongly agreed that they use their smartphones to participate in online and offline shopping.

4.7.10. Cross tabulation and chi-square between overall brand equity

i) *Age*

Regarding overall brand equity, respondents aged between 24-26 and 27-31 strongly agreed that they would still prefer their smartphone brand even if there was another smartphone brand as good as theirs, whereas 59.4% and 40.6% of those aged between 32-35 and 36-39 agreed that their perception of the business model of the smartphone brand they use is economically sustainable and innovative. Furthermore, a few respondents across all age groups disagreed that their smartphone brand is memorable and recognisable, which gives them confidence in its market longevity, compared to 45.0% who agreed. Additionally, 12.0%, 8.7%, 3.1% and 9.4% of respondents aged between 24-27, 27-31, 32-35 and 36-39, respectively, were neutral when it comes to their overall perception of their smartphone with regards to price, packaging, quality, brand values, as well as online and offline presence. Moreover, most respondents said they would still prefer to buy their current smartphone even if the cost of other smartphones is at a reduced price or on promotion (36.9%), or even if the prices of other smartphones are reduced (34.4%), compared to 17.5% and 21.9%, respectively, who disagreed.

ii) *Gender*

In terms of overall brand equity and gender, most female (45.0%), non-binary (41.4%), and male (37.9%) respondents agreed that their perception of the business model that their current smartphone brand uses is economically sustainable and innovative. Similarly, most respondents strongly agreed that they would still prefer their smartphone brand even if there was another brand as good as theirs (35.0% regardless of gender identity) compared to 19.4% who disagreed.

While 46.7% and 48.5% of female and male respondents, respectively, believed that their current smartphone brand is memorable and recognisable, thus making them more confident about its longevity in the market, 24.1% of non-binary respondents disagreed. Non-binary respondents also disagreed that their overall perception of their smartphone in regard to its price, packaging, quality, brand values, and online and offline presence is high in contrast to 43.3% of female respondents who strongly agreed and 45.0% of male respondents who agreed. Additionally, most non-binary respondents disagreed that they would still prefer to buy their smartphone brand even if the price of other smartphones is reduced (34.5%) or if those smartphone brands are on promotion (20.7%).

iii) *Year of study*

41% of respondents completing their PhDs agreed that they would still prefer their current smartphone brand even if there was another smartphone brand as good as theirs, while 27.3% of those in their 3rd year disagreed, 13.5% in their Honours were neutral, and 39.6% completing their Masters strongly agreed. Furthermore, irrespective of the year of study, 41.9% of respondents perceived the business model of their current smartphone as economically sustainable and innovative. Additionally, 48.5%, 40.5%, 45.8% and 43.6% of respondents completing their 3rd year, Honours, Masters, or PhD, respectively, agreed that their current smartphone brand was memorable and recognizable, making them more confident about its longevity in the market compared to the 12.1% in 3rd year, 16.2% in Honours, and 6.3%, and 7.7% completing their Masters and PhD who disagreed. Only 7.5% of respondents disagreed with the statement "My overall perception of my smartphone in regard to price, packaging, quality, brand values and online and offline presence is high" compared to 43.8% who agreed and 8.8% who were neutral. Moreover, 17.5% of the respondents said that they would still prefer to buy their smartphone brand even when the cost of other smartphones is offered at a reduced price or on promotion, while 34.4% strongly agreed or agreed that they would still purchase their current smartphone brand even when the prices of other phones are reduced.

iv) *Brand of smartphone*

compared to 11.1% who were neutral. In relation, most Huawei, LG, Samsung, and Nokia users also agreed that their smartphone brand uses an economically sustainable and innovative business model.

In addition, respondents said their current smartphone brand is memorable and recognizable, which makes them more confident of its longevity in the market. While 57% of LG users were neutral when it came to whether or not their overall perception of their smartphone brand was high in regard to price, packaging, quality, brand values etc, most Huawei, Samsung, and Nokia users agreed and stated their perception is high. Furthermore, most respondents using these brands agreed that even when other smartphone brands are offered at a reduced price or on promotion, they would still prefer to buy their current smartphone brand, whereas most Apple users strongly agreed that they would still prefer their smartphone brand even when the prices of other smartphones are reduced.

4.7. Correlation analysis

Correlation analysis was used to show the relationships between the constructs used in this study. A non-parametric correlation analysis was performed because the data was not normally distributed. The Pearson correlation coefficient was used to determine whether or not there is a relationship between the variables. Because the Likert scale data was ordinal, the Pearson correlation was also appropriate in this study. The following section presents the findings of a correlation analysis between the categorical variables "brand awareness," "brand association," "brand loyalty," "brand image" and "perceived quality," "product pricing," "product packaging," "brand values and ethics," "online and offline presence," and "overall brand equity."

Table 4.9 : Correlations between the aspects of brand equity dimensions and overall brand equity

		Brand Awareness Average	Brand Association Average	Brand Loyalty Average	Brand Image Average	Perceived Quality Average	Product Pricing Average	Product Packaging Average	Brand Values and Ethics Average	Online and Offline Presence Average	Overall Brand Equity Average
Brand Awareness Average	Pearson Correlation	1	.537**	.518**	.558**	.604**	.317**	.649**	.354**	.538**	.540**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	160	160	160	160	160	160	160	160	160	160
Brand Association Average	Pearson Correlation	.537**	1	.806**	.745**	.722**	.369**	.616**	.544**	.402**	.744**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000	.000	.000
	N	160	160	160	160	160	160	160	160	160	160
Brand Loyalty Average	Pearson Correlation	.518**	.806**	1	.761**	.835**	.396**	.680**	.429**	.382**	.827**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000	.000	.000
	N	160	160	160	160	160	160	160	160	160	160
Brand Image Average	Pearson Correlation	.558**	.745**	.761**	1	.873**	.556**	.717**	.524**	.522**	.774**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.000	.000	.000
	N	160	160	160	160	160	160	160	160	160	160
Perceived Quality Average	Pearson Correlation	.604**	.722**	.835**	.873**	1	.526**	.793**	.462**	.502**	.862**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000	.000	.000
	N	160	160	160	160	160	160	160	160	160	160

Product Pricing Average	Pearson Correlation	.317**	.369**	.396**	.556**	.526**	1	.442**	.340**	.459**	.476**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.000	.000	.000
	N	160	160	160	160	160	160	160	160	160	160
Product Packaging Average	Pearson Correlation	.649**	.616**	.680**	.717**	.793**	.442**	1	.530**	.623**	.751**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000	.000	.000
	N	160	160	160	160	160	160	160	160	160	160
Brand Values and Ethics Average	Pearson Correlation	.354**	.544**	.429**	.524**	.462**	.340**	.530**	1	.524**	.571**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000		.000	.000
	N	160	160	160	160	160	160	160	160	160	160
Online and Offline Presence Average	Pearson Correlation	.538**	.402**	.382**	.522**	.502**	.459**	.623**	.524**	1	.509**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000		.000
	N	160	160	160	160	160	160	160	160	160	160
Overall Brand Equity Average	Pearson Correlation	.540**	.744**	.827**	.774**	.862**	.476**	.751**	.571**	.509**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	N	160	160	160	160	160	160	160	160	160	160

**. Correlation is significant at the 0.01 level (2-tailed).

Key:

Yellow = Moderate correlations (i.e., Values between .5 and .6)

Green = Strong correlations (i.e., values between .7 and >.7)

Blue = Weak correlations (values between .3 and .4)

This can be observed in (Table 4.9) above whereby the concepts of the study were all positively correlated, meaning that a relationship exists between the variables. There were moderate correlations between brand awareness and brand association (r=.537), brand loyalty (r=.518), brand image (r=.558), perceived quality (r=.604), product packaging (r=.649), online and offline presence (r=.538) as well as overall brand equity (r=.540). On the other hand, weak correlations were shown between brand awareness and product pricing (r=.317) as well as brand values and ethics (r=.354). Furthermore, brand association was highly correlated with brand loyalty (r=.806), brand image (r=.745), perceived quality (r=.722), and overall brand equity (r=.744). The correlations between the aspects of brand equity dimensions and overall brand equity will be further unpacked in chapter five.

4.8. Conclusion

This chapter presented the results from the analysis of the data acquired from the respondents. A 97% response rate was obtained, and the majority of the respondents were male between the ages of 24 and 26. The dominant ethnic group of respondents were African with a total of 43.8%, the majority of respondents were at a Masters level of studies, and the leading smartphone brand owned by respondents was Samsung with a total of 31.9%. Descriptive statistics were presented in the form of graphs and tables, while cross tabulations, chi-square tests, and Pearson correlation coefficient tests were used to present inferential statistics. These statistics' inferences are presented at the end of each section. The next chapter (Chapter 5) will provide an interpretation of the results obtained in this chapter with reference to the literature in order to achieve the research objectives.

CHAPTER FIVE: DISCUSSION OF RESULTS

5.1. Introduction

The previous chapter presented the analysis of the responses obtained from the respondents. The analysis encompassed descriptive and inferential statistics. This chapter will focus solely on the discussion of the results obtained from the analysis conducted in the previous chapter in line with the research objectives and previous literature of this study. In addition, a brief analysis of the results for each objective will be conducted in order to determine whether the research questions have been answered and the research objectives have been met. Furthermore, the intended contribution of this study will be discussed. This study comprised 10 constructs which were measured to calculate the validated items, and various questions were posed to the respondents based on brand awareness, brand association, brand loyalty, brand image, perceived quality, product pricing, product packaging, brand values and ethics, online and offline presence, and overall brand equity. The Pearson correlation coefficient was conducted in order to determine whether a relationship exists between the variables and the results were organised in terms of the aspects of brand equity dimensions and overall brand equity.

5.2. Discussion of results

As presented in chapter 1, the following was the primary objective of this study

To determine the key brand equity associations between consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus).

The results of the present study highlighted the following:

Table 5.2 1 : correlations between the aspects of brand equity dimensions and overall brand equity

Constructs	Correlation Values
Overall brand equity and brand awareness	(r=.540) = moderate correlation
Overall brand equity and brand association	(r=.744) = strong correlation
Overall brand equity and brand loyalty	(r=.827) = strong correlation
Overall brand equity and brand image	(r=.774) = strong correlation
Overall brand equity and perceived quality	(r=.862) = strong correlation
Overall brand equity and product pricing	(r=.476) = weak correlation
Overall brand equity and Product packaging	(r=.751) = strong correlation

Overall brand equity and brand values and ethics	(r=.571) = moderate correlation
Overall brand equity and online and offline presence	(r=.509) = moderate correlation

This can be observed in the table above whereby the concepts of the study were all positively correlated, meaning that a relationship exists between the variables. There were moderate correlations between overall brand equity and brand awareness (r=.540), brand values and ethics (r=.571), and online and offline presence (r=.509).While, weak correlations were shown between overall brand equity and product pricing (r=.476). On the other hand, overall brand equity was highly correlated with brand association (r=.744), brand loyalty (r=.827), brand image (r=.774), perceived quality (r =.862), and product packaging (r=.751).

The sub-research objectives which stem from the main research objective are:

5.2.1. Discussion pertaining to objective one – to determine the association between brand association and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg)

As aforementioned, the research questions 9, 10, and 11 were: (I typically go for my smartphone brand because it is highly reliable, the smartphone brand I use reflects my individuality (e.g., fun, practical, and technical), and I feel my smartphone brand improves how I am perceived by my peers) had addressed objective one.

There were moderate correlations between brand association and brand awareness (r=.518), product packaging (r=.616), and brand values and ethics (r=.544) whereas weak correlations were shown between brand association and product pricing (r=.369) and online and offline presence (r = .402). On the other hand, brand association was highly correlated with brand loyalty (r=.806), brand image (r=.745), perceived quality (r=.722) and overall brand equity (r=.744). This study revealed that brand loyalty, brand image, perceived quality and overall brand equity have the strongest overall association with brand association and consumer perceptions of smartphones among millennials at UKZN (Pietermaritzburg campus). Therefore, it is imperative that the mobile industry continues to build loyalty, quality, image, and overall brand equity.

Furthermore, this study has revealed that online and offline presence and product pricing has the weakest association with brand association and consumer perceptions. Therefore, the mobile industry should focus on building a stronger online and offline presence and work on their competitive pricing strategy in order to ensure millennials continue to have a strong perception of the overall brand equity of smartphones. Most significantly, the results obtained in this study showed that the vast majority of millennials deem the opinion of other individuals as a driving force in their search for information, as well as holding an influence over their purchasing. This study has highlighted that millennials lean more towards recommendations made by other consumers and are most likely to be influenced by their friends and family as sources of information when deciding on what smartphones to purchase.

These findings are not consistent with previous studies. These include the study conducted by Sirola and Gallopeni (2020) who suggested that there is a positive (medium to high level) correlation between brand association and consumer perceptions whereby the p-value was at $p < 0.01$. Furthermore, a regression analysis was conducted, and the 'R' value was at (0.70) ,which clearly stipulated a very high (strong) positive relationship between the independent and dependent variables namely, brand association, brand awareness, brand loyalty and perceived quality. Furthermore, an ANOVA analysis confirmed that the results are statistically significant, $F(3, 110) = 45.97$, at $p < 0.01$. Moreover, a study conducted by Hossain and Ahmed (2018) on the impact of brand association and the buying behaviour of millennials towards smartphones in Bangladesh stipulated similar results. This study postulated brand loyalty had the highest impact on buying behaviour "($r=0.842$, $p<0.01$), followed by perceived quality ($r=0.812$, $p<0.01$) and brand association ($r=0.720$, $p<0.01$)". Therefore, the researcher has achieved the first objective of determining the association between brand association and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg).

5.2.2. Discussion pertaining to objective two – to examine the association between brand awareness and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg):

As aforementioned, the research questions 6,7 and 8 were:(I think of my current smartphone brand, first among many smartphone brands, I heard of my current smartphone brand before using it, and I am easily aware of the symbol or logo of the smartphone brand I use) had addressed objective two.

There were moderate correlations between brand awareness and brand association ($r=.537$), brand loyalty ($r = .518$), brand image ($r=.558$), perceived quality ($r=.604$), product packaging ($r = .649$), online and offline presence ($r= .538$), and overall brand equity ($r= .540$). In contrast, weak correlations were shown between brand awareness and product pricing ($r=.317$) and brand values and ethics ($r= .354$). This study had highlighted that the vast majority of variables had a moderate correlation with brand awareness and overall consumer perceptions. Furthermore, the perceived quality product packaging and brand image played an imperative role in the brand awareness of smartphones among millennials at UKZN (Pietermaritzburg campus). Therefore, it is imperative that the mobile industry continues to build stronger brand association, loyalty, quality, image, product packaging, online and offline presence and overall brand equity. Furthermore, this study has revealed that product pricing and brand values and ethics had the weakest association with brand association and consumer perceptions. The mobile industry ought to focus on building a stronger association between brand values and ethics and competitive pricing strategy in order for millennials to have a stronger perception of the overall brand equity of smartphones. Most significantly, the results showed that the vast majority of millennials have a positive awareness of their current smartphone brand and are easily aware of the symbol or logo of the smartphone brand.

This study has shown that' brand awareness has a positive relationship with consumer perceptions of smartphone brands ($\beta = 0.69$, $p<0.05$). Furthermore, Alam and Saeed (2016) deduced that being aware of universities in Pakistan augmented the institutions' brand equity ($r = 0.52$). Lastly, Sasmita and Suki (2015) uncovered that consumer buying behaviour had a significant influence on brand awareness and knowledge of a brand ($\beta = 0.42$, $p<0.05$).

However, these findings are not consistent with previous studies conducted by Tong and Hawley (2009) in the sportswear industry who found that there was no direct relationship between brand equity and brand awareness ($\beta = 0.10$, $p>0.05$). Most significantly, these findings had indicated that being familiar with a brand does not substantiate a positive relationship. Furthermore, a study conducted by Hossain and Ahmed (2018) on the impact of brand awareness on the buying behaviour of millennials towards smartphones in Bangladesh stipulated similar results whereby all the dimensions have a strong relationship with buying behaviour while "brand awareness comparatively has a weaker relationship ($r=0.482$, $p<0.01$)". Therefore, the researcher has achieved the second objective of examining the association between brand awareness and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg).

5.2.3. Discussion pertaining to objective three – to determine the association between perceived quality and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg):

As aforementioned, the research questions 20,21,22 and 23 were: (*the quality of the smartphone brand I am using is high, the performance of my current smartphone is high, I am most likely to continue my relationship with the smartphone brand I use because it offers me longevity, reliability, and durability, and the quality of my current smartphone outperforms other competitors in the market) had addressed objective three.*

There were moderate correlations between perceived quality and brand awareness ($r=.604$), product pricing ($r=.526$), and online and offline presence ($r=.502$) whereas, weak correlations were shown between perceived quality and brand values and ethics ($r=.462$). On the other hand, perceived quality was highly correlated with brand association ($r=.722$), brand loyalty ($r=.835$), brand image ($r=.873$), product packaging ($r=.793$) and overall brand equity ($r=.862$). The researcher discovered that the strongest correlation between perceived quality and overall consumer perceptions was found in terms of perceived quality, brand loyalty, brand image, brand association, product packaging, and overall brand equity, and played an imperative role in the perceived quality of smartphones among millennials at UKZN (Pietermaritzburg campus). Furthermore, this study has found that brand values and ethics had the weakest association with brand association and consumer perceptions. The mobile industry needs to focus on building a stronger association between brand values and ethics and perceived quality in order to ensure millennials continue to have a stronger perception of the overall brand equity of smartphones. Most significantly, the results showed that the vast majority of millennials have a positive association with the quality of their smartphone brand and are most likely to continue their relationship with the smartphone brand they are currently using because it offers longevity, reliability, and durability, and the quality of their current smartphone outperforms other competitors in the market.

A study facilitated by Saleem and Omar (2015), on measuring the customer-based beverage industry of Pakistan revealed that in the case of the perceived quality, the results are ($\beta = 0.460$, $t = 5.000$, $p =. 000$) which shows a significant positive relationship between the brand loyalty and perceived quality. Most significantly, this study uncovered that an individual with a positive awareness of a brand is less likely to perceive the quality of a brand negatively. In another study by Alhaddad (2015), the results obtained revealed perceived quality had a significant positive effect on both brand image and brand loyalty. In addition, the researcher observed that perceived quality has the bigger impact on brand loyalty ($\beta = 0.25$) when compared with both the dimensions of brand image ($\beta = 0.21$) and brand trust ($\beta = 0.19$).

On the other hand, a study conducted on the sportswear industry by Tong and Hawley (2009) found that perceived quality did not have a positive or direct relationship with brand equity ($\beta = -0.07$, $p>0.05$). Despite this, the latter findings indicate that overall perceived quality has a positive effect on brand equity. As a result, if brand equity is to be sustained over time, mobile phone manufacturers must continually invest in financial and human capital resources to improve the quality of their products. Therefore, the researcher has achieved the third objective of this study to determine the association between perceived quality and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg).

5.2.4. Discussion pertaining to objective four – to explore the association between brand loyalty and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg):

As aforementioned, the research questions 12,13,14 and 15 were: (when I purchase a smartphone, my current smartphone brand is always my first choice, If I were to buy another smartphone in future, I would choose my current smartphone brand again, I would recommend my current smartphone brand to my family and friends, and my current smartphone makes me want to get accessories for it and other complementary products like apps) had addressed objective four.

There were moderate correlations between brand loyalty and brand awareness ($r=.518$) and product packaging ($r=.680$) whereas weak correlations were shown between brand loyalty and product pricing ($r=.396$), brand values and ethics ($r= .429$) and online and offline presence ($r=.382$). On the other hand, brand loyalty was highly correlated with brand association ($r=.806$), brand image ($r=.761$), perceived quality($r=.835$) and overall brand equity ($r=.744$).

This study revealed brand association, brand image, perceived quality and overall brand equity had the strongest correlation between brand loyalty and overall consumer perceptions. Therefore, brand loyalty played an imperative role among millennials at UKZN (Pietermaritzburg campus). Furthermore, this study has revealed that brand values and ethics, product pricing and online and offline presence had the weakest association with brand loyalty and consumer perceptions. The mobile industry should focus on building a stronger association between these variables in order to ensure millennials continue to have a stronger perception of the overall brand equity of smartphones. Most importantly, the results revealed that the vast majority of millennials have a positive association with brand loyalty and that this cohort is willing to pay more for a product that can be customised for their personal use, as well as for products that are consistent with their image. This shows millennials attribute more importance to factors such as customisation, complementary accessories and products, and recommendations made from family and friends.

A study conducted by Sasmita and Suki (2015) supports the findings of this study as it reveals that brand equity is affected by brand loyalty. It is believed that young consumers usually lean towards familiar products or brands as their first preference for evaluation and selection in contrast with other products or brands to reduce the perceived risks. Most significantly, this study revealed that brand loyalty plays a significant role in product usage experience among millennials. According to Sasmita and Suki (2015), brand loyalty is important in a social media setting because millennials will not switch to another product or brand if they are satisfied with one that appears on social media. Most significantly, social influences such as pressure from friends and family also influence students' use of social media via smartphones.

Nonetheless, Yu *et al*. (2021) discovered that "brand involvement has a positive effect on brand loyalty: a stimulus–organism–response (S-O-R) perspective on Huawei's brand loyalty in China." Most importantly, similar studies have indicated that consumer involvement positively influences service brand satisfaction and brand loyalty. Therefore, the researcher has achieved the fourth objective of this study to explore the association between brand loyalty and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg).

5.2.5. Discussion pertaining to objective five – to investigate the association between brand image and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg):

As aforementioned, the research questions 16,17,18and19 were:(the brand image of the smartphone I use, is more unique than that of other brands, I have a good impression of the overall image of the smartphone I use, I trust the smartphone brand I use, and I personally feel that the smartphone brand I use is the most innovative in the market) had addressed objective five.

There were moderate correlations between brand image and brand awareness (r=.558), product pricing (r=.556), brand values and ethics (r= .524) and online and offline presence (r=.522). On the other hand, brand image was highly correlated with brand association (r=.745), brand loyalty (r=.761), brand image (r=.873), product packaging (r =.717) as well as overall brand equity (r=.774). This study revealed brand association, brand loyalty, perceived quality, product packaging and overall brand equity had the strongest correlations between brand image and overall consumer perceptions. Therefore, brand image played an imperative role among millennials at UKZN (Pietermaritzburg campus). Furthermore, this study revealed that brand values and ethics, product pricing, online and offline presence, and brand awareness had moderate association with brand image and consumer perceptions. The mobile industry should focus on building a stronger association between these constructs in order for millennials to continue to have a stronger perception of the overall brand equity of smartphones. Most notably, the findings revealed that the vast majority of millennials have a positive association with brand image, a favourable impression of the overall image of their smartphone, trust their smartphone brand, and believe that the smartphone brand they are using is the most innovative on the market.

A study conducted by Sanny *et al*. (2020) on purchase intention on Indonesian male skin care by social media marketing effect on brand image and brand trust discovered that brand image is thought to significantly impact purchase intention. The results of the association was (path coefficient = .259, p = .05), and brand trust result (path coefficient = .255, p = .05) which means brand image and brand trust constitute 56.1 percent of the purchase intention. Furthermore, prior studies in industries such as mobile phones, higher education and banking have found that brand image is one of the most influential factors driving brand equity (Alam and Saeed, 2016; Sasmita and Suki, 2015; Ahmed, Ahsan and Majeed, 2014; Fatema, Azad and Masum, 2013). In addition, empirical results from the study by Sanny *et al*. (2020), indicate that only the favourable brand image has a positive influence over customer loyalty, while the unfavourable brand image has no significant influence. On the other hand, a study conducted by Cheung, *et al*(2019) revealed that brand image significantly affected brand equity negatively ($\beta = -0.09$, $p<0.05$). These findings highlighted that for Gen Y South Africans, the brand knowledge composition (awareness and image) could be so mundane that it does not add value to the purchase decision. Therefore, the researcher has achieved the fifth objective of this study to investigate the association between brand image and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg).

5.2.6. Discussion pertaining to objective six – to explore the association between product pricing on consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg):

As aforementioned, the research questions 24,25,26 and 27 were:(relative to other smartphones, my current smartphone brand is a good buy, the smartphone contract which I am currently under offers me good value for money, the smartphone I purchased is reasonably priced, and when I bought my current smartphone ,I felt that I got a reasonable deal) had addressed objective six.

There were moderate correlations between product pricing and brand image (r=.556) and perceived quality (r=.526). On the other hand, weak correlations were shown between product pricing and brand awareness (r=.317), brand association (r=.369), brand loyalty (r=.396), product packaging (r=. 442), brand values and ethics (r= . 340), online and offline presence (r=. 459), and overall brand equity (r=.476). This study revealed brand image and perceived quality had moderate correlation between product pricing and overall consumer perceptions. Therefore, product pricing is deemed as a crucial factor among millennials at UKZN (Pietermaritzburg campus). Furthermore, this study revealed that brand values and ethics, product packaging, brand awareness, brand association, online and offline presence, and overall brand equity had weak associations with product pricing and consumer perceptions. The mobile industry should focus on building a stronger association between these constructs to ensure millennials continue to have a stronger perception of the overall brand equity of smartphones. Most significantly, the results showed that the vast majority of millennials deem their smartphone brands as a good buy and that the smartphone contract package they use offers good value for money, and their smartphone is reasonably priced.

A study conducted on consumer preferences and pricing models on bubble tea in Indonesia by Iswara and Rahadi (2021) revealed that consumer perceptions play a fundamental role. Therefore, several factors influence consumer perceptions in selecting a bubble tea shop and everyone will have diverse perceptions regarding the bubble tea selection. Consumers' value traits are utilised to evaluate a product concerning the benefits consumers seek when purchasing such a product, as well as comparisons between competitive brands. Mohammed (2018) conducted research on "selling smartphones to Generation Z: understanding factors influencing the purchasing intention of smartphone". It was therefore surprising to find out in this study that payment options appear to be the most crucial component influencing smartphone purchasing intuition with beta ($ß = 0.431$ and $p=0.001$). According to Mohammed (2018), the more payment options the seller or service provider presents to the Gen Z cohort, the more likely they would be to purchase the smartphone. In spite of this, perceived usefulness, perceived ease of use and product price appears to not have any substantial influence on smartphone purchasing intuition among Gen Z as the results presented that the computed p-value for these three factors were greater than 0.05 (Mohammed, 2018).

In another study conducted by Sarjono *et al.* (2019), the results based on the effect test had concluded the following: "product features and price has a significant effect on purchase intention (PF → PI) (P → PI). This means that consumers in Jabodetabek are more concerned with price and product features in the context of choosing an Android-based smart phone." A study conducted in a Malaysia university setting revealed that there is a significant relationship between product features (PF) and purchasing intention (PI). The results showed that a significant positive correlation coefficient [existed?] between PF and PI ($r = .359, p<.01$) (Rahim *et al.,* 2016) .Therefore, the researcher has achieved the sixth objective of this study to explore the association between product pricing on consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg).

5.2.7. Discussion pertaining to objective seven – to identify the association between product packaging on consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg):

As aforementioned, the research questions 28,29 and 30 were:(the design of my smartphone is visually attractive, my smartphone attracts my senses very much (e.g., touch, functionality, sound, and the smartphone I currently use is physically durable (waterproof ,scratch resistant ,and wireless charging) had addressed objective seven.

There were moderate correlations between product packaging and brand awareness (r=.649), brand association (r=.616), brand loyalty (r=.680), brand values and ethics (r=.530) and online and offline presence (r=.623) whereas weak correlations were shown between product packaging and product pricing (r=.442). On the other hand, product packaging was highly correlated with brand image (r=.717), perceived quality (r=.793), and overall brand equity (r=.751). This study has shown perceived quality, brand image, and overall brand equity had the strongest correlation between product packaging and overall consumer perceptions. Therefore, product packaging played an imperative role among millennials at UKZN (Pietermaritzburg campus). Furthermore, this study revealed product pricing had a weak association with product packaging and consumer perceptions. The mobile industry needs to focus on building a stronger association between this construct in order for millennials to continue to have a stronger perception of the overall brand equity of smartphones. Most significantly, the results showed that the vast majority of millennials have a positive association with product packaging and deem the design of their smartphone as visually attractive. They also believe smartphones attract their senses very much (e.g., touch, functionality, sound) and that they are physically durable (waterproof, scratch resistant, and have wireless charging).

According to Ampuero and Vila (2006), packaging colour, packaging typography, graphic forms and packaging illustrations play a crucial role in consumer perceptions. Products that are directed to the upper-class consumers are offered at a higher price based on elegant and refined aesthetics packaging. In contrast, accessible products that are directed to price sensitive consumers are offered at a low to medium price. These components (colour, typography, form, and illustration) are merged in numerous ways to communicate the desired perception in consumers' minds. A study conducted on the Bangladeshi biscuit industry by Samdani and Enam, (2019) discovered that good packaging conveys a positive image of a brand and adds value in the minds of consumers. Furthermore, pricing, distinct colour and packaging style plays a positive and influential role in consumer buying behaviour. Most significantly, premium packaging is positively correlated with brand equity. If the brand is good, then consumers expect the packaging would also be good (Samdani and Enam, 2019). Therefore, the researcher has achieved the seventh objective of this study to identify the association between product packaging on consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus).

5.2.8. Discussion pertaining to objective eight – to determine the association between brand values and ethics on consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg):

As aforementioned, the research questions 31 and 32 were:(I purchased my current smartphone because it adheres to sustainable business values and ethics, and my current smartphone brand is important to me because it is conscious of its environmental impact) had addressed objective eight.

There were moderate correlations between brand values and ethics and brand association (r=.544), brand image (r=.524), product packaging (r=.530), online and offline presence (r =.524) and overall brand equity (r=.571) whereas weak correlations were shown between brand values and ethics and brand awareness (r=.354), brand loyalty (r=.429), perceived quality (r=.462), and product pricing (r=.340). This study has shown brand association, brand image, product packaging, online and offline presence, and overall brand equity had a moderate correlation between brand values and ethics and overall consumer perceptions. Therefore, brand values and ethics played an imperative role among millennials at UKZN (Pietermaritzburg campus). Furthermore, this study revealed product pricing, brand loyalty, brand awareness and perceived quality had a weak association with brand values and ethics and consumer perceptions. The mobile industry should focus on building a stronger association between these constructs in order for millennials to continue to have a stronger perception of the overall brand equity of smartphones. Most significantly, the results showed that the vast majority of millennials have a positive association with brand values and ethics and purchased their current smartphone brands because it adheres to sustainable business values and ethics, and it is conscious of its environmental impact.

Several studies on corporate social responsibility have been conducted by scholars (Go and Bortree, 2017; Vanhamme, Lindgreen, Reast, and van Popering 2012). These scholars share the common viewpoint that social responsibility is deemed as an extremely noticeable form of ethical marketing. In accordance, Maignan and Ferrell (2004) suggest that consumers' ethical awareness and concern in marketing has increased drastically over the past decade. Furthermore, McGoldrick and Freestone (2008) suggest that over the past few years organisations have increased the utilisation of brand values and ethical criteria in making sound marketing decisions. Research conducted by Strutton *et al.* (2011) denotes that millennials are believed to be more engaged in social media than other generations. Therefore, it is imperative that marketers find innovative ways to engage millennials in charitable behaviours on social media (Paulin Ferguson, Schattke, and Jost, 2014). López-Fernández (2020) adds that millennials are hedonistic, tech savvy, socially responsible and environmentally conscious consumers. Results revealed that millennial consumers are less price sensitive in relation to product attributes and hold ethical consumption in high esteem over price when corporate social responsibility engagement is discovered. This speaks to the eighth objective of this study to determine the association between brand values and ethics on consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg).

5.2.9. Discussion pertaining to objective nine – to examine the association between online and offline presence on consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg):

As aforementioned, the research questions 33 and 34 were:(my current smartphone data package allows me to monitor my online and offline activities/experience, and I use my smartphone to participate in online and offline shopping) had addressed objective nine.

There were moderate correlations between online and offline presence and brand awareness (r=.538), brand image (r=.522), perceived quality (r=.502), product packaging(r=.623), brand values and ethics (r=.524) and overall brand equity (r=.509). In contrast, weak correlations were shown between online and offline presence and brand association (r=.402), brand loyalty (r=.382) and product pricing (r=.459). This study has shown brand awareness, brand image, perceived quality, product packaging brand values and ethics, and overall brand equity had a moderate correlation between online and offline presence and overall consumer perceptions. Therefore, brand values and ethics played an imperative role among millennials at UKZN (Pietermaritzburg campus). Furthermore, this study has revealed product pricing, brand loyalty, and brand association had a weak association with online and offline presence and consumer perceptions. The mobile industry needs to focus on building a stronger association between this construct in order for millennials to continue to have a stronger perception of the overall brand equity of smartphones. Most significantly, the results showed that the vast majority of millennials have a positive association with online and offline presence, and the current smartphone data package allows them to monitor their online and offline activities/experience. Additionally, they can use their smartphone to participate in online and offline shopping.

Over the past twenty years studies have revealed that online and offline presence plays an imperative role among consumers. Goodman (2019) discovered that the Smart Partial Least Square (Smart PLS) analysis had a strong relationship between self-efficacy, perceived usefulness, attitude, intention, and e-commerce adoption in a study measuring e-commerce adoption behaviour among gen-Z in Jakarta, Indonesia. Furthermore, Goodman (2019) findings revealed that online and offline e-service quality became the predictable prognosticator of online customer value and satisfaction. In addition, the results reinforce the facilitating function of online customer value between e-service quality and e-satisfaction, as well as explain the relationship between online customer value and e-satisfaction. Finally, the influence of e-satisfaction on e-loyalty has been proven in this study. Therefore, the researcher has achieved the ninth objective of this study to examine the association between online and offline presence on consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg).

5.3 Conclusion

This chapter discussed the findings in relation to the research objectives of this study and demonstrated how the research objectives were met through data analysis. The findings of this study revealed that brand equity and consumer perceptions influence millennials' decisions to purchase a smartphone at the University of KwaZulu-Natal, Pietermaritzburg, and in general. The various constructs used in this study revealed that various variables are used at various stages of the decision-making process when purchasing a smartphone. As a result, smartphone companies should recognise that consumers require access to or the ability to purchase from various platforms or channels, such as online stores or physical stores, as this is thought to have a positive impact on the brand and sales. As described in the literature review, millennials are the generation of digital natives. Furthermore, this study found that millennials are more likely than any other generation to engage with a brand in a digital environment. Most importantly, millennials are more likely to engage with new communication channels, and the mobile industry must align their functional values, monetary value, symbolic values, and overall brand equity in order to effectively reach this generation's terror.

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

6.1. Introduction

The aforementioned chapter has presented an inclusive discussion of the results that were obtained from the respondents which referred to the research objectives and literature of this study. This chapter will provide a summary on the various research findings and processes and will deliver a concise overview of the strengths and drawbacks of this study as well as provide recommendations for future related research.

6.2. Summary of the chapters

In chapter one, a brief introduction of the concepts of brand equity, consumer perceptions, mobile industry and millennials were discussed in the background of the study. This chapter also depicted the research problem that was to be investigated in this study. To investigate the problem, a main research question was formulated, and sub-research questions were underpinned. The main research question underpinning this study was: is there an association between brand equity and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus)? Thereafter, research objectives stemmed from these questions and were presented in this chapter too. The primary objective of this study was to determine the key brand equity associations between consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg) campus. The chapter also represented a preliminary literature review and a brief description of the research methodology that was utilised to carry out this study. The chapter further presented the significance of the study, ethical considerations, limitations, quality control, and brief structure of the dissertation.

In chapter two, a review of the studies previously conducted in relation to brand equity and consumer perceptions were discussed. This chapter represented the review of the literature on the phenomenon that is brand equity, consumer perceptions, smartphones, and millennials buying-behaviour. A comprehensive summary of previous research regarding the evolution of branding including the importance of brand equity, perspectives of brand equity, conceptualisation of brand equity, and brand equity measurement was presented. Furthermore, consumer perceptions, predictive expectations and normative expectations, the importance of consumer perceptions, conceptualisation of consumer perceptions, attributes of consumer perceptions were presented in this chapter. Most significantly, the evolution of smartphones, statistics of smartphones, and the most popular brands of smartphones, millennials, attributes of millennials and the buying behaviour of this cohort were discussed.

In chapter three, an in-depth description of the research methodology was presented. A quantitative approach was adopted in this study and questionnaires were used to collect data from a sample of 165 students. The sample size was selected using the Gill *et al*. (2010) table from a target population of 2 314 millennial students registered at the University of KwaZulu-Natal, (Pietermaritzburg campus).The students who participated in this study were selected using the convenience sampling technique.

In chapter four, a comprehensive result analysis was articulated from the respondents. Thereafter, a reliability and normality test was conducted in order to test the credibility of this study. In addition, the normality test results illustrated that the data collection method utilised in this study did not follow a normal distribution and, therefore, a non-parametric test was conducted. In this study, cross tabulations, chi-square, and the overall correlations between the aspects of brand equity dimensions and overall brand equity were generated in order to provide sound results from the data that was collected. Also, a detailed interpretation of the results were acquired in this chapter.

In chapter five, a discussion of the results were provided which was aligned to previous scholarly research and the objectives of this study.

This chapter focused on presenting the conclusion of this study in relation to the results acquired from the analysis and discussion chapter.

6.3. Summary of the findings

The main research question underpinning this study was: *i*s there an association between brand equity and consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg campus)?

In this study an explanatory approach was employed, and quantitative data was collected from the students in the form of questionnaires. The data was analysed utilising a statistical software programme called SPSS and descriptive and inferential results were attained. This study comprised ten constructs which were measured to calculate the validated items. A comprehensive analysis was conducted on the means and standard deviations of these constructs. The questions posed to the respondents were based on brand awareness, brand association, brand loyalty, brand image, perceived quality, product pricing, product packaging, brand values and ethics, online and offline presence, and overall brand equity. The responses to the questions of each construct were given on a five-point Likert scale of 'Strongly agree,' coded as 1, to 'Strongly Disagree', coded as 5.

The results of this study revealed that respondents were fairly aware of their smartphone brands and were able to recall the symbols and logos of their smartphone brands. Moreover, the results highlighted that most participants (48.1%) strongly agreed that they thought of their current smartphone first among the many smartphone brands. Furthermore, brand association played an imperative role as this research reveals that respondents have a fairly positive association of their smartphone brands and their smartphone brands have improved how their peers perceive them. In respect to brand loyalty, 30.4% of Huawei users disagreed that their current smartphone brand is always their first choice when they purchase a smartphone compared to 45% of Nokia and Samsung users who agreed. Furthermore, most Apple (75.0%), Huawei (50.0%), Samsung (49.0%), Nokia (45.5%), or LG (42.9%) users strongly agreed or agreed that they would recommend their current smartphone brand to their family and friends. Most respondents across all age groups said they trust their smartphone brand and have a good impression of the brand image.

In terms of whether respondents regard their current smartphone brand as a good buy relative to other smartphones, most respondents (regardless of smartphone brand) said they felt they got a reasonable deal when they bought their smartphone. A notable percentage of Apple, Huawei, LG, Nokia, or Samsung users were neutral when it came to the statement “my current smartphone brand is important to me because it is conscious of its environmental impact” (25.0%, 28.3%, 28.6%,17.6% and 27.3%, respectively). Regardless of the smartphone brand, 53.8% of respondents strongly agreed that they use their smartphone to participate in online and offline shopping. Furthermore, most respondents using these brands agreed that even when other smartphone brands are offered at a reduced price or on promotion, they would still prefer to buy their current smartphone brand.

Lastly, a non-parametric correlation analysis was shown, whereby the Pearson correlation coefficient was conducted in order to establish whether a relationship exists between the variables. The constructs of this study were all positively correlated, meaning that a relationship exists between the variables.

6.4. Limitations of the study

This research, as with any study, had a number of limitations which may motivate the direction for future research. A major limitation that the researcher faced was the COVID-19 pandemic. The researcher was unable to gather the desired amount of 330 questionnaires and had to settle for 165 questionnaires to be distributed to respondents. As a result of COVID-19 restrictions, the researcher was unable to physically distribute the questionnaire and instead had to create an online questionnaire using Microsoft forms. In addition, the researcher made use of the snowball technique to collect data and appealed for respondents to complete the questionnaire online after online classes.

The researcher only focused on students at one campus and not the other University of KwaZulu-Natal campuses.

In addition, the researcher focused solely on a particular age group which ranged from 24-39 years old (Gen Y or millennials) which happened to be a limitation within this study. Therefore, the younger adults who fell into the Gen Z cohort did not partake in this study and so the results and findings of this study might not represent a holistic viewpoint from the upcoming tech-savvy Gen Z cohort.

6.5. Recommendations

The following recommendation relates to this assertion:

The findings of this study will immensely benefit the companies in the smartphone industry as brand strategies play a significant part in the manner in which customers utilise a product or service (Muigai, 2017). The growing demand for smartphones in South Africa validates the reasoning of why university students in particular purchase smartphones. Therefore, companies that offer smartphones to the public should incorporate and apply what has been observed in this study as it will put them in a better position to comprehend the significance of the application aspect of brand equity in their marketing efforts.

As observed, brand awareness and brand image plays an imperative role in consumer perceptions of smartphones among millennials. Therefore, smartphone companies should ensure that they sustain high levels of brand recognition and brand recall in the minds of their consumers.

Brand association is believed to be a fundamental factor in the minds of the consumer when purchasing a smartphone. Henceforth, smartphone companies need to remain consistent with their brand identity and provide credible and positive cues for the consumer.

Perceived quality has a subjective nature among smartphone users. Therefore, smartphone companies should exceed the perceptions and expectations of their consumers and should sustain 'high quality' smartphone brands.

Brand loyalty works hand-in-hand with prior purchasing and experience made by consumers. Consequently, smartphone companies should focus on delivering devices that have the capability to shape the consumer's attitude and experience of the brand.

Product pricing, product packaging, brand values and ethics, and online and offline presence plays a vital role in consumer perceptions of smartphones. Therefore, smartphone companies need to constantly promote integrated marketing communication and digital transformation.

6.6. Suggestions for future research

This study was generalised to the smartphone industry; however, it is recommended that in future research the study should narrow down the scope and place emphasis on a specific smartphone brand with an aim to provide relevant insights that could possibly prove beneficial to that particular smartphone company. In addition, a comparative analysis could be conducted between well established and emerging smartphone brands.

Future research should examine a more holistic understanding of diverse concepts besides brand equity and consumer buying behaviour. Therefore, future research could focus on the techno-savvy Gen-Z cohort in the context of mobile technology addictions or smartphones and the future of market research.

A qualitative approach or a mixed method approach could be researched in the future, whereby textual data can be developed in the form of themes, categories, and relationships between variables. Therefore, observations, surveys, secondary data, interviews or focus groups can be conducted to gain in-depth understanding of the diverse ethnography of consumers buying behaviour.

In addition, future research should not only focus on the testing of conceptual models with other samples and product categories but should investigate other possible sources of market research over time in the mobile industry.

Lastly, future research can focus on novel factors that can be tested to establish innovative research models and generate a comparative analysis with the current findings provided in this study.

Most significantly, future research can test the importance of Generation Y and Z in the context of customer engagement and cause-related marketing within the mobile industry.

6.7. Concluding remarks

Brands such as Apple and Samsung have steadily dominated the mobile phone industry. Therefore, there is a need to investigate the sources and outcomes of various other smartphone brands among Gen Y in the context of brand equity and consumer perceptions. This study was motivated by the need to identify the benefits that the mobile industry can gain from high brand knowledge from consumers, which can give the mobile industry a direction in terms of what the consumer expects and prefers. Overall, the study uncovered that smartphone brand equity and consumer perceptions are constituted by nine factors including brand awareness, brand association, brand image, perceived quality, brand loyalty, product pricing, product packaging, brand values and ethics, and online and offline presence.

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APPENDIX A – ETHICAL CLEARANCE LETTER

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

15 February 2021

Miss Shanice Abegail Mary Oliver (212559826)
School Of Man Info Tech & Gov
Pietermaritzburg Campus

Dear Miss Oliver,

Protocol reference number: HSSREC/00002362/2021
Project title: The association between brand equity and consumer perceptions of smartphones among millennials in Pietermaritzburg
Degree: Masters

Approval Notification – Expedited Application

This letter serves to notify you that your application received on 21 January 2021 in connection with the above, was reviewed by the Humanities and Social Sciences Research Ethics Committee (HSSREC) and the protocol has been granted **FULL APPROVAL.**

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

This approval is valid until 15 February 2022.
To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close-out report to be submitted when study is finished.

All research conducted during the COVID-19 period must adhere to the national and UKZN guidelines.

HSSREC is registered with the South African National Research Ethics Council (REC-040414-040).

Yours sincerely,

[redacted]

Professor Dipane Hlalele (Chair)

/dd

Humanities and Social Sciences Research Ethics Committee
Postal Address: Private Bag X54001, Durban, 4000 South Africa
Telephone: +27 (0)31 260 8350/4557/3587 **Email:** hssrec@ukzn.ac.za **Website:** https://research.ukzn.ac.za/Research-Ethics
Founding Campuses: Edgewood · Howard College · Medical School · Pietermaritzburg · Westville

INSPIRING GREATNESS

APPENDIX B – GATEKEEPERS' LETTER _AMENDED VERSION

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

11 January 2022

Ms Shanice Oliver (SN 212559826)
School of Management, IT and Governance
College of Law and Management Studies
Pietermaritzburg Campus
UKZN
Email: 212559826@stu.ukzn.ac.za

Dear Ms Oliver

RE: PERMISSION TO CONDUCT RESEARCH

Gatekeeper's permission is hereby granted for you to conduct research at the University of KwaZulu-Natal (UKZN) towards your postgraduate studies, provided Ethical clearance has been obtained. We note the title of your research project is:

"The association between brand equity and consumer perceptions of smartphones among millennials in Pietermaritzburg."

It is noted that you will be constituting your sample as follows:

- With a request for responses on the website. The questionnaire must be placed on the notice system http://notices.ukzn.ac.za. A copy of this letter (Gatekeeper's approval) must be simultaneously sent to (govenderlog@ukzn.ac.za) or (ramkissoonb@ukzn.ac.za).

Please ensure that the following appears on your notice/questionnaire:

- Ethical clearance number;
- Research title and details of the research, the researcher and the supervisor;
- Consent form is attached to the notice/questionnaire and to be signed by user before he/she fills in questionnaire;
- gatekeepers approval by the Registrar.

You are not authorized to contact staff and students using the 'Microsoft Outlook' address book. Identity numbers and email addresses of individuals are not a matter of public record and are protected according to Section 14 of the South African Constitution, as well as the PAIA and POPI Act. For the release of such information over to yourself for research purposes, the University of KwaZulu-Natal will need express consent from the relevant data subjects. Data collected must be treated with due confidentiality and anonymity.

Yours sincerely

[redacted]

Dr KE Cleland: Registrar

Office of the Registrar
Postal Address: Private Bag X54001, Durban, 4000, South Africa
Telephone: +27 (0)31 260 7971 **Email:** registrar@ukzn.ac.za **Website:** www.ukzn.ac.za

Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

INSPIRING GREATNESS

APPENDIX C – QUESTIONNAIRE

Researcher : Shanice Oliver

Supervisor : Dr. Sanjay Soni

School of Management, IT and Governance

College of Law and Management Studies

1. Kindly note that ownership of a smartphone and being a millennial (aged between 24 - 39 years old) will be important qualifying criteria in order to complete this questionnaire.
2. It will take approximately 15 -20 minutes to complete this questionnaire
3. Kindly take note of the instructions before answering any question(s)
4. Please note that there are no right or wrong answers
5. Please be aware that you are free to withdraw your participation from this study should you wish to do so
6. Kindly sign the letter of informed consent, giving the researcher permission to utilise your responses for the purpose of this study

GENERAL INSTRUCTION: In all the sections, please insert a tick (√) in the appropriate box to the option that is most applicable (applies) to you

SECTION A : DEMOGRAPHIC DETAILS

1	**Gender**	Male	Female	Non-Binary	Other	Do not wish to answer	
2	**Age**	24-26	27-31	32-35	36-39		
3	**Ethnicity**	African	Coloured	Indian	White	Other:	
4	**Year of Study**	1st Year	2nd Year	3rd Year	Honours	Masters	PhD

5	**Please specify the brand of smartphone you own.**	Apple	Samsung	Huawei	Nokia	LG	Xiamoi	Other specify

SECTION B: BRAND AWARENESS

Please indicate the extent to which you agree or disagree with the following statements by ticking or crossing the relevant column below.

1= Strongly Agree	***2=Agree***	***3= Neutral***	***4= Disagree***	***5=Strongly Disagree***

No.	**Brand Awareness**	1	2	3	4	5
BA 6	I think of my current smartphone brand, first among many smartphone brands.					
BA 7	I heard of my current smartphone brand before using it.					
BA 8	I am easily aware of the symbol or logo of the smartphone brand I use.					

SECTION C: BRAND ASSOCIATION

Please indicate the extent to which you agree or disagree with the following statements by ticking or crossing the relevant column below.

1= Strongly Agree	***2=Agree***	***3= Neutral***	***4= Disagree***	***5=Strongly Disagree***

No.	**Brand Association**	1	2	3	4	5
BAS 9	I typically go for my smartphone brand because it is highly reliable.					
BAS 10	The smartphone brand I use reflects my individuality (e.g., fun, practical, and technical).					
BAS 11	I feel my smartphone brand improves how I am perceived by my peers.					

SECTION D: BRAND LOYALTY

Please indicate the extent to which you agree or disagree with the following statements by ticking or crossing the relevant column below.

1= Strongly Agree	***2=Agree***	***3= Neutral***	***4= Disagree***	***5=Strongly Disagree***

No.	**Brand Loyalty**	1	2	3	4	5
BL 12	When I purchase a smartphone, my current smartphone brand is always my first choice.					
BL 13	If I were to buy another smartphone in future, I would choose my current smartphone brand again.					
BL	I would recommend my current smartphone brand to					

14	my family and friends.					
BL 15	My current smartphone makes me want to get accessories for it. and other complementary products like apps.					

SECTION E: BRAND IMAGE

Please indicate the extent to which you agree or disagree with the following statements by ticking or crossing the relevant column below.

1= Strongly Agree	*2=Agree*	*3= Neutral*	*4= Disagree*	*5=Strongly Disagree*

No.	Brand Image	1	2	3	4	5
BI 16	The brand image of the smartphone I use, is more unique than that of other brands.					
BI 17	I have a good impression of the overall image of the smartphone I use.					
BI 18	I trust the smartphone brand I use.					
BI 19	I personally feel that the smartphone brand I use is the most innovative in the market.					

SECTION F: PERCEIVED QUALITY

Please indicate the extent to which you agree or disagree with the following statements by ticking or crossing the relevant column below.

1= Strongly Agree	*2=Agree*	*3= Neutral*	*4= Disagree*	*5=Strongly Disagree*

No.	Perceived Quality	1	2	3	4	5
PQ 20	The quality of the smartphone brand I am using is high.					
PQ 21	The performance of my current smartphone is high.					
PQ 22	I am most likely to continue my relationship with the smartphone brand I use, because it offers me longevity, reliability, and durability.					
PQ 23	The quality of my current smartphone outperforms other competitors in the market.					

SECTION G: PRODUCT PRICING

Please indicate the extent to which you agree or disagree with the following statements by ticking or crossing the relevant column below.

1= Strongly Agree	*2=Agree*	*3= Neutral*	*4= Disagree*	*5=Strongly Disagree*

No.	Product Pricing	1	2	3	4	5
PP 24	Relative to other smartphones, my current smartphone brand is a good buy					
PP 25	The smartphone contract which I am currently under offers me good value for money.					
PP 26	The smartphone I purchased is reasonably priced.					
PP 27	When I bought my current smartphone ,I felt that I got a reasonable deal.					

SECTION H: PRODUCT PACKAGING

Please indicate the extent to which you agree or disagree with the following statements by ticking the relevant column below .

1= Strongly Agree	***2=Agree***	***3= Neutral***	***4= Disagree***	***5=Strongly Disagree***

No.	Product Packaging	1	2	3	4	5
PPA 28	The design of my smartphone is visually attractive.					
PPA 29	My smartphone attracts my senses very much(e.g., touch, functionality, sound)					
PPA 30	The smartphone I currently use is physically durable (waterproof ,scratch resistant ,and wireless charging)					

SECTION I : BRAND VALUES AND ETHICS

Please indicate the extent to which you agree or disagree with the following statements by ticking or crossing the relevant column below.

1= Strongly Agree	***2=Agree***	***3= Neutral***	***4= Disagree***	***5=Strongly Disagree***

No	Brand Values and Ethics	1	2	3	4	5
BVE 31	I purchased my current smartphone because I believe that the brand values adheres to sustainability and ethical practices					
BVE 32	My current smartphone brand is important to me because I believe that the brand adheres to the environmental and ethical practices					

SECTION J: ONLINE AND OFFLINE PRESENCE

Please indicate the extent to which you agree or disagree with the following statements by ticking or crossing the relevant column below.

1= Strongly Agree	*2=Agree*	*3= Neutral*	*4= Disagree*	*5=Strongly Disagree*

No	Online and Offline Presence	1	2	3	4	5
OOP 33	My current smartphone data package allows me to monitor my online and offline activities/experience.					
OOP 34	I use my smartphone to participate in online and offline shopping.					

SECTION K: OVERALL BRAND EQUITY

Please indicate the extent to which you agree or disagree with the following statements by ticking or crossing the relevant column below.

1= Strongly Agree	*2=Agree*	*3= Neutral*	*4= Disagree*	*5=Strongly Disagree*

No	Overall Brand Equity	1	2	3	4	5
OBE 35	Even if there is another smartphone brand as good as mine, I would still prefer my smartphone brand.					
OBE 36	My perception of the business model that my current smartphone brand uses is economically sustainable and innovative.					
OBE 37	The current smartphone brand I use is memorable and recognisable, which makes me confident about its longevity in the market.					
OBE 38	My overall perception of my smartphone in regard to (e.g., Price, packaging,quality,brand values and online and offline presence) is high.					
OBE 39	Even when the cost of other smartphones are offered at a reduced price or are on promotion , I will still prefer to buy my smartphone brand.					
OBE 40	Even when the price of other phones are reduced, I will still prefer to buy my smartphone brand.					

Thank you for taking the time to complete this questionnaire. I am extremely grateful for your contribution and your valuable time.

APPENDIX D – INFORMED CONSENT FORM

UKZN HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE (HSSREC)

APPLICATION FOR ETHICS APPROVAL
For research with human participants

Information Sheet and Consent to Participate in Research

Date:

Greetings,

My name is Shanice Oliver from the University of KwaZulu-Natal Pietermaritzburg campus studying towards my Master of Commerce in Marketing Management in the School of Management ,IT& Governance within the College of Law and Management.

You are being invited to consider participating in a study that involves research on brand equity associations between consumer perceptions of smartphones among millennials at the University of KwaZulu-Natal (Pietermaritzburg) campus. The aim and purpose of this research is to examine the association between brand equity and consumer perceptions of smartphones among millennials in Pietermaritzburg at the University of KwaZulu-Natal (Pietermaritzburg) students. The study is expected to include 165 participants in total, at the University of KwaZulu Natal (Pietermaritzburg) campus, who have a smartphone and are between the ages of 24 to 39 years old, will be selected to be representatives of the population. It will involve the following procedures the selection and recruiting process of conducting this research will be advertised on student central and the University notice system. The researcher will create Microsoft forms (electronic questionnaire) for students to complete online. The duration of your participation if you choose to participate and remain in the study is expected to be +- 15-20 minutes. The researcher plans on recruiting participants by asking specific lecturers at UKZN to reach out to their students aged between 24-39 years old in their online lectures to kindly take a few minutes to complete the questionnaire. Also, adopting a snowball effect (asking friends to ask their friends to ask their friends at UKZN) to kindly assist in completing the questionnaire. In addition, posting on social media (Facebook and WhatsApp) asking specific UKZN students to complete the questionnaire. Therefore, an inclusion criterion will be adopted in the screening of participants for this study. Lastly,

We hope that the study will create the following benefits by conducting this research at the University of KwaZulu-Natal (Pietermaritzburg) will aid in the understanding of the huge contributions millennials make in the market and therefore, it is of great significance to evaluate how the students are influenced by brand equity in the proliferated market of which smartphones constitute in South Africa. Such insights will help align strategies with mass-media ventures and would enhance the development of communication and marketing strategies that smartphone companies can adopt to create an optimal placement of the organisation's brand in the eyes of its stakeholders. The underlining reasons students prefer one brand over another will also be presented in this research.

This study has been ethically reviewed and approved by the UKZN Humanities and Social Sciences Research Ethics Committee (approval number_____).

In the event of any problems or concerns/questions you may contact the researcher at 212559826@stu.ukzn.ac.za or the UKZN Humanities & Social Sciences Research Ethics Committee, contact details as follows:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION
Research Office, Westville Campus
Govan Mbeki Building
Private Bag X 54001
Durban 4000 KwaZulu-Natal, SOUTH AFRICA
Tel: 27 31 2604557- Fax: 27 31 2604609
Email: HSSREC@ukzn.ac.za

Your participation in the study is voluntary and by participating, you are granting the researcher permission to use your responses. You may refuse to participate or withdraw from the study at any time with no negative consequence. Your anonymity will be maintained by the researcher and the School of Management, I.T. & Governance and your responses will not be used for any purposes outside of this study.

All data, both electronic and hard copy, will be securely stored during the study and archived for 5 years. After this time, all data will be destroyed.

If you have any questions or concerns about participating in the study, please contact me or my research supervisor at the numbers listed above.

Sincerely
Shanice Oliver
S.Oliver

CONSENT TO PARTICIPATE

I (Name) have been informed about the study entitled the association between brand equity and consumer perceptions of smartphones among millennials in Pietermaritzburg at the University of KwaZulu-Natal (Pietermaritzburg) campus by Shanice Oliver.

I understand the purpose and procedures of the study .

I have been given an opportunity to ask questions about the study and have had answers to my satisfaction.

I declare that my participation in this study is entirely voluntary and that I may withdraw at any time without affecting any of the benefits that I usually am entitled to.

If I have any further questions/concerns or queries related to the study I understand that I may contact the researcher at 212559826@stu.ukzn.ac.za .

If I have any questions or concerns about my rights as a study participant, or if I am concerned about an aspect of the study or the researchers then I may contact:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION
Research Office, Westville Campus
Govan Mbeki Building
Private Bag X 54001
Durban
4000
KwaZulu-Natal, SOUTH AFRICA
Tel: 27 31 2604557 - Fax: 27 31 2604609
Email: HSSREC@ukzn.ac.za

Additional consent, where applicable

______________________	______________________
Signature of Participant	**Date**
______________________	______________________
Signature of Witness (Where applicable)	**Date**
______________________	______________________
Signature of Translator (Where applicable)	**Date**

APPENDIX E– EDITORS LETTER

04 May 2022

To whom it may concern

This letter is to confirm that I proofread Ms Shanice Abegail Mary Oliver's thesis titled: *The association between brand equity and consumer perceptions of smartphones among millennials in Pietermaritzburg*. I indicated, and offered corrections for, obvious grammatical errors and formatting inconsistencies. I also recommended the rephrasing of several sections of work that did not make sense to a reader unfamiliar with the research topic. All suggestions were implemented at the discretion of Ms Oliver, and I did not revise her final submission. No content was altered by me and remains to be the sole work of Ms Oliver.

Kind regards

[redacted]

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