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SOURCES OF BRAND EQUITY IN A GOVERNMENT PROGRAMME: A CASE OF THE RENEWABLE ENERGY INDEPENDENT POWER PRODUCERS PROGRAMME (REIPPP) IN SOUTH AFRICA

A research report submitted by

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To the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Management in Strategic Marketing (MMSM).

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ABSTRACT

Assessing the sources of brand equity in the government sector is an area of limited research. This research report applies the Brand Equity theoretical model developed by Aaker (1991a; 1991b) to determine the sources of brand equity in a public sector energy programme in South Africa. The Renewable Energy Independent Power Producers Programme (REIPPP) is a private-public partnership in the renewable energy sector, introduced in 2010.

A brand is considered to be one of the most important intangible assets of any organisation, and therefore the determination of the sources of its value, or brand equity, is of great importance. A quantitative research approach was adopted to guide the study, using a structured survey questionnaire. Data was collected through an online survey from a sample of thirty-two respondents, most of whom have been extensively involved in the REIPPP and analysed using descriptive and inferential statistical methods.

The results of the research study highlighted the most important factors affecting brand equity in the REIPPP, which are brand awareness and perceived benefit. The findings show that Aaker's (1991a; 1991b) Brand Equity model has relevance and applicability in the public sector.

The contribution of this report is to enhance academic understanding of brand equity in the public sector and to explore the implications for management practice whilst providing marketers in the public sector with the tools for public sector marketing.

Keywords: Brand equity, public sector, renewable energy

DECLARATION

I, Nonesi Desiree Mojanaga, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Management in Strategic Marketing (MMSM) at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Nonesi Desiree Mojanaga _____

Signed at _____

On the _____ day of _____ 2020

DEDICATION

To the Lord, although they don’t know you, although they deny you - I acknowledge you as the One who makes all things possible. Nothing is impossible with you, Luke 18:27 (New Living Translation)

To my wonderful family, thank you for your support and encouragement from start to finish.

I thank God for you.

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Professor Geoff Bick. The rock star of brand equity evaluation methods and my supervisor, for your time and support in helping me craft this research report and for all your guidance. Mr Neale Penman – Thank you for making research simple to understand and apply. To the library assistants at the Development Bank of Southern Africa and the University of the Witwatersrand. Thank You.

To all the respondents for your time, insights and feedback in completing the survey**.**

TABLE OF CONTENTS

ABSTRACT I

DECLARATION II

DEDICATION III

ACKNOWLEDGEMENTS IV

LIST OF TABLES IX

LIST OF FIGURES X

CHAPTER 1. INTRODUCTION **1**

1.1 Purpose of the study 1

1.2 Context of the study 3

1.3 Problem statement 4

1.3.1 Main problem 4

1.3.2 Research Questions 5

1.3.3 Significance of the study 6

1.4 Delimitations of the study 7

1.5 Assumptions 7

1.6 Definition of terms 7

CHAPTER 2. LITERATURE REVIEW **10**

2.1 Background to the Renewable Energy Independent Power Producers Programme (REIPPP) in South Africa 10

2.2 Definition of a Brand 13

2.3 Brand Management 14

2.4 Brand Equity 14

2.5 Sources of Brand Equity 16

2.6 Brand Equity Models 18

2.6.1 Aaker's Model 18

2.6.2 Keller's Customer-Based Brand Equity (CBBE) Model 23

2.7 Similarities and differences between Aaker (1991a; 1991b) and Keller (1993;1998) Brand Equity models 24

2.8 Brand Equity valuations 25

2.8.1 Interbrand brand valuations 27

2.8.2 Young and Rubicam Brand Asset Valuator (Y&R BAV) 27

2.9 Brand Equity measurement 28

2.10 Brand equity in the public sector 29

2.11 Conclusion of literature review 32

2.11.1 Research Proposition 1 33

2.11.2 Research Proposition 2 33

2.11.3 Research Proposition 3 33

CHAPTER 3. RESEARCH METHODOLOGY 35

3.1 Research Approach 35

3.2 Population and Sample 36

3.2.1 Population 36

3.2.2 Sample 36

3.3 Procedure for Data Collection 37

3.4 Research Instrument 37

3.5 Data analysis and interpretation 38

3.6 External validity 38

3.7 Internal validity 38

3.8 Reliability Analysis 39

CHAPTER 4. PRESENTATION OF RESULTS 41

4.1 Introduction 41

4.2 Demographics 41

4.2.1 Gender 41

4.2.2 Age 42
4.2.3 Province of residence 43
4.2.4 Employment position 44
4.2.5 Involvement with REIPPP 45
4.3 Brand Determinants 51
4.3.1 Brand Association 51
4.3.2 Brand Awareness 52
4.3.3 Brand Loyalty 54
4.3.4 Perceived Quality 55
4.4 Correlation Analysis 58
CHAPTER 5. DISCUSSION OF THE RESULTS 61
5.1 Introduction 61
5.2 Public Sector Marketing 61
5.3 Demographics 62
5.4 Brand Awareness 62
5.5 Brand Association 63
5.6 Brand Loyalty 63
5.7 Perceived Quality 64
5.8 Conclusion 64
CHAPTER 6. CONCLUSION AND RECOMMENDATIONS 65
6.1 Introduction 65
6.2 Responses to the Propositions 65
6.2.1 Responses to Proposition 1 65
6.2.2 Responses to Proposition 2 66
6.2.3 Responses to Proposition 3 66
6.3 Recommendations and managerial implications 68
6.3.1 Recommendation 1: Increase customer awareness 68

6.3.2 Recommendation 2: Enhance perceived benefit by maximising the brand story development. 69

6.3.3 Recommendation 3: Adoption of brand orientation towards creating long term shareholder value 69

6.4 Suggestions for further research 70

6.5 Conclusion 71

REFERENCES 72

APPENDIX A: SUMMARY OF BRAND EQUITY STUDIES 89

APPENDIX B: RESULTS TABLES 92

APPENDIX C: QUESTIONNAIRE 98

LIST OF TABLES

Table 1: Definition of terms used 8

Table 2: Summary of Research propositions 33

Table 3: Cronbach alpha values 40

Table 5: Gender distribution 41

Table 6 Age distribution 42

Table 7: Province of residence 43

Table 8: Employment position 44

Table 9: Duration involved with REIPPP 45

Table 10: Capacity involved with REIPPP 45

Table 11: Number of transactions 46

Table 12: Number of employees 48

Table 13: Presence in SA and other African countries 49

Table 14: Presence in SA and other International countries 49

Table 15 Potential to be launched internationally 50

Table 16: Likert scale: Brand Association 51

Table 17: Mean and standard deviation: Brand Association 52

Table 18: Mean and standard deviation: Brand Awareness 52

Table 19: Likert scale: Brand Loyalty 54

Table 20: Mean and standard deviation: Brand Loyalty 54

Table 21: Likert scale: Perceived Quality 56

Table 22: Mean and standard deviation: Perceived Quality 57

Table 23: Correlation Analysis 59

LIST OF FIGURES

Figure 1: Aaker‘s Brand Equity Model (1991a:1996).....19

Figure 2: Keller‘s Brand Equity Model (1998) 24

Figure 3: Gender distribution.....41

Figure 4: Age distribution.....42

Figure 5: Province of residence 43

Figure 6: Employment position 45

CHAPTER 1. INTRODUCTION

1.1 Purpose of the study

This research examines the applicability of the Brand Equity framework developed by (Aaker 1991a; 1991b) in the context of a public sector renewable energy programme in South Africa. Public sector brands can be found in every country, and public sector institutions have relationships with individual customers, businesses, other countries and governments, and thus they all have brand images that need to be built and maintained (Temporal, 2015). Failure to undertake branding activity may well lead to negative perceptions and lesser achievement of national objectives. Abratt and Bick (2003) state that the development of a successful brand depends on customers' experiences over time, and their perceptions of the marketing activities of the firm. Bick (2009) further states that it is important to understand the concept of brand equity and how marketers can build the value of the brand.

This study adopts the theoretical model developed by (Aaker 1991a; 1991b), as it is commonly cited and has been the basis of several empirical studies (Diniso, 2017; Balaji, 2011).

This research report investigates, from a brand equity and marketing perspective, the experiences of customers with South Africa's Renewable Energy Independent Power Producers Programme since its launch ten years ago. The study also explores the customers' perceptions of the sources of brand equity for the same programme. Further, the study demonstrates the extent to which (Aaker's 1991; 1996) brand equity model has applicability in a government or public sector marketing programme. Lastly, the research report identifies the core sources of brand equity in the REIPPP and other insights that can guide future brand-building investments in a public sector marketing related initiative.

The rationale for this research report is that, in order to determine the value and success of a government initiative, it is important to know the sources and core components of that brand success from a value creation perspective, in order to exploit its brand strength (Rajendra, 1991). According to various energy and marketing specialists, there is evidence that South Africa's first renewable energy programme provided significant value to both the Department of Energy (the organisation) and the customer (South African

population) (Anderson, 2015; Pieters et al., 2014). Research evidence suggests that price premiums and the effectiveness of the marketing activities for the REIPPP have been enhanced (Eberhard, 2015). As a consequence, the Department of Energy is currently exploring a product line extension for the development of a similar energy programme for the gas sector, namely the Independent Power Producer (IPP) Gas Programme.

During the launch of the REIPPP, marketing costs were significantly reduced due to the high levels of brand awareness and the perceived product benefit of REIPPP (Botha, 2016). The manner in which the interpretation of information was observed and the levels of confidence among clients, investors, and shareholders also demonstrated the satisfaction and confidence in REIPPP (Botha, 2016). This implies that the South African renewable energy programme has been instrumental in effectively boosting energy supply and has been perceived as a value creating mechanism (Anderson, 2015). Biewald (2013) has further stated the renewable energy market in South Africa is one of the megatrends in Africa due to the increasing global demand for energy as a result of economic growth in the African emerging markets. Therefore, renewable energy technologies become more and more important both in an industrialized and emerging market context.

Based on the (Aaker 1991a; 1991b) model, this research assesses the applicability of the four dimensions of brand equity, namely, *brand awareness*, *brand loyalty*, *perceived quality* and *brand associations*. Using this approach, the research report determines the most meaningful and significant dimension(s) as they apply to a government or private-public partnership programme. This is significant because the research report provides guidelines to marketing practitioners in the government and private-public partnerships on the allocation of marketing resources and investments for brand building initiatives.

Oliveira and Caetano (2017) argue that sources of brand equity are diverse and the diversity is cumulative when the sources are analysed in different sectors and economic contexts. Akinci (2009) concurs when he states that there are different approaches to the concept of brand equity depending on the actors, measures, and the final purpose of how brand equity is used. Gill and Dawra (2010) have stated that Aaker's (1991a; 1991b) sources of brand equity should be applicable to different markets and products.

1.2 Context of the study

(Chattopadhyay et al., 2009) argue that it is difficult to understand brand equity without carefully examining its sources, i.e., the factors that contribute to the overall perception of brand equity in a customer's mind. This is echoed by Hanaysha et al. (2013), who stated that multiple studies in the past have been interested in discovering the influences, sources and determinants of brand equity. Hanaysha et al. (2013) further commented that in recent years, much of the research on brand equity has focused on finding the sources of brand equity and examining the applicability, relevance and hierarchical interrelationships amongst the sources of brand equity. Understanding the sources of brand equity will guide marketing practitioners as to where and how to direct marketing investments, which strengths to focus on, and which weaknesses to consider (Gartner, 2020). Consideration is also given to Berry et al. (1988), whose work shows that having positive brand equity provides value to customers and promotes employee satisfaction and confidence in their products, which may result in accelerated market awareness and acceptance. REIPPP should be managed as a long-term government asset, therefore, performance measures and a relevant brand equity model and framework should be considered (Wood, 2000).

Rust et al. (2000, 2004) defines brand equity as the customer's subjective and intangible assessment of the brand, above and beyond its objectively perceived benefit. In considering the definition by Rust et al. (2000, 2004), there is empirical research evidence that shows that South Africa's renewable energy programme is one of the most successful government-initiated energy programmes (Botha, 2016; Andersen, 2015). According to Eberhard (2015), the main stakeholders involved have experienced positive associations with REIPPP based on the perceived benefit and what they have learned, felt, seen and heard about the REIPPP brand. From the perspective of a marketer in the public sector, these positive market sentiments point towards positive brand equity which may be as a result of awareness, perceived benefit, brand associations, brand loyalty and other priority assets (Aaker, 1991a; 1991b).

In line with the statement that this research report is adopted from Aaker's (1991a; 1991b) theoretical framework, this idea is also inspired by Balaji (2011) and Diniso (2017), who have both acknowledged that Aaker's model is used and adopted by most researchers because it acknowledges that "a brand can create

value for the investor, the manufacturer and other role players only if there is value for the consumer", (Balaji, 2011, p 8). Appendix A is provided to demonstrate that the majority of brand equity studies conducted are adapted from the Aaker (1991a; 1991b) and Keller (1998) frameworks. According to Diniso (2017), these studies were conducted in different countries and applied in diverse industries and product categories. Diniso (2017) concluded his research by stating that Aaker's (1991; 1996) model offers the most practical approach to determining the sources and value of brand equity across a myriad of industries.

1.3 Problem statement

1.3.1 Main problem

Assessing the sources of brand equity or "what is in people's heads about the brand" (Ambler, 2002, p. 46), in the public sector is not a common area of academic research. Consequently, the research problem is to test the applicability of Aaker's (1991a; 1991b) Brand Equity model in the public sector, specifically in the Renewable Energy Independent Power Producers Programme, REIPPP. This is in response to Keller (1998) who has stated that for brand equity to provide strategic inputs and aid in marketing decisions, it is important to recognize the underlying sources and the consequences of brand equity.

As the purpose of government is to produce, deliver and allocate essential public goods and services, Serrat (2010) suggests that government should consider approaching their country's programmes and campaigns as value-creating strategic marketing assets.

Marketing scholars have focused their brand equity research objectives on various perspectives in the consumer market including brand equity conceptualisation and measurements (Chieng & Goi, 2011; Lee & Leh, 2011). King, et al. (2010) investigated the antecedents of brand equity, while Balaji (2011) examined the hierarchical interrelationships among brand equity dimensions in the consumer market.

The studies highlighted above provide a theoretical underpinning for this study, which examines the sources of brand equity in a government private-public partnership programme. Understanding and gaining knowledge on the sources of brand equity in the public sector can facilitate the introduction and the adoption of government programmes as national brand assets, whilst simultaneously building shareholder value. This

is due to the fact that an understanding of the sources of brand equity offer managers valuable insights into how the brands endow value to the consumers and the firm (Balaji, 2011).

1.3.2 Research Questions

1.3.2.1 RQ1: What are the sources and determinants of brand equity in the REIPPP?

Brand equity, as a strategic marketing concept, has been widely examined (Muqaddas & Ahmad, 2016; Aaker, 1991a; 1991b; Keller, 1998; Collins, 1995). Muqaddas and Ahmad (2016) have empirically tested brand equity as a measure to calculate the performance of a brand. However, while models developed by Aaker (1991a; 1991b) and Keller (1998) provide various sources of brand equity, empirical research as to which sources of brand equity best influence and are applicable in the public sector has not yet been fully explored. Marketing scholar, Serrat (2010) argues that the public sector represents a different context than the private sector, the literature review shows that the sources of brand equity from a government or public sector programme perspective have also received little attention (Collins, 1995).

1.3.2.2 RQ2: What is the relative importance of the sources of brand equity in the public sector?

Public sector organisations play an important role in driving economic growth and prosperity. The sources of brand equity are therefore integrated in the public sector context. Temporal (2015) has stated that it is possible to apply powerful private sector branding equity strategies to the public sector from government programs to non-profit organisations to global NGOs.

1.3.2.3 RQ3: To what extent can the Aaker (1991a; 1991b) brand equity model be applied or adopted in the public sector

According to Diniso (2017), Aaker's (1991a; 1991b) brand equity model offers the most practical approach to determining the sources and value of brand equity across a myriad of industries. Balaji (2011) and Diniso (2017) have also acknowledged that Aaker's model is used and adopted by most researchers because it acknowledges that "a brand can create value for the investor, the manufacturer and other role players only if there is value for the consumer" (Balaji, 2011 p 8). According to Diniso (2017), prior studies on the

sources of brand equity were conducted in different countries and applied in diverse industries and product categories.

1.3.3 Significance of the study

Governments from across the globe have intensified their efforts to grow their economies by attracting foreign direct investments. However, such efforts are accompanied by intensive external competition (Temporal, 2015). There is also an increased interest of public sector organisations in using corporate branding principles to implement successful branding in the public sector (Leijerholt et al., 2018). The role of marketers across both public and private firms is therefore to build and maintain strong brands as part of creating shareholder value. In order to build strong brands, it is important to know the sources and determinants of brand strength and success. For those involved in public sector marketing, the impact of the various sources of brand equity guides how and where to focus marketing efforts (Mourad et al, 2011).

The strength of the REIPPP brand can be determined by analysing its brand equity and the various sources that have a considerable influence over it (Claudiu-Catalin & Dorian-Laurentiu, 2012). This is consistent with Serrat (2010), who said that marketers in the public sector are now more than ever able to utilise classic marketing techniques and concepts to improve the performance of government initiatives and demonstrate a favourable return on the resources with which they are endowed. In the private sector marketing context, this may be explained as the drive to grow market share and company performance in order to attract new customers. Similarly, the public sector can leverage marketing techniques to launch initiatives and programmes that spur investor interest and add value to public sector brands.

Owing to the differences between the public and private sector, there is a need to adopt brand equity principles in the public sector. In addition to the fact that public sector managers are challenged to do more with less, this research study is directed towards supporting the proposal made by the Marketing Science Institute research priorities (MSI, 2012). The proposal states that brand equity assessment is an important research agenda item and that it should be prioritised to at least attain the following marketing objectives (Plank & Washburn, 2015):

1. to guide marketing strategies and tactical decisions
2. to assess the extendibility of a brand
3. to evaluate the effectiveness of marketing decisions
4. to track the brand health in comparison over time
5. to assign a financial value to the brand in balance sheets and other financial transactions.

1.4 Delimitations of the study

Information and literature review on the sources of brand equity from a public sector perspective is very limited. As such, conclusions reached may be that a consumer-based brand equity model may not be applicable in a public sector context as it was developed by Keller (1998) and Aaker (1991a; 1991b) for the consumer market. This study is for the REIPP Programme which is specific to the South African renewable energy context and is limited to the study of the perceptions and the customer experiences over time. There is no financial analysis undertaken in this study. Furthermore, the views of brand equity are not usually associated with government programmes, as such, questions may be posed as to whether REIPPP is a brand or not and whether the REIPPP offers sufficient insights in applying and linking the brand equity constructs in a public sector setting.

1.5 Assumptions

The following assumptions were made regarding the research;

1. All respondents were involved and knowledgeable about REIPPP.
2. All respondents were knowledgeable about what a brand is and how it is built.

1.6 Definition of terms

One of the critical initial steps in research is to operationalise key words by defining and clarifying the scope of their application to the study (Goertz, 2006). The following list of definitions may have debatable definitions and are the subject of some academic debate. This is specifically with reference to the definitions

for brand management, brand valuation and other brand-related definitions. The definitions are provided here for explanation purposes and will be discussed in greater depth in the literature review section.

Table 1: Definition of terms used

TERM	**DEFINITION**
REIPPP	Renewable Energy Independent Power Producer's Programme
IPP	Independent Power Producers
DOE	Department of Energy
Eskom	Energy utility company in South Africa
BEE	Black Economic Empowerment
Brand	A brand differentiates products and/or services of a company from competitors. A brand takes the form of a name, design, symbol or a mixture of these elements (Kotler, 2015).
Brand Management	The marketing management process by which brands are developed in order that they are easily identified and are able to differentiate goods and services from those of the competition (Kotler & Keller, 2009).
Brand Equity	Aaker et al. (2013) define brand equity as the intangible value of the brand name. They posit that the value of the brand name accrues to the company as a result of its successful efforts in establishing a strong brand.

TERM	DEFINITION
Brand Valuation	Abratt and Bick (2003) state that brand valuation is the process by which the value of a brand is quantified by assigning a price to the intangible asset.
Brand Performance	This is typically a difficult construct to measure based on a clear understanding of a brand's strengths and weaknesses, but a critical construct to grasp considering that strong brands are clearly enormous financial assets. Historically, brand performance measures have focused on calculating product market shares and the effectiveness of marketing campaigns (Bick, 2007).
Brand Loyalty	The positive effect between a customer and a brand often culminates in actions such as repeat purchases, word of mouth references and influencing others to support the brand.
Brand Awareness	Keller (1998) defines brand awareness as the customers' ability to recall and recognise the brand as reflected by their ability to identify the brand under different conditions and to link the brand name, logo, symbol to certain associations in memory. A high level of brand awareness leads to strong, salient and favourable and unique associations (Biel, 1993; Keller 2013)
Perceived quality	It is a subjective view of the customer's judgement about the superiority or excellence of a product based on product performance and how reliably the product meets the customer's requirements.

CHAPTER 2. LITERATURE REVIEW

2.1 Background to the Renewable Energy Independent Power Producers Programme (REIPPP) in South Africa

In 2011, there was growing interest in South Africa's renewable energy sector. This was reflected in the proliferation of conferences, articles and press attention on South Africa's Renewable Energy Independent Power Producer's Programme, REIPPP. According to Thompson (2019), South Africa's REIPPP programme has been a catalyst in the creation of the renewable energy market in South Africa. Thompson (2019) adds that a major shift in the energy market has been as a result of product, place, price and promotional activities which have been advanced and have resulted in large numbers of energy transactions being generated and reaching financial closure in a relatively short time frame. The World Bank defined REIPPP as a competitive renewable energy programme that was designed to facilitate private sector investment into renewable energy generation in South Africa (Eberhard, 2019). REIPPP is a government initiative that allows renewable energy developers to produce and supply electricity at lower prices, on time, on budget and to build stronger communities by addressing poverty, inequality, unemployment in addition to creating opportunities for the youth (Martin, 2017).

REIPPP was launched with the view to add value to South Africa's energy generation capacity and to fulfil future energy demand requirements. Pieters et al. (2014) have stated that REIPPP is a well thought out and highly successful programme, although some issues are still being addressed. South Africa experienced low electricity reserve margins and this was inconsistent with the projected electrical load growth over the next fifteen to twenty years (Pegels, 2010). To help address the problem, the Department of Energy (DOE), with the assistance of the National Treasury implemented the REIPPP with the view to accelerate the implementation of renewable energy generation with the involvement of the private sector. By 2014, investment into renewables in South Africa accounted for 84% of all foreign direct investments, a total sum of just under R200 billion. By 2017, 102 projects have been procured; substantial jobs for South African citizens had been created, socio-economic development initiatives had been initiated in local communities and a green industry had started to develop to the point that some manufacturers became exporters of

renewable energy plant components. Technicians were trained at global standards ensuring that young graduates can service both the domestic and international markets (Martin, 2017).

This outcome led to the de-monopolisation of the generation of electricity from Eskom and created a new private sector-led energy generation programme. Hence, opening the energy generation market to new and private sector players. According to Pieters (2014), Eskom, South Africa's main electricity utility was unable to meet capital requirements as a result of low tariff constraints which was inconsistent with nominal electricity prices. These supply/demand limitations restricted the creation of new energy generation capacity by Eskom as outlined in South Africa's Integrated Resource Plan.

The above statements consist of Baack and Clow's (2005) definition of brand equity. They considered brand equity as a set of characteristics that make a brand unique in the market place. They added that brand equity allows the company to charge a higher price and retain a greater market share than would be possible for an unbranded product. Anderson (2015) reports that many countries have delved into the renewable energy industry, producing countless new companies, ideas and creative solutions. In agreement with Anderson (2015), the REIPPP is being explored in other emerging markets due to its increasing perceived benefits (Eberhard, 2015). Notwithstanding the fact that REIPPP does not possess the traditional marketing elements of a brand, such as a logo, symbol or design, the product, price, promotion, place, value etc., awareness and acceptance of REIPPP as a successful government energy programme is undisputed (Eberhard, 2015; Pieters et al., 2014). The positive association of the REIPPP name and concept in relation to the target market was effectively established. Once the target market was familiarised with REIPPP due to high levels of awareness as a result of the plethora of existing literature on renewable energy programmes, news coverage, conferences and other news articles, the target market did not voluntarily accept the alternative or substitute energy brands thereby commanding a price premium and future brand extensions (gas independent power producers' programme). In 2019, the internationally recognised Project Finance International (PFI) awarded South Africa's renewable energy programme (REIPPP) the prestigious programme of the year award. This award is conferred through a high-level international voting mechanism. An annual survey was undertaken in 2019 across industry experts who submit nominations for award-

winning project finance transactions. Eddie O'Connor, Chief Executive of Mainstream Renewable Power, said, “the South African government has shown tremendous vision and foresight in creating this new and sustainable industry for South Africa, firmly placing it on the world map for renewable energy generation” (Anthony, 2018, p. 36).

Notwithstanding some of the negative media reports on REIPPP pertaining to other social and political issues, upon observing market data, it is evident that REIPPP is a major economic contributor to the South African economy and the transition to cleaner energy and other climate change initiatives (Anthony, 2018).

In reference to the definition of brand equity by Keller (2008), this research report sought to understand the customers’ experiences with the REIPPP over time and what their perceptions of the marketing activity of REIPPP were. Similarly, this research report sought to understand what was in the mind of the target market about REIPPP as a brand (Ambler, 2002). Notwithstanding the fact that a plethora of marketing literature has investigated the construct of brand equity, very little research is available on the applicability of brand equity in the South African Renewable Energy sector.

Papapetrou (2014) reports that South Africa’s REIPPP surprised the international renewable energy market with its unprecedented performance, scale, pace and quality within a short space of time. World Wild Fund (WWF) have conducted market research which has provided market evidence to demonstrates that REIPPP is largely successful. This view is consistent amongst the renewable energy target market through conferences and in the media (based on discussions with various target markets including financiers, developers, sponsors and government representatives). REIPPP is easily recognised and recalled by the target market and has positive associations. The aforementioned sentiments are consistent with comments made by Cerri (2012), who said that positive brand equity occurs the target market is familiar with the brand and has some strong, positive and unique links about the brand in memory. Anderson (2015) states that ever since South Africa implemented REIPPP, there have been a couple of countries like Zimbabwe, Zambia and even Brazil who have taken a copy of the REIPPP model and are currently implementing the key aspects in their countries. Participants in the REIPPP programme had the willingness to participate in the subsequent four bidding processes of the REIPPP Programme. There were significant reasons to buy

into the REIPPP programme because of the backing and brand association with the South African Government and other associations held with the National Energy Regulator and the local and international commercial banks. These brand associations have provided a significant competitive advantage for the REIPPP.

2.2 Definition of a Brand

Aaker (1991a; 1991b) defines a brand as having a distinguishing name and/or symbol (such as a logo, trademark, or package design). Aaker (1996) adds that branding is intended to identify the goods or services of either one seller or a group of sellers and to differentiate those goods or services from those of competitors. A brand signals to the customer the source of the product and protects both the customer and the producer from competitors who would attempt to provide products that appear to be identical. Brands have the power to affect the size and quantum of future cashflows (Engel 2012). Therefore, branding provides an alternative basis for differentiation (Aaker, 1991a; 1991b). According to Balaji (2011), a brand plays a key role in engaging the consumer and the manufacturer in a long-term consumer-brand relationship. O' Malley (1991) and Berry et al. (1998) have stated that a successful brand promises and delivers value to customers whilst simultaneously promoting employee satisfaction and confidence in its products and services. O'Malley (1991) and Berry et al. (1988) further stated that a successful brand results in market awareness and acceptance. Keller (2002) makes a distinction between the 'small – b (brand)' which is a combination of brand elements such as the name, term, sign and other components to identify and differentiate, and the 'big -B (Brand)' which includes the awareness, reputation and associations that are created in the marketplace. Mottram (1998) commented that brands tend to be associated with products but there has been a refocus on corporate brands. Corporate brands are important as, unlike the consumer market it will be difficult to brand every item in the wide range of products and services, therefore the corporate name tends to be the brand (Hague & Jackson, 1994).

2.3 Brand Management

Brand management oversees elements such as brand name, sign, brand identity, brand awareness, reputation and associations that are created in the marketplace (Keller, 2003). According to Muqaddas and Ahmad (2016), the goal of brand management is to distinguish products and services from competitors. A brand is a key business asset, and it is a complex construct with multiple attributes which all play a different role for the company, industry and the consumer (Shariq, 2018). Aaker (1996) argues that strong brands help firms establish an identity in the marketplace and reduce vulnerability to competitive forces. When Brand Management is done correctly, this can lead to higher margins, greater intermediary co-operation and support. The management of a firm's brand is therefore critical to the establishment of long-term growth and sustainability. A critical branding concept is that of brand equity. Given its importance in this research report, the following section reviews prior research studies on brand equity.

2.4 Brand Equity

According to Zeithaml et al. (2001), brand equity refers to the intangible subjective assessment of what draws customers to a firm. Brand-equity is a value adding marketing concept and it promotes economic value creation. Organisations with positive brand equity enjoy high-profit margins and there is evidence of efficiency and effectiveness in their marketing programmes. Yildiz and Metin Camgoz (2019) states that firms with high brand equity experience lower volatility during market fluctuations. As such, Yildiz and Metin Camgoz (2019) believes that enhancing the firm's brand equity is an important tool for firms in reducing systemic risk. Additionally, organisations with positive brand equity are not affected by market fluctuations and are typically associated with premium prices which contribute to increased margins.

Positive brand equity typically boosts organisational performance as a result of a favourable response from the way the product is marketed. The basic premise of brand equity is that the power of the brand lies in what customers have learned, felt, seen and heard about the brand over time i.e., the power of the brand lies in the minds of the customers (Boman et al., 2019). Brand equity is all about the value created from a product or service. It does not rely solely on any single source, but rather on several sources all pointing in a common direction – value creation (Boman et al., 2019). According to Tiwari (2010), during the past

fifteen years, brand equity has been a priority topic for both practitioners and academics. Marketing expert and scholar, Aaker (2017), defines brand equity as the intangible value of having a recognised brand. Aaker (2017) states that the idea of brand equity is based on the idea that firmly established and reputable brands are more successful. Hanaysha and Ghani (2013) state that brand equity plays an important role in brand success and in creating a sustainable competitive advantage. This statement is consistent with Sze and Hamid's (2012) views, who theorise that brand equity is a strategic marketing tool for business to gain sustainable competitive advantage. Bick (2009) promoted the concept of driving long term shareholder value by leveraging off Brand Equity. This according to Bick (2009) will demonstrate accountability in how marketing investments are allocated. Kotler (2000) defines brand equity as the value of the brand, based on the extent to which it has high brand loyalty, brand awareness, perceived quality, strong brand associations, and other assets such as patents, trademarks and channel relationships. Kotler (2000) and Lassar et al. (1995) attest to the fact that brand equity is an intangible asset that has psychological value to the customer and financial value to a firm. Keller (2008) states that brand equity depends on the customer's brand experiences over time and their perceptions of the marketing activity of the firm. This is in line with Ambler (2002), who defines brand equity as what is in people's minds about the brand. Rust et al. (2000) purport that brand equity refers to the customers' experiences and opinion of the brand that has been shaped by marketing and mass media. According to Aaker et al. (2013), brand equity is the market power, economic growth and financial value inherent in the goodwill and reputation that a well-established brand name has built over a period of time. Kotler and Keller (2009), on the other hand, define brand equity as the added value endowed to products and services. This value may be reflected in how customers think, feel, and act in respect of the brand, as well as how prices, market share and profitability are impacted as a result of the inherent value (brand equity). Brand equity is achieved when customers respond favourably to a product or service.

Feldwick (1996a; 1996b) defines brand equity as the intangible power which consumers attach to a brand, as well as the intangible affiliations and beliefs which customers hold about the brand. The drivers and sources of such a favourable response are often industry-specific and are based on product price and quality,

advertising and promotion (awareness), associations and customer satisfaction (customer loyalty). Thus, brand equity is a market-based intangible asset that can be leveraged to improve the performance of the organisation (Bick, 2007).

The remaining section of the literature review focuses on the sources, components and the underlying causes of brand equity from various perspectives, including customer perspectives, product and services-based perspectives. According to Hanayasha and Ghani (2013), there has been much exploration on the antecedents, components and sources of brand equity since the early 2000s, and various issues relevant to brand equity in different contexts have been studied. Yoo et al. (2001) state that understanding the dimensions of brand equity and investing in growing them to create shareholder value will increase a product's competitiveness and will drive brand wealth.

Understanding the sources of brand equity is important in building and managing a successful brand and developing a compelling competitive advantage (Hanayasha et al., 2013). Langner et al. (2006) recommend that in order to successfully determine the sources of brand equity including brand awareness, brand image, perceived quality, brand associations, brand loyalty and other sources of competitive advantage, all the sources should be assessed holistically with other brand relationship factors, such as brand trust, brand satisfaction and brand attachment. This is particularly important in this study because the customers and other role players have developed a positive attitude toward REIPPP due to the confidence the market has in REIPPP.

2.5 Sources of Brand Equity

Brand Equity is achieved through how a product is marketed and communicated (Bick, 2007). There are many factors that influence the strength of a particular product or brand. However, in order to understand these factors, one is able to think and apply effective strategies to ensure successful brand development. There a is general consensus that brand equity as a marketing dimension is multi-faceted and complex (Bick, 2009). It is also generally accepted that brand equity measurement should be undertaken within different sectors and economic contexts (Oliveira & Caetano, 2017). Just as customer decision making can

alter based on the situation and occasion, it is accepted that the sources, determinants and drivers of brand equity will differ. For example, in a study conducted by Chattopadhaya et al. (2009), it was determined that the marketing mix elements are a significant source of brand equity in India's car manufacturing industry, whereas, in France, Valette-Florence (2011) found that brand personality and sales promotions are significant sources of brand equity in the consumables industry in France. A study by Moloko (2014) found that in addition to macroeconomic factors, corporate structure and strategy were the major sources of brand equity in the telecommunications industry in South Africa. Additionally, Kim et al. (2008) found that customer relationships are an important source of brand equity in the hospitality sector. Balaji (2011) found that there exists a hierarchical relationship between brand equity sources and also found that perceived quality was the most significant variable in building equity in the services market. Therefore, in line with previous research studies and research frameworks, context is key in determining the sources of brand equity.

The sources of brand equity are varied and multi-faceted, depending on the product and the context. Certain studies have explored other sources of brand equity such as brand trust (Delgago-Ballester & Munuera-Alema, 2005), country of origin (Yasin et al., 2007; Kim and Ko., 2012), customer satisfaction (Pappu et al., 2005), and service quality (Vatjanasaregagul & Wang, 2007; Ha et al., 2009). Similarly, Oliverira-Castro et al. (2008) studied issues of brand attitude and brand image as influential sources of brand equity. Brand Equity measurement style and approaches, similarly, are varied and cut across various products and markets. Oliverira-Castro et al.'s (2008) study focused on service brands. From a public sector perspective, some scholars have proposed that marketing in the public sector should be more an operational rather than a strategic tool (Kearsey & Varey, 2010). This is because the context within which brand equity as part of a marketing management variable occurs differs substantially in the profit-orientated and privately-owned firms. Kearsey and Varey (2010) further comment that there exist elements of commercial marketing theory and practice which are useful at an operational level in the public sector. These views have been challenged by others who postulate that it should be sufficient to adapt the marketing concept in order to reflect the specific characteristics of public services (Butler & Collins, 2010; Laing, 2003). According to

Waerass and Solbakk (2009), marketing-like activities in the public sector tends to focus on the efforts of public organisations at promoting specific issues, such as health care (Scheaff, & Smith 2002), military service (Marshall & Fisher, 2005), government reforms, (Van De Walle, 2008), and urban plans (Ashworth & Voogd, 1990). Temporal (2015) believes that now, more than ever before, public sector organisations are heavily involved in the world of branding and this ideology is likely to increase in the future.

There are several components that together, make up and build brand equity. According to other literature sources, brand equity does not rely on any single source but rather on several sources all pointing in a common direction – economic value creation (Boman et al., 2019). Sources of brand equity can be divided into four major groups: brand loyalty, brand awareness, perceived quality and brand associations (Aaker, 1991a; 1991b).

2.6 Brand Equity Models

Diniso (2017) has commented that various models have been developed to explain the different sources of brand equity, however, the most commonly utilised models are Aaker's (1991a; 1991b) model and Keller's (1998) model.

2.6.1 Aaker's Model

Aaker's (1991a; 1991b) model is one of the most commonly cited brand equity models to the extent that further models developed in the early 2000s normally reference Aaker's (1991a; 1991b) model as a significant contributor to follow-up studies. Other models comprise at least one or two of Aaker's (1991a; 1991b) brand equity components. Aaker proposes that:

1. Brand equity consists of multiple dimensions
2. Brand equity creates value for both the customers and the firm
3. Value for the customers enhances value for the firm.

Aaker (1991a; 1991b) states that brand equity is a multidimensional concept. Aaker (1991a; 1991b) provides a set of assets that theorises as contributing to brand equity. These assets include brand loyalty,

brand awareness, perceived quality, brand associations and other proprietary assets. However, Gill and Dawra (2010) challenge this model on the basis of some unanswered questions, such as, which of these items should be combined to capture the highest level of brand equity and whether these items are exhaustive, reliable and valid. Cobb-Walgren et al. (1995) commented that evaluating the sources of brand equity from a consumer-based perspective is one of the most dominant perspectives and the one preferred by a majority of academics and practitioners in marketing. This is because if a brand has no meaning or value to the customer, it is ultimately meaningless to investors, manufacturers or retailers. According to Yoo (2001), Aaker's (1991a; 1991b) model of brand equity was a conceptual model, but later studies have empirically tested the model and have found it to explain most of the sources of brand equity. According to Gill and Dawra (2010), Aaker's (1991a; 1991b) model, while critical of it, is useful as it combines both market behaviour-related measures and perceptual measures as a framework to capture brand equity, as illustrated in figure 1. Sharma (2017) stated that Aaker's (1991a; 1991b) model is generally supported.

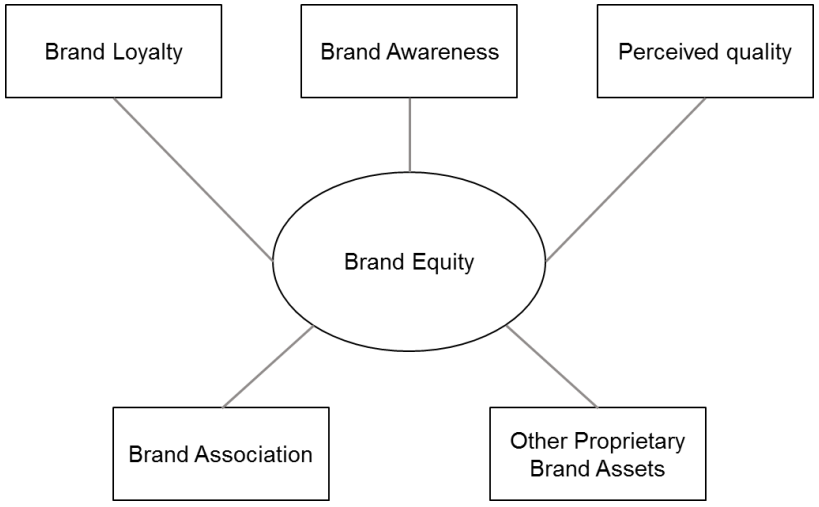


Figure 1: Aaker's Brand Equity Model (1991a:1996)

Source: Aaker (1991a: 1996)

2.6.1.1 Brand loyalty

Chattopadhaya et al. (2009) define brand loyalty as a deeply held commitment to rebuy a preferred product or service consistently in the future. Oliver (1997) has stated that brand loyalty occurs when a customer

consistently prefers a brand, despite the situational factors and competitor's marketing efforts. The indicators for brand loyalty include behaviours and attitudes which influence consumer preference and consumer choice (Javalgi & Moberg, 1997).

2.6.1.2 Brand Awareness

According to Keller (2008) brand awareness simply refers to whether your customers can recall or recognise a brand. It is an important component of brand equity as it plays an important role in customer decision making. Olivieria and Caetano (2017) and Rust et al. (2000) provide the following insights when determining the approaches for successful brand awareness:

1. The crucial facet to building brand equity lies with a successful integrated marketing communications strategy
2. The communications strategy must be cohesive and effective in influencing the customer in order to build brand equity
3. The ethical approach of the firm and the customer must coincide
4. The strategy and tactics of the company must be aligned in order for the brand to hold a strong, consistent position in the market.

According to Balmer et al. (2006), brand awareness is a fundamental trigger of brand equity. Aaker et al. (2013) state that brand awareness entails more than brand recognition and recall, it includes top of mind, brand dominance, brand knowledge and brand opinion. Brand awareness has a powerful effect on a purchasing decision as customers tend to buy a familiar product and well-known products rather than unfamiliar and unknown products. Chattopadhaya et al. (2009) define brand awareness as the customer having easy accessibility of the brand in their memory. Other synonyms associated with brand awareness terminology in marketing literature include brand saliency (Blackston, 1992), and brand presence and brand dominance (Dyson, Farr & Hollis, 1996).

2.6.1.3 Perceived quality

According to Chattopadhaya et al. (2009), perceived quality has been defined as a customer's subjective judgement about a product's overall excellence or superiority. It is well known that consumers typically rely on the opinions of other brand users to know about the brand features and hence develop their quality perceptions before making a final choice of the brand. In the case of REIPPP, the customers have relied extensively on media reports, expert opinions, thought leaders and analysts' reports to make an informed decision about REIPPP.

According to Asamoah (2014), branding is a significant indicator to the perceived quality of a brand and perceived quality enhances the competitiveness of an organisation. According to Sharma (2017), several researchers have examined the construct of Perceived quality. Sharma (2017) added that Perceived quality is a relative concept and is influenced by specific variables which include consumer's previous experience, education level, purchase purpose, time pressure, purchase situation and social background. The REIPPP has been positioned in the minds of the customers as a transparent and consultative government private-public partnership initiative or programme. It has been applauded for having standardised contracts and twenty-year guaranteed Power Purchase Agreements (PPAs). In the context of REIPPP, these key indicators have served to attract project developers and other role players to get involved in the REIPPP. Simultaneously, the aforementioned indicators have encouraged the development of renewable energy projects and aided in driving awareness and interest in the programme. According to Diniso (2017), perceived quality is regarded as an important precursor of brand satisfaction, and it leads to sustained involvement in the brand. In the context of the fast-moving consumer goods market, however, some of the determinants of perceived quality include indicators such as brand image, price, familiarity, package size, brand origin and self-image congruence (Yap Phui Wei & Yazdanifard, 2014). However, in the renewable energy sector, the indicators of perceived quality include the reduction of tariffs, the provincial and geographic spread of the different independent power products and technologies throughout the country, according to the relevant energy sources. For example, the main sources of solar energy are located in the Northern Cape where the solar radiation intensity is the highest. Similarly, wind independent power

products and technologies are located along the coastal regions of the Eastern and Western Cape due to the high wind weather patterns. Other indicators of perceived quality in the REIPPP include socio-economic development market outcomes. According to Yap Phui Wei and Yazdanifard (2014), communities, where the Independent Power Producers' plants are located, have significantly benefitted from positive market outcomes, such as education, skills development, health care, infrastructure and social housing improvements. Other indicators of perceived quality, according to Mott Macdonald, who are the technical advisors in the REIPPP, include the increasingly competitive tariffs offered to encourage and incentivise project developers, lenders and government to introduce innovative technologies and solutions; operational, market structure and supply chain arrangements; and lastly, the demonstratable determination to shift to greener energy generation technologies. In addition, Relancio et al. (2016) have suggested that the competitive landscape, market readiness and the manner in which projects were configured, underpin the positive response of the private sector. This in turn, translated into better tariffs and economic development outcomes being achieved in the REIPPP (Pieters, 2014).

2.6.1.4 Brand Association

Brand associations are multi-facetted, complicated and connected to one another and consist of multiple ideas, episodes, and facts that establish a solid network of brand knowledge. Associations are stronger when they are based on many experiences or exposures to communications. Chattopadhaya et al. (2009) report that brand associations which result in high brand awareness, are positively related to brand equity as they can be a signal of quality and commitment and lead to a favourable behaviour towards the brand.

Aaker (1991) and Keller (1998) describe brand associations as anything "linked" in memory to a brand. Associations are important informational nodes linked of a brand node in memory and contain the meaning of the brand for consumers. Associations may include physical features, benefits and other description features that influence what a target market thinks about a product or service (Keller, 1993). In the context of the REIPPP, WWF associates REIPPP with clean energy and climate-friendly benefits. Eberhard (2015) associates REIPPP with innovation, economic growth, and other benefits such as social upliftment and enterprise development.

2.6.1.5 Other Proprietary Assets

Other proprietary assets which have an impact on brand equity are guided by issues such as different sectors and economic contexts (Oliviera & Caetano 2017). For example, in the sport and entertainment context, there is empirical research which suggests that sponsorships of sporting and cultural events have a significant impact on brand equity. Other factors include marketing related activities, such as, customer experience, integrated marketing communications, digital strategy, brand personality, brand image, sales promotions and many other marketing-related activities. Oliviera and Caetano (2017) further state that empirical research studies have sought to verify factors, such as physical environment, physical characteristics and country of origin, as contributing to the building a competitive advantage which is classified as other proprietary assets.

2.6.2 Keller's Customer-Based Brand Equity (CBBE) Model

According to Keller (2013), customer brand equity occurs when the customer has high levels of association and familiarity with the brand and holds some strong, favourable, unique associations in memory. Keller (2013) defines brand equity as a sequential series or a branding ladder of those variables which cause customers to react more favourably to a product. The ethos of Keller's (2013) CBBE is that marketers play a critical role in shaping how customers think and feel about a brand. Serrat (2017) suggests that establishing an identity and creating the right type of experiences around the brand is the initial first step to influencing customers' positive thoughts, feelings, beliefs, opinions and perceptions about a brand. Keller's (1998) process model is typically illustrated in a sequential and unique chain of events. The model further proposes that there are four critical steps that sequentially need to be followed in order to drive brand equity. The first four steps are: developing brand identity through brand salience (when your brand matters and is relevant), brand performance and brand imagery, followed by brand responses (through assessing judgements and feelings. This is then followed by developing meaning which finally leads to the last step of brand resonance (when customers connect with brands on a deep level). These steps apply primarily in the consumer markets.

The premise is that the steps are contingent upon one another. Keller's (1998) model is typically applied alongside branding marketing activities which seek to develop brand identity, meaning and the desired response and relationship. This is because meaning cannot be established unless identity has been created. Responses cannot occur unless the right meaning has been developed and the relationships cannot be forged unless the proper responses have been elicited. The Keller (1998) model is further matched with brand activities which include awareness, setting up points of parity and points of differentiation in order to drive positive reactions and finally secure loyalty. Brand identity is typically located at the base of the pyramid and relationships are located as the pinnacle at the top of the pyramid. For Keller (2002), the sources of brand equity are reflected in the customer's perceptions, preferences and behaviour. According to Arora and Neha (2016), Keller is the main architect of the brand resonance model. Sharma (2017) has stated that Keller has played an integral role in the conceptualisation of brand awareness into brand recognition and brand recall constructs. An illustration of Keller's (1998) CBBE model is provided below in Figure 2:



Figure 2: Keller's Brand Equity Model (1998)

2.7 Similarities and differences between Aaker (1991a; 1991b) and Keller (1993;1998) Brand Equity models

There has been much discussion in various marketing literature regarding these two prominent brand equity models. Both models were defined for the consumer market with the view to "winning the heart and mind of consumers" (Claudiu-Catalin & Dorian-Laurentiu, 2012, p 255). However, over the years, marketing

researchers have sought to determine the applicability of both models in the Business to Business and industrial markets. Essentially, Aaker's (1991a; 1991b) model is depicted by at least four main components, while Keller's (1998) model focuses on customer-based brand equity (CBBE) and combines brand knowledge and brand recognition as the main components. Keller's (1993; 1998) framework also studies the impact of brand knowledge on how consumers respond to marketing programmes (Gill & Dawra 2010). The four main components of Aaker's (1991a; 1991b) model include brand awareness, brand loyalty, perceived quality and brand associations. According to Gill and Dawra (2010), Aaker's (1991a, 1991b) model combines both market-related behaviour measures and perceptual measures to provide a framework for brand equity.

Keller's (1998) model is based on the customer's knowledge of the brand and it is reflected in the customer's perceptions, preferences and behaviour. Both models are consistent in their valuation that brand equity has many advantages in terms of long-term revenues, customers' willingness to seek for themselves new channels of distribution, the ability to command higher prices and the effectiveness of marketing communications (Farjam, 2015).

The main difference between the two models is that they have been developed from two different perspectives. Aaker's (1991a,1996) model focuses on the benefits to the organisation. Keller's (1998) model focuses on consumer benefits (Bick 2007).

2.8 Brand Equity valuations

Brand Equity valuation is a technique used to justify and measure returns on brand investments (Temporal, 2015). The valuation technique assigns a monetary value or price to the brand. Romero (2015) argues that brand equity and customer equity are key factors in the valuation processes. This is consistent with Abratt and Bick (2003), who highlight various methods and processes which have been empirically tested to assign a monetary value to a brand. The various methods and processes highlighted by Abratt and Bick (2003) are commonly classified into five categories:

- Cost-Based approaches – the cost of replacing the brand is calculated based on how much has been spent on creating the brand.
- Market-based approaches – this approach provides estimates of how much the market will be willing to buy the brand if sold in the open market. Typically, a comparative analysis is conducted on the amounts paid for similar brands.
- Economic-use or income-based approaches – future net earnings are estimated and then discounted cash flow metrics are used to determine the value of the brand.
- Formulatory approaches are commonly referred to as commercial approaches, and they take into account brand, market and risk dynamics in their valuation's metrics.
- Special situation approaches – this approach is commonly applied in special situations such as liquidation of firms or special tax calculations.

However, according to Gartner (2020) marketing leadership council, brand valuation involves three basic steps: first, a financial forecast that projects the company's future cash flows; second, a "brand driver analysis" that determines the percentage of those cash flows attributable to the brand; third, a "brand risk analysis" that assesses a brand's performance relative to key competitors and applies a discount rate to future cash flows. The result is an estimated valuation of how much a brand is worth to the company. The benefits of this brand valuation lie mostly in its finance-oriented approach, emulating the way financial analysts value equities. The result is an analysis familiar to senior management and the financial community. The drawbacks are that the approach is dominantly focused on assumptions, including projected cash flows and risk analysis. Brand valuation is also very resource-intensive. This research report provides examples of two commonly used commercially structured valuation models, because REIPPP as a programme does not operate at a consumer level but at a business-to-business or government-to-government level.

2.8.1 Interbrand brand valuations

According to Abratt and Bick (2003), the Interbrand model utilises the formulary approach by forecasting profits and deducting capital charges (spending on advertising) in order to determine potential profitability. The brand value is determined by the income and other incremental earnings the brand is expected to generate in the future. Interbrand utilises a commercial brand valuation approach. The first step in the valuation process is to segment the market into homogenous groups. Thereafter a financial analysis is performed for each market segment. The financial analysis forecasts are estimated based on each market segment. This is followed by a competitive benchmarking process in order to determine the drivers of market demand. Finally, the brand value is calculated as a sum of the net present values of the forecasted brand earnings for each market segment, applying an appropriate discount rate (Lehman et al., 2008). This model excludes consumer mindset from its valuation methodology, and it also assumes that a trademark creates brand value.

2.8.2 Young and Rubicam Brand Asset Valuator (Y&R BAV)

The Y & R BAV was designed by Young and Rubicam, one of the leading advertising companies in the world (Claudiu-Catalin & Dorian-Laurentiu, 2012). The Y&R BAV provides a piece of solid incremental information to accounting measures in predicting and explaining share price performance and it can be combined with specific financial and accounting methods for measuring Return On Investments (ROI) of future marketing programs. The BAV tries to link customer behaviour with actual and future share price performance. This strategy is based on the belief that a strong brand contributes to both current and future share price performance. The Y&R BAV framework operates on the basis that differentiation and relevance account for 66% of the determinants of brand value, and esteem and brand knowledge accounts for only 33% of the determinants of brand equity in a private listed company. The Y&R BAV framework is consistent with Janoskova and Kliestikova (2018), who has stated that there is empirical research that confirms the strong positive linear statistical relationship between the value of the brand and revenue. Simon and Sullivan (1993) stated that brand equity increases the cash flow to the business and also helps in improving the brand earnings by commanding a price premium over its competitive brands. According

to Farjam (2015), the financial perspectives of brand equity are commonly utilised during periods of mergers, acquisitions or divestments in order to estimate a financial value for the brand.

2.9 Brand Equity measurement

Gill and Dawra (2010) concur that measuring brand equity is a challenge, and that measurement should be undertaken within the applicable constructs and within the different markets and products. Gill and Dawra (2010) further add that many researchers have carried out significant work in identifying the sources of brand equity with the view to capture and measure brand equity. Gill and Dawra (2010) assert that some researchers have used psychological and perceptual measures, whilst other researchers, such as Kamakura (1998) have used actual consumer purchase behaviour or market behaviour to ascertain brand equity. The literature review highlights that there are three dominant frameworks that help in brand equity measurement: Aaker's managerial framework, Keller's psychological memory-based framework and Erdem and Swait's information economics and signalling theory framework Sharma (2017). According to Claudiu-Catalin and Dorian-Laurentiu (2012), positive brand equity should evoke positive behavioural responses because of brand-related aspects, and brand equity should focus on the strength and intensity of behavioural responses triggered by consumers' brand experiences. The above statements are challenged by Haig (2015), who believes that the above measurement approaches are nebulous. Haig (2015) recommends that brand credibility is the most accurate measurement tool of brand equity because credibility addresses issues of trust and expertise.

Keller (2013) draws a distinction between direct and indirect brand measurement approaches. The direct approaches measure brand equity directly by assessing the impact of brand knowledge on consumer's response to marketing activities. The indirect approach attempts to assess the sources of brand equity in terms of brand recognition and brand knowledge (Huang, R., & Sarigöllü, E., 2014). asserts that, according to Keller and Lehman (2008), brand equity measures are generally classified into three subsets:

- customer mindset measures,
- brand performance measures, and

- shareholder value measures.

Customer mindset measures gauge customers' general attitude toward a brand and include two important components: brand awareness and brand association. Brand association refers to any brand knowledge relating to the brand in the customer's mind. This knowledge represents overall brand equity in the customer's mind. This measurement approach typically analysis aspects such as attitude, loyalty and marketing activities (Bick, 2009).

Brand performance measures relate specifically to brand market share, revenue price premiums, increased advertising elasticity and decreased sensitivity to competitors' prices. This measurement approach typically focuses on the product and the revenue earned (Bick, 2009). Oliveira-Castro et al. (2008) have stated that brand performance measurement approach varies across product categories.

Shareholder value measures typically include three basic measurement approaches which are commonly used in measuring shareholder value. These are Total Shareholder Return, Earnings per Share and the Market-to-Book ratio (De Mortanges and Van Riel, 2003). This measurement approach assesses financial market performance and elements of brand valuation. Wood (2000) has also referred to financial models and frameworks which measure the level of attachment between the customer and a brand. According to Doyle (2001), brands will fail to achieve their entire value-creating potential when brand managers pursue strategies that are not orientated towards maximising shareholder value.

2.10 Brand equity in the public sector

There has been a growing interest in brand equity orientation outside of the private sector (Gromark & Merlin, 2013). This is due to the fact that public sector organisations carry reputations in the public imagination (Teodoro & An, 2018) and due to the fact that the public sector spends considerable resources in advertising to promote their brands (Kosar, 2012). Considering the fact that the purpose of public sector organisations is to provide services of value to society at large, it is plausible that the brand equity principles may have relevance and applicability in public sector organisations (Gromark & Merlin, 2013).

Public sector organisations may enjoy positive brand equity that provides political leverage and facilitates effective management, or negative brand equity that weakens political leverage and frustrates administration (Teodoro & An, 2018). The decisions made by public sector organisations affect every aspect of our lives in many different ways (Kovash, et al., 2003). According to Leijerholt et al. (2018) there is limited understanding of the underlying conditions for successful brand equity in the public sector. This is due to the fact that concepts of brand equity such as profitability and equity are not commonly associated with public sector organisations.

However, there is a growing trend towards the marketisation of the public sector. Brand orientation, which Gromark and Merlin (2013) define as a deliberate approach to brand building where brand equity is created through interaction between internal and external stakeholders, where brand equity management is perceived as a core competence, and where brand building is intimately associated with organizational development and superior performance. This is due to increasing competition from the private sector and hence a need to build distinctive organizational brands in the public sector (Leijerholt, et al., 2018). Teodoro and An (2018) found that customer-based brand equity measurement is relevant in the public sector as it pertains to the measurement of consumers' awareness of and reactions to brand names and images.

Over the years many public organisations have attempted to apply brand equity principles to build strong brands (Leijerholt et al, 2018) and are becoming pro-active in their efforts to build and sustain strong brands (Celly & Knepper 2010; Hemsley-Brown et al. 2010; Waerass et al., 2009). Petruzzellis and Winer (2015) found that integrated corporate communications played a significant role in building brand equity in the public sector. Brand orientation is fast gaining support as a marketing principle in the public sector, although there is very limited theoretical and empirical research (Gromark & Merlin 2013). Faircloth (2005) embarked on an exploratory study to determine the marketing practices that could be used to influence public opinion, and therefore, to determine brand equity. Faircloth's (2005) study was based on the conceptualisation of Aaker (1991) and Keller (1993). This was in response to a finding by Interbrand Group which recognised that public sector organisations fail to utilise brand marketing practices (Faircloth 2005).

In the public sector context, brand equity approach includes involving stakeholders in co-creating brand equity (Juntunen et al., 2013). Additionally, there have been various initiatives launched in the public sector which seek to enhance awareness and increase support and loyalty among different stakeholders. These initiatives are consistent with the framework for developing brand equity in the private sector (Gromark & Merlin 2013), and hence there is a growing interest in applying brand equity principles in the public sector.

Brand equity principles may be useful in the public sector, however, they may need adjustments and modifications to fit public organisations, for example in the determination of the sources of brand equity, (Chapleo, 2015). Prior research in public sector marketing indicates that there is a broad variety of factors stated to influence brand equity. However, marketing researchers have identified inconsistent results on their significance. This may present an opportunity for further research to investigate the underlying reasons for the inconsistent brand equity sources in the public sector context.

Leitjerhold et al. (2017) conducted extensive literature review on brand equity in the public sector. According to Leijerholt et al. (2018), the sources of brand equity in the public sector is mainly determined by the outcomes of external branding activities. The outcomes of his research report indicate that there is no consensus on the most influential sources of brand equity in the public sector, since studies from various contexts of the public sector emphasize different factors.

This research report draws lessons from Mourad and Ahmed (2012) who conducted research on the sources of brand equity in the higher education sector. According to Leijerholt et al. (2018), the majority of empirical studies on branding in the public sector have focused on the higher education sector. Whilst others have focused on the political sector, health care, cultural and the non-profit sector. The research objectives of Mourad and Ahmed (2012) is consistent with this research report because the context is a public and private sector institution. Mourad et al. (2012) highlighted the fact that empirical research about brand equity in the higher education sector is very extensive due to the unique characteristics of the Higher Education Sector. Mourad and Ahmed (2012) found that brand image was a far more significant source of brand equity than brand awareness in the higher education sector.

Similarly, Murillo-Acuna and Oubina-Barbolla (2013) found that brand equity is important for any entity including non-profit organisations. In the non-profit sector, Murillo-Acuna and Oubina-Barbolla (2013) found that brand personality, brand image and brand awareness, brand loyalty and perceived quality played a significant role in developing brand equity in the non-profit sector. They also found that fundraising, volunteerism where the most significant sources of brand equity when they applied the model of Aaker (1991) and Faircloth (2005). Laidler-Kylander and Simonin (2009) found that consistency, focus, trust and partnership were significant sources of brand equity in the public and non-profit sector. Aurora and Neha (2016) surveyed approximately 120 respondents to explore the various sources of brand equity between public and private banks and found that there are no significant differences in the perceptions of customers. The reason behind the study found that customers choose their banks due to the advice of their parents, i.e., intergenerational influence plays a significant role in choosing either a public and private sector banks.

In general, considering the critical roles that external stakeholders play in the public sector, Leijerholt et al. (2018) have appealed to the marketing body of knowledge to further explore and identify the factors that affect stakeholders' relationships with the brands of public sector organisations.

2.11 Conclusion of literature review

The literature review indicates that the sources of brand equity are varied and multifaceted and that context, product sector is essential when assessing the sources of brand equity. However, the literature does suggest that it is not impossible to apply certain customer-based brand equity constructs in the public sector programme. This view is consistent with Tawari (2010) who summarises both Aaker (1991a; 1991b) and Keller's (1998) models. Tiwari (2010) summarises the majority of marketing literature on brand equity to theorise that Brand Equity is a set of perceptions, knowledge and behaviour on the part of customers that creates demand and/or a price premium for a branded product. The review of the literature has led to the development of the following research propositions.

2.11.1 Research Proposition 1

Based on Aaker's (1991a; 1991b) model the following are the sources and determinants that have a significant influence over the REIPPP brand:

- Awareness
- Perceived Benefit
- Brand Associations
- Brand Loyalty

2.11.2 Research Proposition 2

Understanding these core sources of brand equity in the public sector is important because marketers may start to create and sustain a competitive advantage for government programmes in the public sector.

2.11.3 Research Proposition 3

Aaker's (1991a; 1991b) brand equity model can be applied or adopted in the public sector.

Table 2: Summary of Research propositions

Research Proposition	**Description**
Research Proposition 1	Based on Aaker's (1991a; 1991b) model the following are the sources and determinants that have a significant influence over the REIPPP brand 1. Awareness 2. Perceived Benefit 3. Brand Associations 4. Loyalty
Research Proposition 2	Understanding these core sources of brand equity in the public sector is important because marketers may start to create and sustain a competitive advantage for government programmes in the public sector

Research Proposition	**Description**
Research Proposition 3	Aaker's (1991a; 1991b) brand equity model may be applied or adapted to the public sector

CHAPTER 3. RESEARCH METHODOLOGY

3.1 Research Approach

This chapter of the report outlines the methods followed in determining the answers to the research questions. This chapter provides information on the respondents including sampling techniques, procedures and equipment used in both data collection and data analysis. It also deals with research design and the description of instruments. The choice and implications of the research methods are explained with reasons for selecting them.

Hussey (1997) describes research as a process by which an enquiry is made and an investigation ensues. The authors elaborate that the research process is systematic and methodical and that it increases knowledge and eventually leads to self-improvement. Leedy and Ormrod (2005) emphasise that the research process increases our understanding of the phenomenon in which we are interested in. Yin (2003) suggests five strategies for undertaking a research report. These strategies include surveys, experiments, history, archival analysis and case study.

This study was quantitative in nature and was undertaken by means of an online survey using a self-administered structured questionnaire. Lehman et al. (2008) have stated that firms employ a wide variety of measures when seeking to understand how a brand is performing. Lehman et al. (2008) added that customer-based surveys often play a central role because data is captured in a reliable and valid way (Luna & Soifer, 2017). There exists a possibility that other information has been overlooked which could contribute different perspectives and other insights as to the applicability of brand equity and its constructs when assessed in a public sector programme. Hanaysha and Ghani (2013) have stated in their critical review of literature on brand equity that most of the previous research on the sources of brand equity has largely been quantitative in nature. Naidoo (2012) describes the quantitative approach as involving collecting numerical data and analysing it through the application of statistical tests.

3.2 Population and Sample

3.2.1 Population

The research population comprised of senior and experienced practitioners and professionals who have been extensively involved in REIPPP since its inception in 2010 when the renewable energy programme was launched in South Africa. The population sample included lawyers, consultants, funders, engineers, economists, sales executives, research and development practitioners, market analysts and energy sector analysts.

3.2.2 Sample

Keyton (2006) defines a sample size as a collection of objects, events and individuals that have a common attribute that is of interest to the researcher. The sample size was thirty-two experienced practitioners from the sales, marketing, strategy, product development, academia, legal and engineering firms who have been extensively involved in REIPPP since 2010. The sample size of the respondents was limited to thirty-two people and included only the main customers and roles players in the REIPPP on the understanding that it was this group of respondents who had identified REIPPP as a new market opportunity for their respective firms. The firms participating in the survey include law firms, engineering firms, consultancy firms, market researchers, government representatives, academia or energy sector analysts. The sample size is relatively small as compared to the size of the industry which has an approximate market capitalisation of two hundred billion Rand (R200 billion). The role between business development sales and marketing professionals in the renewable energy sector often overlaps. It is therefore possible that knowledgeable sales and business development professionals have been excluded from the questionnaire, compromising the quality of the responses and presenting limitations in relation to the insights offered.

The group of respondents exclude other important role players in the REIPPP, for example, procurement specialists, conference organisers, market analysts, technical teams, international funders, on the understanding that they are not familiar with the concept of brand equity in a strategic marketing context. This was a non-random sampling and was a purposive sample. This is because the population is known to the researcher through engagements held at events and conferences where REIPPP was discussed. The

sampling strategy was specific and targeted in line with the fact that the renewable energy industry is very niche and is still developing in South Africa.

3.3 Procedure for Data Collection

A survey approach was utilised to collect the views, experiences and perceptions which inform the important factors which contribute towards the development of brand equity for South Africa's Renewable Energy Independent Power Producers Programme. Brand equity instruments developed by Aaker (1996) and later developed by numerous researchers was adapted for the study. The survey was administered online through targeted emails sent to each respondent by the researcher. The email included a link that respondents could click to complete the self-administered questionnaire, which included 15 questions and required about 15-20 minutes to complete. Due to the targeted approach and the size of the sample, the risk of multiple responses by a single responded was eliminated.

3.4 Research Instrument

An example of the questionnaire is attached as Appendix C. The Questionnaire was offered in English. The first part of the questionnaire consisted of demographical questions to allow for the categorisation of respondents into specific groups based on their role in REIPPP, their educational backgrounds and their professional experience. The questionnaire was designed to investigate the prominent source of brand equity. The questions in the questionnaire were incorporated from the extensive literature review (Lee & Leh, 2011), and was divided into four parts to reflect the constructs of the dependent variable (brand equity) and the four independent variables: brand awareness, perceived benefit, brand loyalty, and brand associations. The research was conducted in such a way that the respondents were asked to indicate to what extent they agreed with a set of statements. The questions were rated on a five-point Likert scale. The Likert scale had a five-point response option carrying points of 5, 4, 3, 2, and 1 respectively. where 5 suggested that the respondents strongly agreed and 1 suggested that the respondent strongly disagreed. The last part of the questionnaire was designed to investigate the possibility of any other factors (unprompted) which influenced the views, experiences and perceptions held about the sources of Brand Equity in the REIPPP.

3.5 Data analysis and interpretation

The research tool used for the quantitative analysis was the descriptive Statistical Package for Social Sciences (SPSS) version 25 software, and Excel was used to capture the data collected on a spreadsheet, where tables and graphic presentations were generated. Statistical tests were run to test for applicability of the four constructs in the current REIPPP context. Various other tests were conducted to assess the suitability of the data for modelling purposes. Firstly, descriptive analysis was performed, followed by an analysis of the relationships between the different variables. The relationship between the three constructs with good internal consistency, namely, brand awareness, brand association and perceived quality, was investigated using Spearman's rho correlation coefficient. A non-parametric correlation test was used due to the small size of the sample.

3.6 External validity

According to Winer (2015), external validity is important because of the degree to which the results can be applied to other populations and generalisations made. Winer (2015) further identifies three specific perspectives on external validity which may impact the interpretation of the research results. These are: statistical generalisability, robustness and realism.

It should be noted that this research could be regarded as a case study as only a single energy programme that is specific to the South African market was used. The results may not represent a broader level of validity due to the uniqueness of the South African energy market. It is possible that the findings may not apply to other energy programmes or private-public sector government-related programmes in South Africa.

3.7 Internal validity

According to Gibbert et al. (2008), internal validity refers to the relationship between variables and results. It is the extent to which the design and the data produced by an instrument allows the researcher to draw accurate conclusions about the cause and effect, and other relationships between the data, (Bick, 2007).

Naidoo (2012) recommends three measures which are typically utilised by Gibbert et al. (2008) to enhance internal validity: A clear research framework, Pattern matching, Theory triangulation.

As a result of Aaker's (1991a; 1991b) previous work, a clear and concise research framework is available and prominently used across products and markets as evidenced by the extensive reviews of Aaker's brand equity model. The Brand Equity constructs were assessed using Cronbach's Alpha technique. The validity constructs are justified as the measures were developed based on Aaker's (1991a; 1991b) conceptual framework, which is considered relatable, applicable, and relevant even in a government private-public sector programme.

3.8 Reliability Analysis

Reliability is mainly concerned with the scale's internal consistency, whether the items are all measuring the same underlying construct. One of the most commonly used indicators of internal consistency is the Cronbach's alpha coefficient. The response scale used is ordinal. Table 3 below summarises the Cronbach's alpha scores. Brand awareness showed a high score in terms of measurement reliability with a Cronbach's value of 0.848, exceeding the recommended level of 0.7 (Pallant, 2007). Brand association and Perceived Quality had good internal consistency with values of 0.605 and 0.618 respectively. Brand loyalty was not a reliable scale with the lowest Cronbach's alpha value of 0.260. This is due to the fact that Brand Loyalty as a Brand equity construct is predominantly relevant in a consumer-orientated environment. In this instance, REIPPP is not a consumer-orientated product and is classified mainly as a type of Business to Business or Business to Government private-public sector time specific programme. The possibility of repeat purchase is improbable.

Table 3: Cronbach alpha values

Construct	Cronbach's alpha	Number of items
Awareness	0.848	4
Association	0.605	2
Loyalty	0.260	2
Quality	0.618	4

CHAPTER 4. PRESENTATION OF RESULTS

4.1 Introduction

This section of the report outlines the process and procedures undertaken in the data analysis phase of the research. It begins with presenting demographic information of the respondents followed by a discussion on brand determinants and a discussion of the correlation analysis.

4.2 Demographics

4.2.1 Gender

Table 5 below indicates that 26 (81.2 percent) of the respondents were males and six (18.8 percent) of the respondents were female, totalling 32 respondents.

Table 5: Gender distribution

What is your gender?	Frequency	Percent
Male	26	81.2
Female	6	18.8

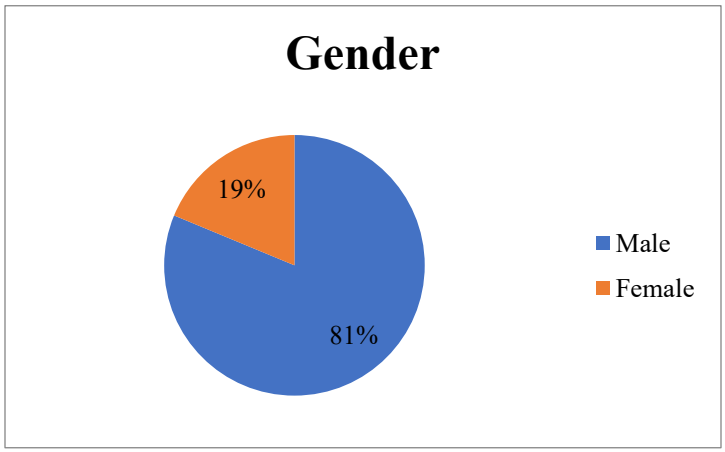


Figure 3: Gender distribution

This is indicative of the gender dynamics in the industry which is mostly male dominated. This seems to be the trend in the renewable energy industry.

4.2.2 Age

Table 6 Age distribution

What is your age?	Frequency	Percent
31-40 years	14	43.8
41-50 years	8	25.0
51-60 years	6	18.8
61-70 years	3	9.4
More than 70 years	1	3.1

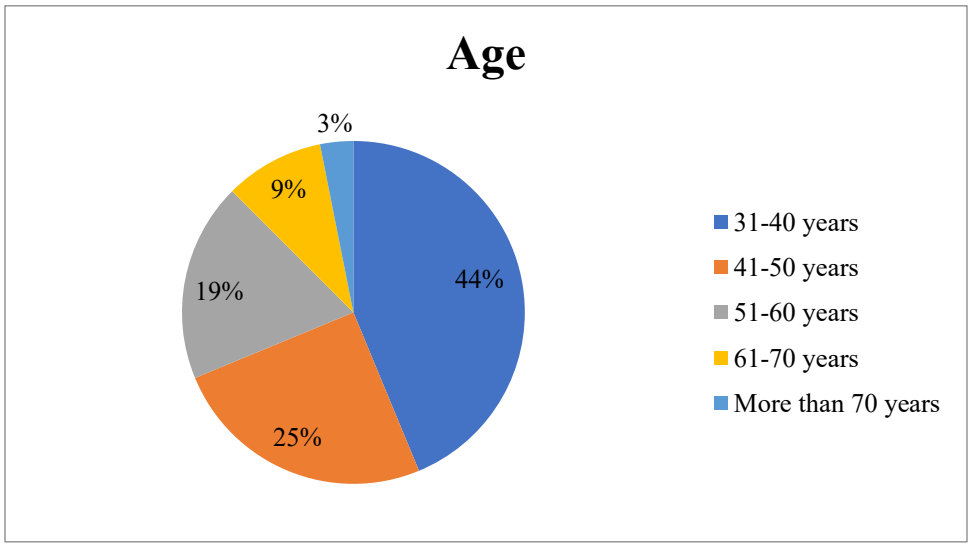


Figure 4: Age distribution

Table 6 and Figure 4 show, of the total sample of 32 respondents, 14 (43.8 percent) were in the age group of 31-40 years, eight (25 percent) were in the age group of 41-50 years, six (18.8 percent) were in the age

group of 51-60 years, three (9.4 percent) were in the age group of 61-70 years, one (3.1 percent) was more than 70 years old. Since most of the respondents in the sample are above the age of forty, this could be an indication that the dominant cohort in the renewable energy sector are mature people who have been exposed to new market creation opportunities.

4.2.3 Province of residence

Table 7: Province of residence

Which province do you live in?	Frequency	Percent
Western Cape	20	62.5
Gauteng	11	34.4
KwaZulu Natal	1	3.1

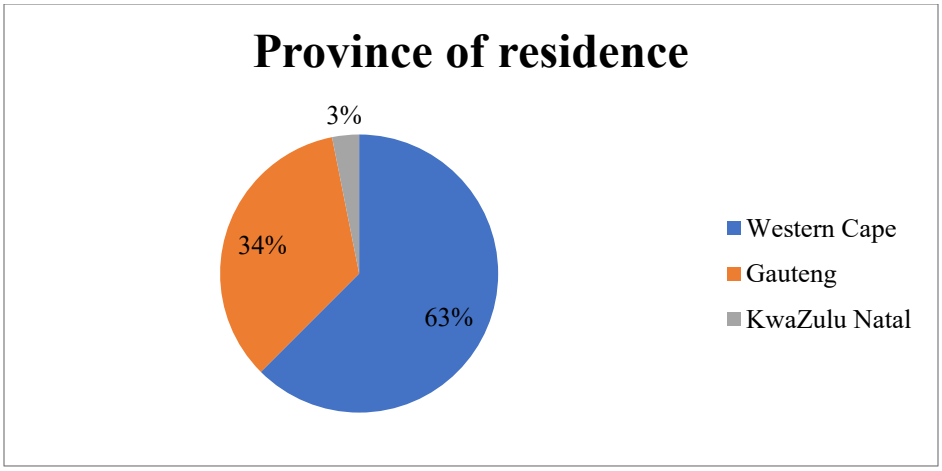


Figure 5: Province of residence

Table 7 and Figure 5 indicate that 20 (62.5 percent) of the respondents live in the Western Cape, 11 (34.4 percent) live in Gauteng and one (3.1 percent) lives in KwaZulu Natal. It is evident from the sample demographics that most participants are from the Western Cape. This could be explained by the fact that

the majority of renewable energy projects are located in the Western Cape (Eberhard, 2015). These renewable energy projects include windfarms, solar energy and hydro projects.

4.2.4 Employment position

Table 8: Employment position

What is your employment position in your firm?	Frequency	Percent
CEO	4	12.5
Director	10	31.3
Manager	6	18.8
Professor	9	28.1
Retired professional engineer	1	3.1
Other roles	1	3.1

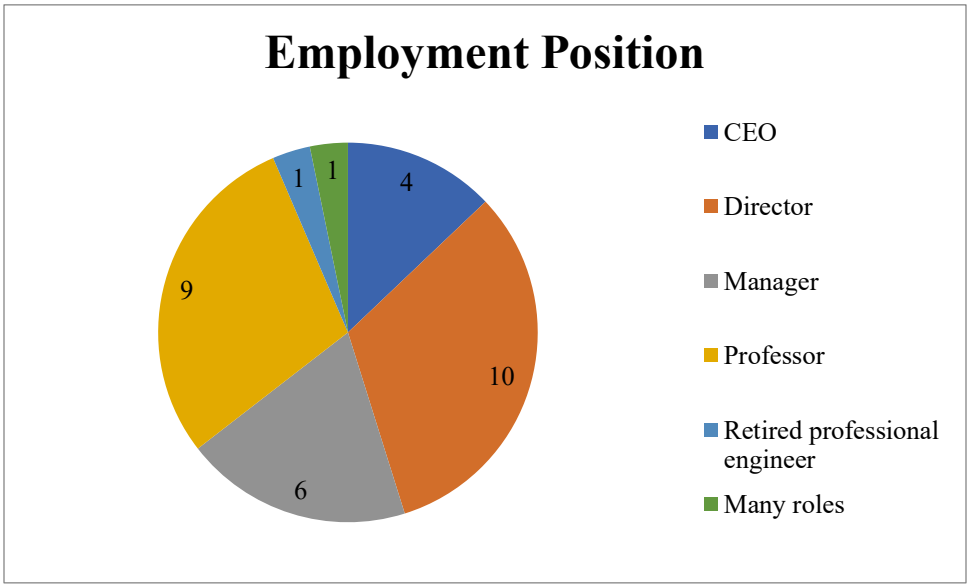


Figure 6: Employment position

Table 8 and Figure 6 indicate that 4 (12.5 percent) of the respondents were CEOs, 10 (31.3 percent) were directors, six (18.8 percent) were managers, nine (28.1 percent) were professors, one (3.1 percent) was a retired professional engineer and one (3.1 percent) stated to have other roles. Most of the respondents in the sample were directors of companies involved in renewable energy projects and are therefore familiar with new opportunities and markets in the renewable energy sector.

4.2.5 Involvement with REIPPP

4.2.5.1 Duration involved with REIPPP

Table 9: Duration involved with REIPPP

How many years has your firm been involved in REIPPP?	Frequency	Percent
10 years or more	24	75.0
7 years	4	12.5
5 years	4	12.5

Table 9 indicates that 24 (75 percent) had been involved with the REIPPP for 10 years or more, 4 (12.5 percent) for seven years and four (12.5 percent) for five years. The fact that most of the respondents have been linked to the renewable energy sector for ten years or more is indicative of the levels of experience and track record that they have in the renewable energy sector.

4.2.5.2 Capacity involved with REIPPP

Table 10: Capacity involved with REIPPP

In what capacity is your firm involved in REIPPP?	Frequency	Percent

Academic	2	6.3
Advisory	2	6.3
Business Development	3	9.4
Engineer	2	6.3
Funding	5	15.6
Marketing	11	34.4
Media	3	9.4
Supplier	4	12.5

Table 10 indicates that most companies were involved in a marketing role with 11 (34.4 percent) in that category, this is followed by five (15.6 percent) involved funding, four (12.5 percent) involved as a supplier, media and business development both had three (9.4 percent). Academic, advisory and engineer roles had two (6.3 percent) respondents each. Most of the respondents have been involved in marketing and media. This is significant and demonstrates a high level of brand awareness that has been on-going through media and advertising.

4.2.5.3 Number of transactions involved in with REIPPP

Table 11: Number of transactions

		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	**1+**	**4**	**12.5**	**12.5**	**12.5**

	15+	**22**	**68.8**	**68.8**	**81.3**
	5+	**1**	**3.1**	**3.1**	**84.4**
	7+	**5**	**15.6**	**15.6**	**100.0**
	Total	**32**	**100.0**	**100.0**	

The study was interested in determining how many projects respondents had been involved within the REIPPP. The findings indicate that the majority of respondents had more than 15 renewable energy projects or transactions in operation. These projects are still active and are mainly funded by local and international financial institutions.

4.2.5.4 Number of people employed by the firm

Table 12: Number of employees

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	100	8	25.0	25.0	25.0
	100+	2	6.3	6.3	31.3
	20	2	6.3	6.3	37.5
	200	5	15.6	15.6	53.1
	300+	1	3.1	3.1	56.3
	5+	3	9.4	9.4	65.6
	50	3	9.4	9.4	75.0
	50+	2	6.3	6.3	81.3
	500	3	9.4	9.4	90.6
	500+	3	9.4	9.4	100.0
	Total	32	100.0	100.0	

The renewable energy sector is providing significant employment opportunities. The study established that most respondents were employing over 500 people in each project on average. 90.6 per cent of the respondents indicated that they employ over 500 people on their projects.

4.2.5.5 Presence in SA and other African countries

Table 13: Presence in SA and other African countries

Does your firm have a presence in SA and other African countries?	Frequency	Percent
Yes	30	93.8
No	2	6.2

Table 13 indicates that 93,8% of the companies represented in the survey have a presence in South Africa and other African countries. Most of the respondents are operating projects in other African countries. This could be indicative that most of them have experience and are successful in operating projects in the energy sector. It also shows that brand awareness has been heightened to the point where they were attracted to the new market opportunities in the renewable energy sector in South Africa.

4.2.5.6 Presence in SA and other International countries

Table 14: Presence in SA and other International countries

Does your firm/organisation have a presence in SA and other international countries?	Frequency	Percent
Yes	21	65.6
No	11	34.4

Table 14 indicates that 65,6% of the companies represented in the survey have an international presence. The table above indicates that most respondents have a presence in other countries apart from Africa. This could signify levels of experience and exposure. Furthermore, it could indicate value addition to REIPPP which increases to brand equity, as suggested by Keller (1998), who considers brand equity as creating value to a product or service, thus enabling a competitive advantage.

4.2.5.7 Potential to be launched internationally

Table 15 Potential to be launched internationally

Do you believe that REIPPP has the potential to be launched internationally?	**Frequency**	**Percent**
Yes	30	93.8
No	2	6.2

Table 15 above indicates that 30 (93.8 percent) of the respondents believe that REIPPP has the potential to be launched internationally and two (6.2 percent) believe otherwise.

The high number of respondents indicating that REIPPP has the potential to be launched internationally provides an excellent strategy for marketers when considering a line extension to other countries. It substantiates Bick's (2009) statement that line extensions into new markets are made possible when brand equity is high. Equity can be influenced by a Brand's country of origin, either directly or indirectly. This can be done through mediating effects such as brand awareness, perceived quality, loyalty, and brands' associations. Hanysha and Ghani (2013) suggest that it is imperative for a brand and from where it originates to have a high-value creation potential. This study has established that in an African and international context, as perceived by the respondents, brand equity can be important in influencing the perceptions of role players in participating in the renewable energy sector. This is made possible by increasing levels of awareness about the successes of REIPPP and modifying the perceived quality into the perceived benefits of the services offered.

4.3 Brand Determinants

4.3.1 Brand Association

The results in Table 16 indicate that on average the respondents agreed with the statement that the REIPPP has positive associations. The respondents were almost equally split on whether Brand associations is a contributor to success, with 39,4 % (9.4 and 25%) disagreeing and 40,6% (25% and 15.6%) agreeing. The respondents were, however, in disagreement that they feel good about being associated with the REIPPP. This is potentially due to the fact that REIPPP experienced political interference which caused negative sentiments amongst the labour unions. The negative sentiments alluded to the fact that the programme could possibly result in potential job losses for people employed in the coal industry. The success of the REIPPP meant that the coal industry will be replaced by the renewable energy sector.

None of the respondents agreed on the question pertaining to having a good feeling about their association with REIPPP, 56.3% strongly disagreeing, and 28.4% disagreeing, totalling 84.4%. Only, 15.6% were undecided. This is also shown by the low standard deviation (0.756). The views on whether REIPPP had positive associations are dispersed (standard deviation = 1.012) across the possible responses, suggesting that this question may have been misinterpreted.

Table 16: Likert scale: Brand Association

Statement	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
	Row N percent	**Row N percent**	**Row N percent**	**Row N percent**	**Row N percent**
A5 REIPPP has positive associations.	0%	21.9%	12.5%	50%	15.6%
A6 I feel good about being associated with the REIPPP.	56.3%	28.1%	15.6%	0%	0%

Table 17: Mean and standard deviation: Brand Association

Statement	Mean	Standard deviation
A5 REIPPP has positive associations.	3.59	1.012
A6 I feel good about being associated with the REIPPP.	1.59	0.756
A7 Brand associations (characteristics associated with the brand, i.e., Department of Energy, DOE, Eskom, BEE, community trusts, enterprise development) have contributed to the success of REIPPP.	3.13	1.238

4.3.2 Brand Awareness

The results in Table 18 indicate that on average the respondents were neutral on the four brand awareness statements. The mean scores for A1 (3.16) and A4 (3.13) are greater than the midpoint of the Likert scale (2.5) whereas A2 (2.75) and A3 (2.68) measure below the midpoint. This implies that the majority of the respondents believed that brand awareness and brand associations were factors contributing to the success of REIPPP whereas accessibility of knowledge and insights about REIPPP across all markets (South Africa, African markets, and beyond) were not factors. However, the views were scattered across the range of all possible responses for both Brand awareness and Brand associations as shown by their standard deviations, i.e., 1.247 and 1.238, respectively. Half of the respondents (50%) were undecided as to whether Brand awareness about REIPP has contributed to the success of REIPPP or not, whereas 28.2 % (6,3 % and 29.9%) agreed that it did. At least 43% (43.8% and 45.2%, A2 and A3 respectively) were indifferent as to whether Knowledge and insights about REIPPP were easily accessible across all markets. However, at least 37.5% did not believe Knowledge and insights were accessible in SA and Africa (37.5%) and, Asia/Europe, (37.85).

Table 18: Mean and standard deviation: Brand Awareness

Statement	Mean	Standard deviation
A1 Brand awareness (Recognition and Recall) about REIPP has contributed to the success of REIPPP.	3.16	1.247
A2 Knowledge and insights about REIPPP is easily accessible in South Africa and other African markets.	2.75	1.047
A3 The knowledge about REIPPP is easily accessible beyond African markets (Europe/Asia).	2.68	0.979

4.3.3 Brand Loyalty

The results in Table 19 below indicated that on average, the respondents agreed with that statement that they believed that brand loyalty has contributed to the success of REIPPP. They were neutral on the statement that they were likely to endorse the REIPPP to colleagues and associates.

While 71.9% (A7: 62.5 and 9.4%) consistently (standard deviation = 0.772) believed that brand loyalty (repeat commitment) contributed to the success of REIPPP, 53.1% would not endorse it to colleagues and associates. Only 31.3% (25% and 6.3%) agreed that they would recommend the REIPPP to colleagues and associates.

Table 19: Likert scale: Brand Loyalty

Statement	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
	Row N percent	**Row N percent**	**Row N percent**	**Row N percent**	**Row N percent**
A7 I believe that brand loyalty (repeat commitment) has contributed to the success of REIPPP.	0%	9.4%	18.8%	62.5%	9.4%
A10 I am likely to endorse the REIPPP to colleagues and associates.	3.1%	53.1%	12.5%	25%	6.3%

Table 20: Mean and standard deviation: Brand Loyalty

Statement	Mean	Standard deviation
A7 I believe that brand loyalty (repeat commitment) has contributed to the success of REIPPP.	3.72	0.772
A10 I am likely to endorse the REIPPP to colleagues and associates.	2.78	1.070

4.3.4 Perceived Quality

Table 21 indicates that there were mixed views regarding whether REIPPP is meaningful, unique and sets the trends .and whether it created economic, social, environmental and country brand value (standard deviation = 1.322 and 1.051 respectively. However, on average, the respondents disagreed with the statements that REIPPP is meaningful, unique and sets the trend; and that economic, social, environmental and country brand value has been created through the REIPPP with mean values of 2.16 and 2.55 respectively. Majority (81.3%) did not agree, comprising of 46.9% strongly disagree,15.6% disagree, 18.8% neutral)

The respondents agreed (68.5%) that information about REIPPP and other insights can be searched online, and REIPPP's perceived product quality/benefit has contributed to the success of REIPPP (71.9%). They (78.2%) also perceive the REIPPP's performance as successful with mean values of 3.66, 3.66 and 3.72 respectively. Findings from the descriptive statistics indicate that recognition and recall, which are core components of brand awareness, are significant in determining the value creation that has been established through the renewable energy programme in South Africa. Keller (2002) has reported that brand recognition and recall are significant in increasing brand awareness. In the South African renewable energy sector, there has been increasing awareness of the potential value that the sector holds in supporting the provision of alternative energy sources to the economy. Eberhard (2019) states that REIPPP has the potential to facilitate growth and investment in the renewable energy sector in the country.

The Perceived quality or in the context of the REIPPP, The Perceived benefit is a key factor in attracting needed investment in any product or service. Most respondents in this study were of the view that REIPPP was providing high quality, performing above expectations and was playing a key role in supporting the South African economy. According to Keller (2002), customer perceptions, preferences, knowledge and attitude are critical in generating interest in a product or service, which may lead to the formulation of appropriate marketing strategies. Understanding these factors can be crucial in assisting marketing managers and practitioners in arriving at informed decisions about a particular brand.

Brand associations are key in developing awareness about a particular product or service. Muqaddas and Ahmad (2016) assert that perceived quality through awareness generated by media exposure or advertising is able to lead to positive brand associations. In the context of this study, REIPPP has managed to create a positive association and demonstrated the perceived benefits of the REIPPP, which has enhanced its brand equity.

Loyalty, associations, perceived quality and awareness play a crucial role in determining the success of a product or service. REIPPP has been successful in generating new product extensions in the form of the development of the Gas and Independent Power Producers programme, which is currently in the research and development stage, as per the announcements made by the Department of Energy (DOE, 2011). Bick (2009) established that loyal customers require less marketing investment than newer customers. Loyalty, therefore, as a source of brand equity, is able to provide economies of scale that lead to reduced marketing budgets. In addition, it has been argued that loyalty is able to lead to incremental cash flow and profitability when undertaking marketing actions to build brand equity (Simon & Sullivan, 1998).

Table 21: Likert scale: Perceived Quality

Statement	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**

	Row N percent	**Row N percent**	**Row N percent**	**Row N percent**	**Row N percent**
A8 I believe that REIPPP is meaningful, unique and sets the trends.	46.9%	15.6%	18.8%	12.5%	6.3%
A9 I believe that information about REIPPP and other insights can be searched online.	3.1%	9.4%	18.8%	56.3%	12.5%
A11 I believe that REIPPP's perceived product quality has contributed to the success of REIPPPP.	0%	12.5%	15.6%	65.6%	6.3%
A12 I rate REIPPP's performance as successful.	3.1%	9.4%	9.4%	68.8%	9.4%
A13 I believe that economic, social, environmental and country brand value been created through the REIPPP.	14.8%	40.7%	25.9%	14.8%	3.7%

Table 22: Mean and standard deviation: Perceived Quality

Statement	Mean	Standard deviation
A8 I believe that REIPPP is meaningful, unique and sets the trends.	2.16	1.322
A9 I believe that information about REIPPP and other insights can be searched online.	3.66	0.937
A11 I believe that REIPPP's perceived product quality has contributed to the success of REIPPPP.	3.66	0.787
A12 I rate REIPPP's performance as successful.	3.72	0.888
A13 I believe that economic, social, environmental and country brand value been created through the REIPPP.	2.55	1.051

4.4 Correlation Analysis

The Pearson correlation coefficient was used to test for relationships between the three constructs, namely, brand awareness, brand association and quality. When testing for a relationship between a pair of variables, three measures are investigated. Firstly, the direction of the relationship that can either be positive (high values of one variable are associated with high values of the other and vice versa) or negative (high values of one variable are associated with low values of the other). Secondly, the strength of the relationship is investigated where a Pearson correlation coefficient of less than 0.3 indicates a weak relationship, the value between 0.3 and 0.5 indicates a medium-strength relationship and a value of more than 0.5 indicates a strong relationship. The third is the p-value where a p-value of less than 0.05 indicates a statistically significant relationship. The results as indicated in table 4 show that there was a medium strength positive correlation between brand awareness and brand association; $r = 0.300$, $n = 32$, $p = 0.096$, the relationship is however not statistically significant. There was a medium strength positive correlation between brand awareness and

quality; r = 0.368, n = 32, p = 0.038, the relationship between the two variables was statistically significant. High values of awareness are associated with high values of quality and vice versa. There was a strong positive correlation between the brand association and quality; r = 0.596, n = 32, p < 0.000, the relationship between the two variables was statistically significant. High values of the brand association are associated with high values of quality and vice versa.

Table 23: Correlation Analysis

Scale	Stats	Awareness	Association	Quality
Awareness	Spearman's rho Correlation Coefficient		0.300	0.368
	p-value		0.096	0.038
	N		32	32
Association	Spearman's rho Correlation Coefficient	0.300		0.596
	p-value	0.096		0.000
	N	32		32
Quality	Spearman's rho Correlation Coefficient	0.368	0.596	
	p-value	0.038	0.000	
	N	32	32	

It is evident from the above analysis that brand awareness is the most significant and meaningful construct when it comes to determining the sources of brand equity in this study. This is because it scored the highest value according to the respondents. This is in line with Chattopadhyay, et al. (2009), who argue that brand awareness, especially through advertising, is extremely successful in generating brand equity. It is also in

line with Switala et al. (2018), who indicate that brand awareness and brand image have an important influence on brand equity. In this study, awareness and perceived quality are the most significant and meaningful sources of brand equity. However, there may exist discrepancies in the analysis, considering that this is a new industry and the sample size of the study was small.

Brand equity requires significant marketing investment in brand awareness. In the case of the REIPPP programme, there have been significant investments by the Department of Energy (shareholder) and other role players in heightening awareness levels. This is evidenced by the plethora of various literature, opinion articles, conferences and media attention on the REIPPP since its launch in 2010. This has been done through the use of information and technology platforms (Eberhard, 2015).

CHAPTER 5. DISCUSSION OF THE RESULTS

5.1 Introduction

This section presents a discussion of the results shown in the former chapters. The discussion is presented in light of prior research and is also based on new findings to highlight what is different to prior research.

5.2 Public Sector Marketing

The idea of applying private sector marketing concepts in the public sector is a developing area of research. This research report takes on Aaker's (1996, pg. 104) suggestion that "modifications to fit the context and task at hand is often the most appropriate approach". In the public sector, the marketing objectives include improved responsiveness to public needs, rather than an increase in customer numbers. This research report focuses specifically on four categories of Aaker's brand equity model. These measures were found by Yoo (2001) in an empirical test to be reliable and valid dimensions in assessing brand equity dimensions. Gromark and Merlin (2013) highlight the concept of New Public Management (NPM) in demonstrating that brand equity and brand orientation are concepts that may be applied in the public sector because they have the ability to create legitimacy and trust. Gromark and Merlin (2013) asserted that brands and brand building in the public sector is gaining momentum because the economies of a large and significant number of countries are driven by public sector organisations. Gromark and Merlin (2013) further state that the public sector brands can be improved by applying brand management principles and techniques from the provide sector. In line with this thinking, the authors have found that many organisations in the public sector today, are subject to pressures to adapt marketing approaches and evaluate brand equity in the public sector. However, this paradigm has not been without criticism from fellow researchers who refute the application of profitability, cash flow and other marketing and economic values in the public sector context. Richie et al (1999) have suggested that not all public sector organisations require brand equity principles and the decision to adopt a brand strategy is one that requires careful consideration. This is due to the fact that the costs associated with brand building are substantial. This poses this question as to whether limited financial

and human resources in the public sector could not be better utilised towards service delivery rather than embarking on a time-consuming process of long-term brand building.

5.3 Demographics

The respondents were selected on the basis of their experience and involvement in the REIPPP. Male respondents were the majority, and this is consistent with the nature of the energy sector where males occupy the majority of the roles in the sector due to the highly technical and engineering aspects of the sector. In the consumer for commercial branding framework, demographics such as age, gender, play a critical role in developing brand equity. However, within the public sector, demographics play a lesser role in determining brand equity because the product tends to benefit society at large.

5.4 Brand Awareness

Based on past exploration studies, brand awareness in the public sector is significant as part of managing the reputation of public organisations. Brand awareness is an essential first step in building a brand (Wu, 2007). According to Phipps et al (2008) brand awareness is primarily driven by controlled communication as advertising and other activities designed to create the desired image, i.e., speaking at conferences and public gatherings. Brand awareness is important in the public sector since a public sector programme that is unknown is unlikely to have a strong brand equity. Furthermore, according to (Teodoro & An, 2018), awareness campaigns in the public sector is important in evoking active citizenry and reactions to public sector brand names and images.

Brand awareness provides the most significant variable across all government programmes because of its impact on harnessing reputation and brand equity by creating value and positive associations (Phipps et al., 2008). However, in the Public Sector Higher education sector, Mourad, Ennew and Kortam (2011) found that brand image was a more prevalent brand equity construct than brand awareness.

5.5 Brand Association

Brand Association as a variable in brand equity is consistent with the findings that public entities, likewise, carry images or association held in public memory and have the power to give either positive or negative brand equity. According to Bauer, Sauer and Exler (2008) brand association is linked to what comes into the minds of the target market when the brand is under discussion or consideration. It is related to the implicit and explicit meanings which a consumer relates/associated with a specific brand name. In the public sector, highly involved brand association plays an important role in communicating brand messages to other public interest groups, in public sector marketing context, however, the more affiliations shown for a government programme the more brand equity and awareness there is. Furthermore, Teodoro and An (2018) found that within a public sector context names, images and icons help develop a brand that conveys information about an entities competency in a given area. According to Delgado-Ballester, Navarro and Sicilla (2011), brand equity facilitates access to new markets as such it is important to design marketing programmes that include a network of positive associations, favourable attitudes and constructive responses from a wide range of stakeholders.

5.6 Brand Loyalty

Brand favourability as opposed to brand loyalty is more prevalent in the Public Sector. This is based on the fact that public interest groups play an important role in showing approval of public programmes and thus influencing brand building (Phipps et al.,2008). Brand loyalty is not a commonly referenced construct in the public sector as it is typically associated with price premium which is commonly linked as a basic indicator of loyalty such as of monetary loyalty programmes found in the private sector consumer goods market.

5.7 Perceived Quality

Perceived benefit as opposed to perceived quality is prevalent in the public sector organisation. Perceived quality is difficult to assess objectively in a public sector domain (Phipps et al.,2008). Rhee and Rhar (2009) emphasis that in the public sector context, the constructs for perceived quality include process quality, outcome quality, design quality and relationship quality. This is consistent with Eberhard (2016) who commends the REIPPP for the manner in which the REIPP was designed and the process that was undertaken to yield a quality outcome. On the other end of the academic spectrum, Teodoro and An (2018) defines perceived quality as the benefits which tend to be personal values associated with public organisation and what citizens believe the organisation can do for them. According to Sarre and Treuren (2001), perceived benefits can be immediate, tangible goods that provide direction and have a social presence whilst providing economic value to the citizen (cleaner energy generation through renewable resources as opposed to coal).

5.8 Conclusion

In light of prior research, Tiltman (2012) observes that in addition to Aaker's traditional sources of brand equity, the 21st-century brand is strongly influenced by an overall branding strategy comprising of four other intangible attributes which include, innovation, reputation, emotional connection and a prominent distinction. All factors have the potential to embed in the end user's thoughts and influence social discourse.

CHAPTER 6. CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter presents a summary in response to the research propositions outlined in the previous chapters. The chapter also includes recommendations to marketing practitioners in the private-public government setting and presents suggestions for future research.

Aaker's brand equity model demonstrates that the four core components of brand equity do, to a certain extent, have relevance and applicability in the government energy programme. It is therefore conceivable that the REIPPP as a brand has demonstrable worth and brand value to the government, management and other stakeholders in the energy sector. This research provided evidence to the fact that understanding the core components of brand awareness and product quality/benefit provides leverage and guidelines on where to focus when marketers are seeking to create value for future government programmes.

6.2 Responses to the Propositions

The following are the conclusions to the Propositions tabled from the Literature Review:

6.2.1 Responses to Proposition 1

Proposition 1: Based on Aaker's (1991) model the following are the sources and determinants that have a significant influence over the REIPPP brand

- *Awareness*
- *Perceived Benefit*
- *Brand Associations*
- *Brand Loyalty*

The objective of the study was to assess whether Aaker's (1991a; 1991b) brand equity model and the four main sources and determinants of brand equity have a significant influence over the REIPPP brand.

The outcome of the research found that the most important determinants were brand awareness and perceived benefit. While there is some understanding of the impact of the other two attributes, these were not found to be important sources of brand equity for the REIPP programme. Consequently, this proposition is *partially supported.*

6.2.2 Responses to Proposition 2

Proposition 2: Understanding these core sources of brand equity in the public sector is important because marketers may start to create and sustain a competitive advantage for government programmes in the public sector.

Understanding the core sources of brand equity in the public sector is important because marketers may start to create and sustain a competitive advantage for government programmes in the public sector. The findings of this study accept the proposition and show there is a correlation between Aaker's (1991a; 1991b) sources of brand equity.

6.2.3 Responses to Proposition 3

Proposition 3: Aaker's (1991a; 1991b) brand equity model can be applied or adopted in the public sector.

Aaker's (1991a; 1991b) brand equity model may be partly applied to the public sector. The findings of the study *partially support* the proposition that the Aaker's brand equity model may be applied in the REIPPP due to the following reasons:

6.2.3.1 Brand awareness

In the context of the REIPPP, findings demonstrate that the distinctive qualities or image of REIPPP are easily recognisable and provided easy recall when REIPPP was launched in 2010. This is evidenced by the fact that each bidding window (repeat sales) of the REIPPP programme was oversubscribed by the number of bidders. Thus, it can be estimated that repeat participation in the REIPPP was easily achieved as a result of the high levels of brand awareness.

Previous research undertaken by Kim et al. (2008) and Yoo (2001) has demonstrated a positive association between brand awareness and customer mindset brand equity. In addition, Wang (2017) also suggests that

there exists a strong relationship between brand awareness and several brand equity market outcome measures, such as revenue premium, share premium, and price premium. Hoyer and Brown (1990) have suggested that a known brand has a much better chance of being chosen by consumers over an unknown brand. Further literature suggests that a well-known brand is likely to perform better in the marketplace compared to a lesser-known brand. Tomczak et al. (2012) also indicated that medical research studies have confirmed that familiar brands have better information retrieval in brain areas than an unfamiliar brand. In the context of the REIPPP, it has been documented that the customer mindset and perceptions about REIPPP suggest that REIPPP is hailed as a great success globally and the achievements of the programme are set against international standards (IRENA, 2013b; Eberhard, Kolker & Leigland, 2014). Montmasson-Clair and Ryan (2014) stated that REIPPP is hailed worldwide as a model for renewable energy procurement for its successful policy and regulatory learning processes.

The above statements present opportunities for REIPPP marketers to explore other brand awareness marketing tools, for example; raising brand awareness through internet marketing tools and other marketing communication channels provides significant leverage in notifying, reminding and convincing customers about the brands, products and services (Shojaee & Azman 2013). According to Arora and Sharma (2013), today, no one can deny the role of social media marketing. Social media is popular these days in promoting various brands. According to Arora and Sharma (2013), there are many ways to promote the brand with the help of social media and the impact of promotion as an awareness strategy through social media is immense and gives a combination of speed and relevance.

Considering the statements made that REIPPP is unique and is currently being replicated in other African markets (Eberhard, 2014), therein lies an opportunity for greater differentiation by investing in strategic brand building activities which could build an emotional connection with customers (Arora & Sharma, 2013).

6.2.3.2 Perceived quality /benefit

Perceived quality is one of the most critical aspects of product development that defines successful product design. The findings of this research, with reference to perceived quality being a meaningful and significant brand variable, are consistent with the comments made by energy specialist, Eberhard (2016), when he stated that South Africa's renewable energy independent power producers programme has been labelled by investors as "the most successful public-private partnership in Africa in the last 20 years". Eberhard (2016) further comments that the perceived quality/ benefits the market holds with regard to REIPPP demonstrates why REIPPP is among the most successful top ten public and privately funded renewable energy programmes in the world. Eberhard (2019) further adds that the potential to expand the REIPPP to the rest of the continent was significant. This is consistent with propositions made by Aaker and Biel (2009) that brand equity is achieved with consumers/market perceives added value to the functional product or service by associating it with the brand name.

6.3 Recommendations and managerial implications

Within the government context, this research report provides guidance to marketing professional as to which brand equity dimensions require investment; the report provides the insights to marketing practitioners that allows them to identify the area(s) that require focus in order to drive brand success (Naidoo, 2012).

6.3.1 Recommendation 1: Increase customer awareness

In line with the advanced levels of digital, social media and technology, it is recommended that marketers of the REIPPP increase levels of awareness through integrated marketing communications strategies. This will entail being proactive and increasing the use of new media that is enhanced by technology, including social media, documenting key learnings and creating platforms for sharing of information and lessons learnt. Aaker and Biel (2019) also advise that advertising is a major contributor to developing brand equity because, advertising enhances brand image. Furthermore, advertising affects profits by amplifying a brand's relative perceived quality. Tiltman (2012) asserts that digital platforms including social media playing an

important role and contributing to the creation of iconic value for brands, resulting in universal brand awareness.

6.3.2 Recommendation 2: Enhance perceived benefit by maximising the brand story development.

The marketing and communications strategies employed in the public sector need to be aimed at fostering cohesive and effective mechanisms for building trust and influencing the customer as a means of building brand equity. Kelley and Silvertein (2005) describe the development of a brand story as the process of investing in memorable, salient branding communications through smartly integrated media exposure and strategic marketing and engagement with the 21st-century consumer. This includes ensuring key messaging around the programme focuses on current consumer benefits which are aligned to societal values. This strategy has the potential to increase trust and thus, provides a signal or a promise to the market about the quality of South African Government Programmes. This may assist in mitigating some problems commonly associated with government programmes (Mourad et al. 2011). Further, the focus should be maintained on those aspects of the programme that deliver the most value i.e., return on investment and enhanced market share, in line with the expectations of key stakeholders. Rogers and Dearing (2007) propose that perceived benefit could be derived by utilising a strategy where a brand story is consistently developed to present brand information in a manner that touches people's lives and evokes emotion within members of a society. Aaker (2002) observes that a brand story is an important contributor to brand value and is often expressed in a set of assets linked to a brand's name and symbols.

6.3.3 Recommendation 3: Adoption of brand orientation towards creating long term shareholder value

Historically, government agencies have been associated with marketing and communications approaches, design styles and channels which are often considered outdated. This presents an opportunity for marketers to avoid short-termism by developing an ideology and culture of building long term shareholder value by identifying exploring more creative and innovative marketing approaches on how content is packaged and

channels are identified. Dinghile (2013) emphasises the importance of brand managers to consider value creation at every opportunity when interacting with stakeholders in order to know what is important to them and what will drive their loyalty and enthusiasm to share the brand experiences with others. For example, REIPPP could consider developing content for print, radio and television that is engaging and inviting the participation of segmented key stakeholders with the view to embarking on brand identity development and resonance. A possible approach would be to develop a case study or use the brand story to illustrate the value of brand equity and link it to shareholder value (Aaker and Biel, 2009). This may be achieved by adopting a range of platforms including podcasts and video-on-demand, incorporating infographics and brand success stories.

As part of value creation, it is also noted that in spite of the range of studies that focus on brand extension strategy as the main outcome of brand equity in the consumer market, the role of brand equity in developing brand extension strategies in the public sector is a possible area of consideration for marketers in the public sector.

6.4 Suggestions for further research

The contribution of this report is to enhance academic understanding of brand equity in the public sector and to explore the implications for management practice whilst providing marketers in the public sector with the tools for public sector marketing. This is consistent with the assertions made by Pope et al. (2009) that Public Sector and Non-profit organisations generally struggle with a lack of understanding of the true functions of marketing, difficulties in branding and an inability to create value to their target markets. The following areas of future research are suggested that may complement the findings in this study.

It is suggested that further research in the domain of public sector brand management be explored, specifically in a South African context with a larger sample size in relation to brand management for government programmes that involve elements of private sector brand building principles and consumer and brand orientated approaches. There is a need to develop a South African based conceptual framework

that reflects the breadth and diversity that characterises the public sector. Research may also focus on a case study or qualitative research approach in order to better understand the ideas and perceptions of the myriad of stakeholders and how constructs such as product, pricing, place and promotional activities, digital marketing communications and other marketing principals and constructs are applied and measured in a private-public government context.

It is also recommended that research be undertaken on the impact of the selected sources of brand equity on REIPPP's revenue and brand value. For example, how much would another emerging economy such as Ghana, Kenya or Tanzania be willing to pay for the intellectual properties of the REIPPP?

Lastly, considering that brand awareness and perceived benefit are the most significant constructs in this particular study, it is suggested a further explanatory study be undertaken to determine how brand awareness relates to market outcome, and brand equity and the marketing mix (Huang, R., & Sarigöllü, E., 2014). This will address concerns about marketing's accountability issues in the public sector which is currently an area of research that has received little attention.

6.5 Conclusion

In line with the key findings of this study, the research results are accepted and are consistent in that heightening awareness is the first key step to enhancing brand associations, demonstrating perceived benefit and building loyalty with key stakeholders in order to ensure that marketing efforts can increase brand equity. However, the findings should not be generalised as this report sought to at least provide a framework to guide further studies of brand equity in the public sector. Furthermore, Aaker (2002) recommends that understanding customer perceptions and ensuring that brands meet customer expectations are reliable and consistent over time, that prices reflect the added value and lastly that brands should be positioned properly in the market should form the foundation of any Brand Equity development process.

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APPENDIX A: SUMMARY OF BRAND EQUITY STUDIES

Summary of the main brand equity studies are adapted from the Aaker (1991a; 1991b) and Keller (1998) frameworks

Empirical study	Model adopted	Country where study was conducted and sample description	Conceptualisation of brand equity	Industry/product
Biedenbach, Bengtsson & Marell (2015)	Aaker	Sweden, Chief Executive Officers and Chief Financial Officers (age details not specified)	Brand awareness, brand associations, perceived quality and brand loyalty.	Financial sector
Balaji (2015)	Aaker and Keller	India, 40 year-old women consumers and above	Brand awareness, brand associations, perceived quality and brand loyalty.	Sunflower cooking oil
Sasmita & Suki (2015)	Aaker	Malaysia, 18-25 year-old consumers	Brand awareness, perceived quality, brand associations and brand loyalty.	Fashion
Christodoulides, Cadogan & Veloutsou (2015)	Aaker	United Kingdom, Germany and Greece, 18-65 year-old consumers	Brand awareness, perceived quality, brand associations and brand loyalty.	Goods, services and internet
Im, Kim, Elliot & Han (2015)	Aaker and Keller	Malaysia, 20-50 year-old professionals and university students tourists	Brand awareness, perceived quality, brand associations and brand loyalty.	Tourism
Su & Tong, 2015	Aaker	USA, 18-30 year-old undergraduate students	Brand awareness, perceived quality, brand associations and brand loyalty.	Sportswear
Ulfat, Muzaffar & Shoaib (2014)	Aaker	Pakistan, 18-45 year old female customers	Brand awareness, perceived quality, brand associations and brand loyalty.	Beauty care
Gupta & Adil (2014)	Aaker	New Zealand and United Arab Emirates, university student population between the ages of 14-60	Brand awareness, perceived quality, brand associations and brand loyalty.	Not specified
Mishra, Dash & Cyr (2014)	Aaker	India, smartphones users	Brand association, perceived value**, brand trust** and brand loyalty.	Smartphone
Davari & Strutton (2014)	Aaker	United States, university students	Brand associations, brand loyalty, perceived brand quality and brand trust**.	Food and restaurant
Shen, Yuan, Zhang & Zhao (2014)	Aaker	China, 14-44 year-old hotel customers	Brand awareness, perceived quality, brand associations and brand loyalty*.	Hospitality

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Davari & Strutton (2014)	Aaker	United States, university students	Brand associations, brand loyalty, perceived brand quality and brand trust**.	Food and restaurant
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APPENDIX B: RESULTS TABLES

Table 1: Cronbach's alpha values

Construct	Cronbach's alpha	Number of items
Awareness	0.848	4
Association	0.605	2
Loyalty	0.260	2
Perceived Quality	0.618	4

Table 2: Correlation analysis

Scale	Stats	Awareness	Association	Quality
Awareness	Spearman's rho Correlation Coefficient		0.300	0.368
	p-value		0.096	0.038
	N		32	32
Association	Spearman's rho Correlation Coefficient	0.300		0.596
	p-value	0.096		0.000
	N	32		32
Quality	Spearman's rho Correlation Coefficient	0.368	0.596	
	p-value	0.038	0.000	
	N	32	32	

Table 3: Likert scale: Brand Awareness

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	Row N percent	Row N percent	Row N percent	Row N percent	Row N percent
A1 Brand awareness (Recognition and Recall) about REIPP has contributed to the success of REIPPP.	12.5%	9.4%	50%	6.3%	21.9%
A2 Knowledge and insights about REIPPP is easily accessible in South Africa and other African markets.	12.5%	25%	43.8%	12.9%	6.3%
A3 The knowledge about REIPPP is easily accessible beyond African markets (Europe/Asia).	12.9%	25.8%	45.2%	12.9%	3.2%
A4 Brand associations (characteristics associated with the brand, i.e., Department of Energy, DOE, Eskom, BEE, community trusts, enterprise development) have contributed to the success of REIPPP.	9.4%	25%	25%	25%	15.6%

Table 4: Mean and standard deviation: Brand Awareness

Statement	Mean	Standard deviation
A1 Brand awareness (Recognition and Recall) about REIPP has contributed to the success of REIPPP.	3.16	1.247
A2 Knowledge and insights about REIPPP is easily accessible in South Africa and other African markets.	2.75	1.047
A3 The knowledge about REIPPP is easily accessible beyond African markets (Europe/Asia).	2.68	0.979
A4 Brand associations (characteristics associated with the brand, i.e., Department of Energy, DOE, Eskom, BEE, community trusts, enterprise development) have contributed to the success of REIPPP.	3.13	1.238

Table 5: Likert scale: Brand Association

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	Row N percent	Row N percent	Row N percent	Row N percent	Row N percent
A5 REIPPP has positive associations.	0%	21.9%	12.5%	50%	15.6%
A6 I feel good about being associated with the REIPPP.	56.3%	28.1%	15.6%	0%	0%

Table 6: Mean and standard deviation: Brand Association

Statement	Mean	Standard deviation
A5 REIPPP has positive associations.	3.59	1.012
A6 I feel good about being associated with the REIPPP.	1.59	0.756

Table 7: Likert scale: Brand Loyalty

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	Row N percent	Row N percent	Row N percent	Row N percent	Row N percent
A7 I believe that brand loyalty (repeat commitment) has contributed to the success of REIPPP.	0%	9.4%	18.8%	62.5%	9.4%
A10 I am likely to endorse the REIPPP to colleagues and associates.	3.1%	53.1%	12.5%	25%	6.3%

Table 8: Mean and standard deviation: Brand Loyalty

Statement	Mean	Standard deviation
A7 I believe that brand loyalty (repeat commitment) has contributed to the success of REIPPP.	3.72	0.772
A10 I am likely to endorse the REIPPP to colleagues and associates.	2.78	1.070

Table 9: Likert scale: Quality

Statement	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
	Row N percent	**Row N percent**	**Row N percent**	**Row N percent**	**Row N percent**
A8 I believe that REIPPP is meaningful, unique and sets the trends.	46.9%	15.6%	18.8%	12.5%	6.3%
A9 I believe that information about REIPPP and other insights can be searched online.	3.1%	9.4%	18.8%	56.3%	12.5%
A11 I believe that REIPPP's perceived product quality has contributed to the success of REIPPPP.	0%	12.5%	15.6%	65.6%	6.3%
A12 I rate REIPPP's performance as successful.	3.1%	9.4%	9.4%	68.8%	9.4%
A13 I believe that economic, social, environmental and country brand value been created through the REIPPP.	14.8%	40.7%	25.9%	14.8%	3.7%

Table 10: Mean and standard deviation: Quality

Statement	Mean	Standard deviation
A8 I believe that REIPPP is meaningful, unique and sets the trends.	2.16	1.322
A9 I believe that information about REIPPP and other insights can be searched online.	3.66	0.937
A11 I believe that REIPPP's perceived product quality has contributed to the success of REIPPPP.	3.66	0.787
A12 I rate REIPPP's performance as successful.	3.72	0.888
A13 I believe that economic, social, environmental and country brand value been created through the REIPPP.	2.55	1.051

APPENDIX C: QUESTIONNAIRE

Dear Colleague in the Renewable energy Sector

QUESTIONNAIRE: DETERMINING THE SOURCES OF BRAND EQUITY IN A GOVERNMENT PROGRAMME: A CASE OF THE RENEWABLE ENERGY INDEPENDENT POWER PRODUCERS PROGRAMME (REIPPP) IN SOUTH AFRICA

I hope that this finds you well.

You will recall that we met at an energy conference and I mentioned that I am a master's student studying Strategic Marketing at Wits Business School.

I am in the process of writing a research report on determining the sources of Brand Equity in a Government Programme: A case of the Renewable Energy Independent Power Producers Programme in South Africa.

REIPPP has been internationally lauded as the most successful government programme for renewable energy in South Africa. Much has been written about REIPPP from many perspectives including from a legal, financial, procurement, social and economic perspectives. However little research has been undertaken about REIPPP from a marketing perspective, particularly the importance of the REIPPP brand, hence the purpose of this study.

I would like to ask you to take part in this study by completing the questionnaire that is aimed at obtaining your valuable response. Please note that the information that you provide will be kept confidential and will not be used for other things besides this study.

If you have any queries concerning this research study, you are free to contact me at desireemojanaga@gmail.com or contact my master's Supervisor Professor Geoff Bick at Geoff.bick@gsb.uct.ac.za

This questionnaire is not long and should take 10-15 minutes of your time. Please respond by accessing this link.

https://docs.google.com/forms/d/e/1FAIpQLSfpK-jMeWv785FcZS-OyGVaG2bDTbkMCHdghvIKYMu45G88ww/viewform?vc=0&c=0&w=1

Name:

Gender:

Male		Female	

Age:

Less than 30	31 - 40	41 - 50	51 - 60	61 - 70	Other

Race:

Black	White	Coloured	Indian	Other

Which province do you reside in?

Limpopo		Gauteng		Mpumalanga	
North West		Free State		KwaZulu Natal	
Western Cape		Northern Cape		Northern Cape	

What is your employment position in your firm?

CEO	Director	Manager	Professional	Administration	Other

Industry: (*Please indicate with an x next to the relevant block*

Law Firms	Press/Media		Sales/Business Development/Marketing Professional Services		Regulators		Utility services company	
Engineering	Financial Services		Government		DFI's		Multilateral	
IPP's Wind	IPP- Solar		IPP- Biomass		IPP - Hydro		Engineering Firms	
Industry Bodies SAIPPA, SAWEA, SAPVIA, SAREC	***Please indicate the name of your industry***							

**SAIPPA: South African Independent Power Producers Association - *SAWEA: South African Wind Energy Association - *SAPVIA: South African Photovoltaic Industry Association - *SAREC: South African Renewable Energy Association*

Has your firm been involved in South African's renewable energy programme (REIPPP?) if no, you do not need to continue with the questionnaire

Yes	No

How many years has your firm been involved in the REIPPP?

2 years	5 years	7 years	10+ Years

In what capacity is your firm involved in REIPPP?

Advisory	Funding	Supplier	Academic	Bidder	Prospector	Other

How many transactions have you been involved in in the REIPPP?

1+	5+	7+	15+	Other

How many people are employed in your firm?

5+	50+	70+	100+	300+	500+	Other

Does your firm have presence in SA and other African Countries?

Yes	No

Does your firm/organization have presence in SA and other international Countries?

Yes	No

Yes	No

Statistics						
		Gender What is your gender?	Age What is your age?	Province Which province do you live?	Employment position What is your employment position in your firm?	Industrybodies_industry If you have chosen industry bodies as an option, then please indicate the name of the industry.
N	Valid	32	32	32	32	32
	Missing	0	0	0	0	0

Do you believe that REIPPP has the potential to be launched internationally?

Please indicate the extent to which you strongly agree or disagree	Strongly agree				Strongly disagree
	5	*4*	*3*	*2*	*1*
Brand awareness (Recognition and Recall) about REIPPP has contributed to the success of REIPPP					
The name REIPPP is easily recognizable in South Africa					
Knowledge and insights about REIPPP are easily accessible in South Africa and other African Markets					
The knowledge about REIPPP is easily accessible beyond African markets (Europe/Asia)					
Brand associations (characteristics associated with the brand, i.e., Department of Energy, DOE, Eskom, BEE, Community trusts, enterprise development) have contributed to the success of REIPPP					
REIPPP has positive associations					
REIPPP has negative associations					
I feel good about being associated with the REIPPP					
I believe that brand loyalty (repeat commitment) has contributed to the success of REIPPP					
I believe that REIPPP is meaningful, unique and sets the trends					
I believe that information about REIPPP and other insights can be searched online					
I am likely to endorse the REIPPP to colleagues and associates					
I believe that REIPPP's perceived product quality has contributed to the success of REIPPPP					
I rate REIPPP's performance as successful					
I rate REIPPP's performance as unsuccessful					
I believe that economic, social, environmental and country brand value been created through the REIPPP					
Which other factors do you believe are the sources of REIPPP's brand success					

Frequency Table

Gender What is your gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	26	81.3	81.3	81.3
	Female	6	18.8	18.8	100.0
	Total	32	100.0	100.0	

Age What is your age?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	31-40 years	14	43.8	43.8	43.8
	41-50 years	8	25.0	25.0	68.8
	51-60 years	6	18.8	18.8	87.5
	61-70 years	3	9.4	9.4	96.9
	More than 70 years	1	3.1	3.1	100.0
	Total	32	100.0	100.0	

Province Which province do you live?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Western Cape	20	62.5	62.5	62.5
	Gauteng	11	34.4	34.4	96.9
	KwaZulu Natal	1	3.1	3.1	100.0
	Total	32	100.0	100.0	

Employment position What is your employment position in your firm?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	CEO	4	12.5	12.5	12.5
	Director	10	31.3	31.3	43.8
	Manager	6	18.8	18.8	62.5
	Many different roles, such student, researcher, developer, consultant	1	3.1	3.1	65.6
	Professional	9	28.1	28.1	93.8

	Researcher	1	3.1	3.1	96.9
	Retired Professional Engineer	1	3.1	3.1	100.0
	Total	32	100.0	100.0	

Industrybodies_industry If you have chosen industry bodies as an option, then please indicate the name of the industry.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Civil and Electrical power projects	1	3.1	3.1	3.1
	Energy	1	3.1	3.1	6.3
	SANEC	30	93.8	93.8	100.0
	Total	32	100.0	100.0	

Frequencies

Statistics		Q1 Has your firm been involved in South African's renewable energy programme (REIPPP)? If your answer is no then you do not need to continue with this questionnaire?	Q2 How many years has your firm been involved in REIPPP?	Q3 In what capacity is your firm involved in REIPPP?	Q4 How many transactions have you been involved in the REIPPP?	Q5 How many people are employed in your firm?	Q6 Does your firm have a presence in SA and other African countries?	Q7 Does your firm/organisation have a presence in SA and other international countries?	Q8 Do you believe that REIPPP has the potential to be launched internationally?
N	Valid	32	32	32	32	32	32	32	32
	Missing	0	0	0	0	0	0	0	0

Frequency Table

Q1 Has your firm been involved in South African's renewable energy programme (REIPPP)? If your answer is no then you do not need to continue with this questionnaire?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	32	100.0	100.0	100.0

Q2 How many years has your firm been involved in REIPPP?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10 years and more	24	75.0	75.0	75.0
	5 years	4	12.5	12.5	87.5
	7 years	4	12.5	12.5	100.0
	Total	32	100.0	100.0	
Q3 In what capacity is your firm involved in REIPPP?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Academic	2	6.3	6.3	6.3
	Advisory	2	6.3	6.3	12.5
	Business Development	3	9.4	9.4	21.9
	Engineer	2	6.3	6.3	28.1
	Funding	5	15.6	15.6	43.8
	Marketing	11	34.4	34.4	78.1
	Media	3	9.4	9.4	87.5
	Supplier	4	12.5	12.5	100.0
	Total	32	100.0	100.0	

Q4 How many transactions have you been involved in the REIPPP?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1+	4	12.5	12.5	12.5
	15+	22	68.8	68.8	81.3
	5+	1	3.1	3.1	84.4
	7+	5	15.6	15.6	100.0
	Total	32	100.0	100.0	

Q5 How many people are employed in your firm?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	100	8	25.0	25.0	25.0
	100+	2	6.3	6.3	31.3
	20	2	6.3	6.3	37.5
	200	5	15.6	15.6	53.1
	300+	1	3.1	3.1	56.3
	5+	3	9.4	9.4	65.6
	50	3	9.4	9.4	75.0
	50+	2	6.3	6.3	81.3
	500	3	9.4	9.4	90.6
	500+	3	9.4	9.4	100.0
	Total	32	100.0	100.0	

Q6 Does your firm have a presence in SA and other African countries?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	30	93.8	93.8	93.8
	No	2	6.3	6.3	100.0
	Total	32	100.0	100.0	

Q7 Does your firm/organisation have a presence in SA and other international countries?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	21	65.6	65.6	65.6
	No	11	34.4	34.4	100.0
	Total	32	100.0	100.0	

Q8 Do you believe that REIPPP has the potential to be launched internationally?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	30	93.8	93.8	93.8
	No	2	6.3	6.3	100.0
	Total	32	100.0	100.0	

Custom Tables							
Business Awareness							
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
A1 Brand awareness (Recognition and Recall) about REIPP has contributed to the success of REIPPP.	Count	4	3	16	2	7	32
	Row N %	12.5%	9.4%	50.0%	6.3%	21.9%	100.0%
A2 Knowledge and insights about REIPPP is easily accessible in South Africa and other African markets.	Count	4	8	14	4	2	32
	Row N %	12.5%	25.0%	43.8%	12.5%	6.3%	100.0%
A3 The knowledge about REIPPP is easily accessible beyond African markets (Europe/Asia).	Count	4	8	14	4	1	31
	Row N %	12.9%	25.8%	45.2%	12.9%	3.2%	100.0%

A4 Brand associations (characteristics associated with the brand, i.e., Department of Energy, DOE, Eskom, BEE, community trusts, enterprise development) have contributed to the success of REIPPP.	Count	3	8	8	8	5	32
Frequencies							
Statistics							
	N		Mean	Std. Deviation			
	Valid	Missing					
A1 Brand awareness (Recognition and Recall) about REIPP has contributed to the success of REIPPP.	32	0	3.16	1.247			
A2 Knowledge and insights about REIPPP is easily accessible in South Africa and other African markets.	32	0	2.75	1.047			
A3 The knowledge about REIPPP is easily accessible beyond African markets (Europe/Asia).	31	1	2.68	0.979			
A4 Brand associations (characteristics associated with the brand, i.e., Department of Energy, DOE, Eskom, BEE, community trusts, enterprise development) have contributed to the success of REIPPP.	32	0	3.13	1.238			

Custom Tables							
Association							
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
A5 REIPPP has positive associations.	Count	0	7	4	16	5	32
	Row N %	0.0%	21.9%	12.5%	50.0%	15.6%	100.0%
A6 I feel good about being associated with the REIPPP.	Count	18	9	5	0	0	32
	Row N %	56.3%	28.1%	15.6%	0.0%	0.0%	100.0%
Frequencies							
Statistics							
	N		Mean	Std. Deviation			
	Valid	Missing					
A5 REIPPP has positive associations.	32	0	3.59	1.012			
A6 I feel good about being associated with the REIPPP.	32	0	1.59	0.756			
Custom Tables							
Loyalty							
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
A7 I believe that brand loyalty (repeat commitment) has contributed to the success of REIPPP	Count	0	3	6	20	3	32
	Row N %	0.0%	9.4%	18.8%	62.5%	9.4%	100.0%

A10 I am likely to endorse the REIPPP to colleagues and associates.	Count	1	17	4	8	2	32
	Row N %	3.1%	53.1%	12.5%	25.0%	6.3%	100.0%
Frequencies							
Statistics							
	N		Mean	Std. Deviation			
	Valid	Missing					
A7 I believe that brand loyalty (repeat commitment) has contributed to the success of REIPPP	32	0	3.72	0.772			
A10 I am likely to endorse the REIPPP to colleagues and associates.	32	0	2.78	1.070			

Custom Tables

Quality

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
A8 I believe that REIPPP is meaningful, unique and sets the trends.	Count	15	5	6	4	2	32
	Row N %	46.9%	15.6%	18.8%	12.5%	6.3%	100.0%
A9 I believe that information about REIPPP and other insights can be searched online.	Count	1	3	6	18	4	32
	Row N %	3.1%	9.4%	18.8%	56.3%	12.5%	100.0%
A11 I believe that REIPPP's perceived product quality has contributed to the success of REIPPPP.	Count	0	4	5	21	2	32
	Row N %	0.0%	12.5%	15.6%	65.6%	6.3%	100.0%
A12 I rate REIPPP's performance as successful.	Count	1	3	3	22	3	32
	Row N %	3.1%	9.4%	9.4%	68.8%	9.4%	100.0%
A13 I believe that economic, social, environmental and country brand value been created through the REIPPP.	Count	4	11	7	4	1	27
	Row N %	14.8%	40.7%	25.9%	14.8%	3.7%	100.0%

Frequencies

Statistics

	N		Mean	Std. Deviation
	Valid	Missing		
A8 I believe that REIPPP is meaningful, unique and sets the trends.	32	0	2.16	1.322
A9 I believe that information about REIPPP and other insights can be searched online.	32	0	3.66	0.937
A11 I believe that REIPPP's perceived product quality has contributed to the success of REIPPPP.	32	0	3.66	0.787
A12 I rate REIPPP's performance as successful.	32	0	3.72	0.888
A13 I believe that economic, social, environmental and country brand value been created through the REIPPP.	27	5	2.52	1.051