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Impact of “fee free tertiary education” on the perceived quality dimension of Student-Based Brand Equity of a South African Public Higher Education Institution

Kemp, Elmada

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Impact of “fee free tertiary education” on the Perceived Quality Dimension of Student-Based Brand Equity of a South African Public Higher Education Institution.



A research report was submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Management in Strategic Marketing.

Elmada Kemp | 1977341

E: madikemp@gmail.com

Supervisor: **Laurence Beder**

Wits Business School

Johannesburg 2020

Abstract

Background – To investigate the possible impact which the announcement of free Tertiary education for Undergraduate Students has on the Brand Equity of public Higher Education Institutions.

Purpose – **Concentrating on the Perceived Quality Dimension,** this research will also indicate which other Consumers-based Brand Equity Dimensions the Marketing Department of University must concentrate on, to be able to mediate the effect that this announcement had on the Brand Equity of the HEI.

Research Methodology – Quantitative Research approach was followed. The research was done by gathering survey data. Responses from nine hundred and thirty-three current university students were included in the sample. Confirmatory Factor Analysis and Structural equation modelling (SEM) analysis were used to confirm and analyse the data.

Findings – Students in different tuition funding categories will have different perceptions of HEI's consumer-based brand equity.

Research limitations – This study only included current students from one University in South Africa. The inclusion of Alumni, Staff and Prospective students in a follow-up study will allow the interpretation of the data of other important stakeholder groups in the HEI.

Implications – The benefits derived from this study's findings will enable Student Recruitment and Marketing departments to apply Brand building and Brand Management theory and refine their strategy to this niche market of Higher Education. Knowledge gained will also contribute to the understanding of Marketing Management in Higher Education Institutions in the African context.

Keywords:

- higher education institutions,
- HEI,
- Consumer-based Brand Equity,
- South-African,
- #FeesMustFall,
- Fee Free tertiary education.
- Perceived Quality

DECLARATION

I, Elmada Kemp, 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 Master of Management in Strategic Marketing at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.



Elmada Kemp

Signed at Bloemfontein

On the 28th day of March 2021

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1 INTRODUCTION

1.1 Purpose of the study

This paper seeks to contribute to the academic knowledge pool of South African HEI's unique Brand essence and model and enable the Marketing Professionals in these Institutions to join in constructive discussion towards developing a niche Brand Management tool for these institutions.

The lack of research on university brand equity in relation to Fee Free tertiary education in the South African context necessitates this research to enable further discussion and research specific to this region, identifiable with its combination of financial and social constructs. Future research will enable us to compare South African results to other continents and countries results.

This research will also give an indication on which Consumer-based Brand Equity Dimensions the Marketing Professional of Universities must concentrate on, be able to mediate external threats towards their Consumer-based Brand Equity of the HEI and, as a result, enable them to create a sustainable competitive advancement in an HEI environment in an emerging market.

1.2 Context of the study

Sixty-two years after the publication of the African National Congress's Freedom Charter (ANC Freedom Charter, 1955) and twenty-nine years after the first Democratic elections was held, the highly-anticipated announcement was made by the then President of South Africa, President Zuma (Pres Zuma, 2017).

"The immediate implementation of free higher education for poor and working-class South African youth."

This announcement was greeted with relief from the young, poor and working-class prospective students that knew that they now have access to tertiary education,

which will increase their chances to be employed in a country that has a Youth (15-34 years) unemployment rate of 38,6 in the third quarter of 2017. (StatsSA, n.d.). Their struggle to access the promise of "Higher education to all by means of state allowances and scholarships awarded on the basis of merit" have paid off.

This announcement had an immediate operational and financial impact on the Institutions which were already plagued by protests and violence as a result of the #Feesmustfall Movement's actions, which started mid-October 2015 (Langa et al., 2017).

In 2015 StatsSA published Financial statistics of higher education institutions report that 34,1% of HEIs income was obtained in tuition fees, 42,6% was grants, and 23,3% was from third stream income. It is also reported that the running costs HEIs have risen rapidly and that their spending increased by 10,9% per year, while the amount of revenue received climbed by 9,9%. Another factor is a decline in general funding for Universities (South African Ministry, 2016) (Appendix D). In 2018 Government set aside additional funding of R4.581bn for qualifying university students to address the shortfall.

With all these facts in mind, it raises many questions about how this will impact HEIs and the academic community.

- Will the HEIs and DHET Central Applications Clearing House (CACH) online systems handle and process the mass applications to HEIs? Currently, ±10% of undergraduate students that applied in 2018 had been accepted as students due to limited space and infrastructure available to accommodate them. In 2019 and 2020, we see the trend continue.
- Will HEIs be able to deliver quality tertiary education given the extra burden?
- Will the product (graduates) be of high quality and employable and not rushed through the system to access the DHET grants?
- Will the infrastructure of Public Universities be sustainable and maintained? i.e. enough classrooms and residences, IT and operational infrastructures?
- Will there be enough money to recruit and retain qualified Academic and Support staff?

For Marketing and Brand Practitioners in HEIs, the above questions will lead to the following critical question:

What effect will this have on the rankings, reputation, and image of Higher Education Institutions and, inadvertently, the Brand Equity of a University?

The last question is one is of high significance for the Higher Education Environment; HEI's adopted Strategic Band Management methods in recent years to be able to improve their ranking in the industry (QSTop Universities, 2017) and to enable them to compete in an ever-changing, commercially orientated, Higher Education environment (Balaji et al., 2016; Chapleo et al., 2011) Universities that embrace corporate branding strategies will succeed and will create value for the institutions and their stakeholders (Whisman, 2009).

Universities that have a better Brand image, higher ranking and achieve more than the other comparable institutions attract higher achieving students, adding to their Brand Equity with time. This is a sustainable competitive advantage and an intangible asset for Universities. Brand Equity acts as a risk reliever, giving consumers – in this case, donors, alumni and students and prospective students – greater confidence in their decision making and increasing trust (Erdem & Swait, 2001) in the institution. As a result, these universities can charge a premium for services rendered to students (those that can afford tuition fees) and especially for research output for companies, better known as Third Stream Income.

Brand Equity influence the ability to fundraise; for example, Donors want to be associated with a success story. They want to see what positive impact their donations have and that the institutions must have transparent and ethical financial governance to be held accountable.

Alumni want to be associated with an institution with a reputable track record with Alumni who are achievers. This gives them pride and alleviates the status of their qualification than other institutions. This will also encourage them to return for additional qualifications. Alumni with a higher affinity will also donate and invest their time to their Alma mater (Iskhakova et al., 2016).

1.3 Problem statement

1.3.1 Main Problem

Universities need to stay competitive to attract the brightest students, which will generate more research grants and third-stream income, which these public institutions desperately need to provide quality education – especially in South Africa, where tertiary education is free for low-income households. Most Achievers apply to higher-rated, and they perceive “quality” institutions, and as identified by Pinar et al. (2014), Perceived quality is a high impact dimension of Student based brand equity.

There is very little research on the impact fee-free tertiary education has on a student’s perceived quality, even less research in a South African context as fee-free tertiary education is a new paradigm in the South African HEI marketing environment.

With this in mind – this research attempts to measure the impact empirically and provide tools to mitigate the risk of the impact that fee-free education may pose to the Perceived Quality dimension, and therefore, to the student-based brand equity of an HEI.

1.3.2 Sub-problem

Secondary to the above problem: does the Perceived Quality dimension differ from students supported by financial aid schemes from those not supported by financial aid schemes?

1.4 Significance and academic contribution of this study

The significance of this research project is that the knowledge gained from this will contribute to developing an HEI-specific Strategic Brand Management framework for Institutions in South Africa and serve as a reference for other Emerging economies HEIs, especially where there are state-sponsored tuition schemes in place. This will inform the marketing team’s strategy on how to craft their Marketing plan and messages to ensure that they recruit the top students to attend their

institution and build the institution's reputation by adding these students to their Alumni, taking into consideration the impact which financial aid schemes have on the perceived quality of the product (education) that HEI's provides.

1.5 Definition of terms

1.5.1 Higher Education Institution

In South Africa, it includes Colleges / FET Colleges, Technical Universities and Universities.

1.5.2 Tertiary Education

Post-secondary education, i.e., education received after Grade 12 was completed.

1.5.3 Consumer (Customer)-based brand Equity

The differential effect that brand knowledge has on consumer response to the marketing of that brand. A brand has positive customer-based brand equity when consumers react more favourably to a product and the way it is marketed when it is identified than when it is not. (Keller, 2013)

1.6 Delimitations of the study

- The research study will be conducted at a Public University in South Africa.
- This study will not include FET and Private Tertiary Institutions.
- The Mental Health of the subjects were not considered in this study.

1.7 Assumptions

The assumptions of this research study are:

- Three hundred of the identified stakeholders will be deemed a sufficient sample group to confirm or disapprove the hypothesis.
- Respondents will be honest in their feedback.

- Respondents have interaction or had interaction and experience from a university on an academic and support service level and facilities and brand of a university.

2 LITERATURE REVIEW

2.1 Introduction

Relevant literature to the proposed research paper was identified with reference to the three main disciplines: Business Management, Marketing and Higher Education. More focused searches focussed on Strategic Brand Management with Brand equity as the main topic and Consumer Behaviour as a secondary topic. The dimensions, measurements, scales, and constructs were investigated for similarities, overlaps, and differences to deduct the applicability to the research question. Google Scholar, University libraries online research catalogues, Printed textbooks, and coursework were accessed. Keywords, titles, abstract contents, date of publishing, authors, DHET-acknowledged journals and number of citations were used as delimiters.

2.2 Theoretical grounding, the definition of topic and background discussion

The United Kingdom and the United States Universities make up nine out of the top ten ranking Universities in the World (QS Top Universities, 2019.) The well-known brands with premium fee structures, status, and perceived quality (PQ) measurements are very high globally. They are examples of HEIs that do not compete only in their own country but globally. Hazelkom (2015) suggested that globalisation and the availability of International University Rankings contributed to this highly competitive "market".

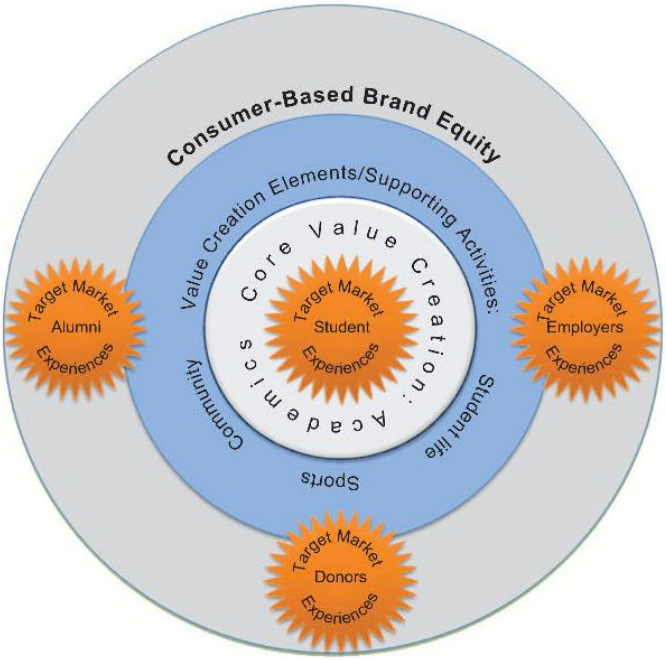
2.3 Brand Management in Higher Education Institutions.

Research shows that HEIs tend to adapt a Quasi-Brand Management and Brand equity applications similar to Service Industries. Bock et al. (2014) confirm that HEI brand identity building is becoming an essential tool in this competitive environment. Chapleo stated in 2011 that an increasing number of universities apply corporate marketing and brand management techniques to be able to compete in an ever-increasing competitive HEI landscape. Pinar et al. (2011) visualised the University

brand ecosystem to understand the complex marketing environment of HEIs, recognising that Students form the core when defining intended experiences and Brand building intentions, as they are the reason for the existence of HEIs. They, however, take into consideration the importance of the other stakeholders of these institutions to create value for the HEI and involved stakeholders.

figure 1: University Brand Ecosystem

(Pinar et al., 2011b)



These Brand Management methodologies include Brand Equity and specifically Consumer-based Brand Equity models (CBBE). CBBE is often applied to service industries known to be more customer-centric (K.L Keller, 2011). HEIs are and should be customer-centric due to the innate nature of Academic learning and teaching.

It is strongly suggested that universities focus on promoting and building their Brand Image to build a more substantial Brand Equity (Mourad et al., 2011). Again, another study reiterated that Brand Image has a more significant impact on HEI's Brand Equity than Brand Awareness (Dennis, Papagiannidis, Alamanos, & Bourlakis, 2016).

The term “Student-based Brand Equity (SBBE)” is also being used as more specific to the Higher Education environment in Higher Education Journals like the Journal of Marketing for Higher Education.

2.4 Brand Equity in Higher Education Institutions

2.4.1 University/HEI Brand Equity Dimensions

Conventional Brand Equity Models and theory provide a guideline to modern scholars to add to the Brand Management framework of HEIs by developing a similar model more appropriate for HEIs.

Aaker's Brand Equity Model is constructed from five Brand value components that influence the value of Brand Equity (Aaker & Equity, 1991). Pinar et al. (2014) model identify two categories, core and supporting dimensions:

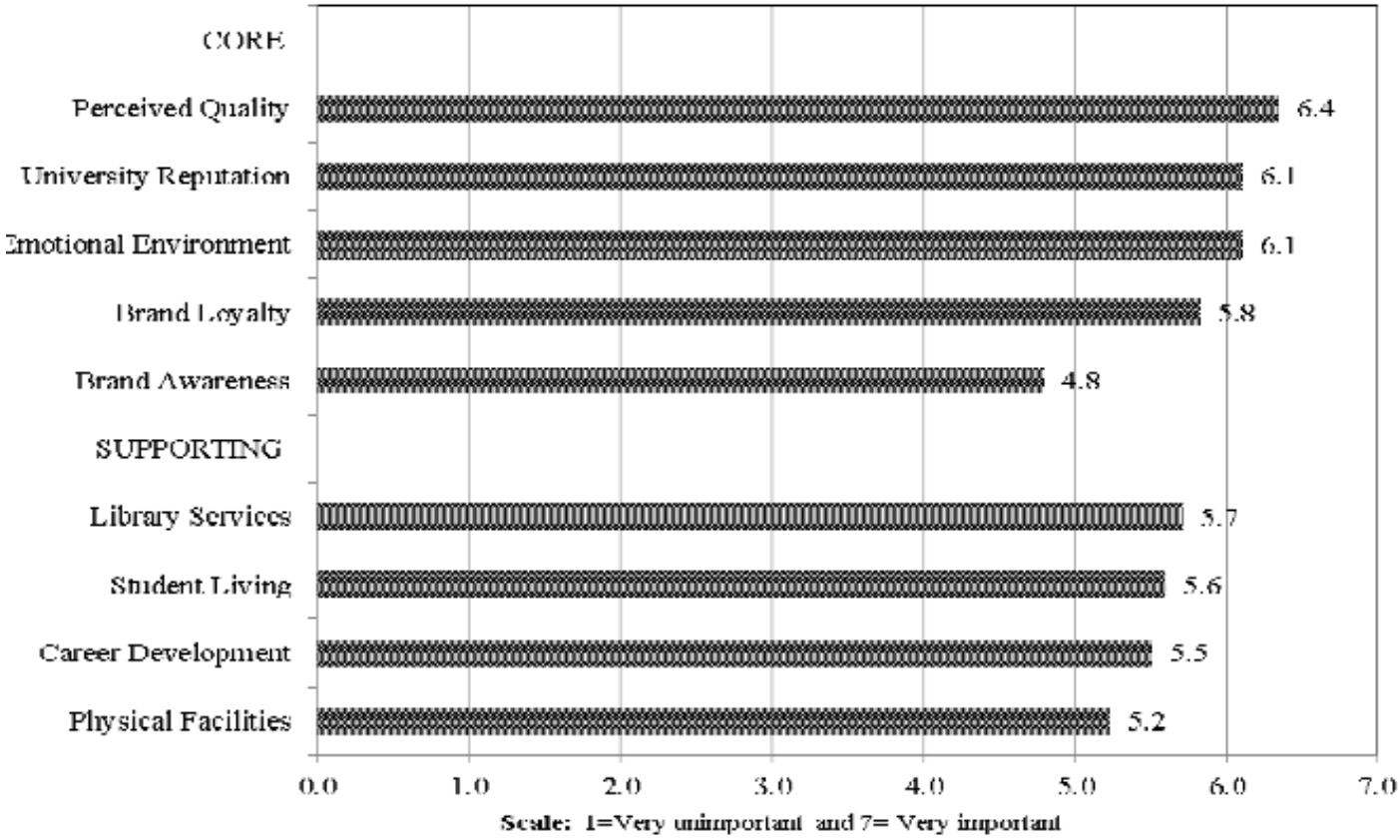
table 1: Brand Equity dimensions: Conventional vs HEI's

Conventional	**similarity**	**HEis**
Aaker		Pinar et al. (2014)
		Core dimensions
Perceived Quality	<->	Perceived Quality
Brand Loyalty	<->	Brand Loyalty
Brand Awareness	<->	Brand Awareness
Brand Association		University Reputation
***Other Propriety assets**		**Emotional Environment*
		**Supporting dimensions*
		**Library Service*
		**Student Living*
		**Career development*
		**Physical Facilities*

Pinar et al.'s (2014) empirical analysis of these dimensions contributes to identifying the highest-ranked, which is Perceived Quality, Brand Awareness ranks lower on the 7-point scale, confirming previous research.

figure 2: Importance of Core and Supportive University Brand Equity Dimensions

(Pinar et al., 2014)



2.5 Consumer-based Brand Equity in HEI's

2.5.1 Conceptualising, Measuring, and Managing CBBE

Keller (1993) provides a step-by-step process to Manage Brand Equity. He creates the strategic framework to equip managers to develop compelling brand strategies and for academics to study and analyse brand equity. He identifies two dimensions of Brand Knowledge, Brand Awareness and Brand Image.

figure 3: Keller's Consumer-based Brand Equity Model

(Keller, 1993)

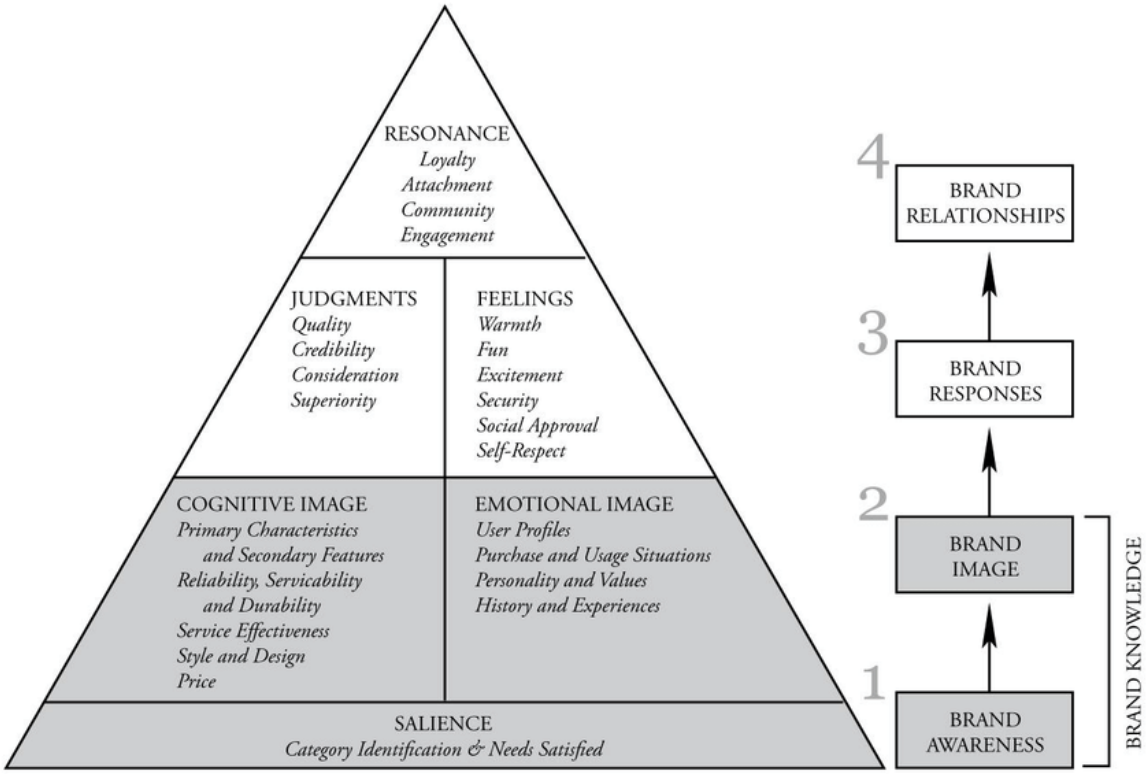


table 2: Measurement of Brand Knowledge Constructs Related to CBBE

(Keller, 2013)

Keller advises applying both direct and indirect approaches to measure brand Equity as the direct method measures the impact of brand knowledge on the consumer, and the indirect method can predict potential sources of CBBE. (Keller, 2013)

Measurement of Brand Knowledge Constructs Related to Customer-Based Brand Equity[a]

Construct	Measure(s)	Purpose of Measure(s)
Brand Awareness		
Recall	Correct identification of brand given product category or some other type of probe as cue	Capture "top-of-mind" accessibility of brand in memory
Recognition	Correct discrimination of brand as having been previously seen or heard	Capture potential retrievability or availability of brand in memory
Brand Image		
Characteristics of brand associations		
Type	Free association tasks, projective techniques, depth interviews	Provide insight into nature of brand associations
Favorability	Ratings of evaluations of associations	Assess key dimension producing differential consumer response
Strength	Ratings of beliefs of association	Assess key dimension producing differential consumer response
Relationships among brand associations		
Uniqueness	Compare characteristics of associations with those of competitors (indirect measure) Ask consumers what they consider to be the unique aspects of the brand (direct measure)	Provide insight into the extent to which brand associations are not shared with other brands; assess key dimension producing differential consumer response
Congruence	Compare patterns of associations across consumers (indirect measure) Ask consumers conditional expectations about associations (direct measure)	Provide insight into the extent to which brand associations are shared, affecting their favorability, strength, or uniqueness
Leverage	Compare characteristics of secondary associations with those for a primary brand association (indirect measure) Ask consumers directly what inferences they would make about the brand based on the primary brand association (direct measure)	Provide insight into the extent to which brand associations to a particular person, place, event, company, product class, etc. are linked to other associations, producing secondary associations for the brand

[a]This table describes the indirect approach of assessing potential sources of customer-based brand equity by measuring brand knowledge. The direct approach to measuring customer-based brand equity involves measuring the effects of brand knowledge on consumer response to marketing—for example, by conducting experiments in which one group of consumers respond to an element of the marketing mix when it is attributed to the brand, and another group of consumers respond to the same marketing mix element when it is attributed to a fictitiously named or unnamed version of the product or service.

2.5.2 Perceived Quality vs Price

Perceived quality as one of the primary constructs of CBBE is not just a Marketing concept but is also profoundly rooted in Business Management and Economics.

Quality has a positive relationship with higher prices, and usually, the consumer has higher involvement in the buying process (Solomon et al., 2016).

In HEI, acquiring a degree is usually a once-off investment; high consumer involvement and premium price are usually paid. The theory concludes that the Perceived Quality is high, and therefore the service delivery should be of high quality, during and after the acquiring of the service. The standard service should match the consumers' expectations.

If there are limitations on service delivery, buildings and other resources towards the education of the students due to overflow of students, the expectation of the consumer would not be met, which will result in unsatisfied consumers, which will lead to the lowering of the Perceived Quality dimension and inadvertently the CBBE of the University.

There is also the question that if the consumer procured something at a lower cost or got it for free, will the consumer's Perceived Quality be negatively affected. (Matlakala, M., Chiliya, N., Chuchu, T., & Ndoro, T., 2019)

The following hypotheses are derived from the available literature on this subject:

H_0: The tuition funding method has no mediating influence on the Perceived Quality dimension of Student Based Brand Equity.

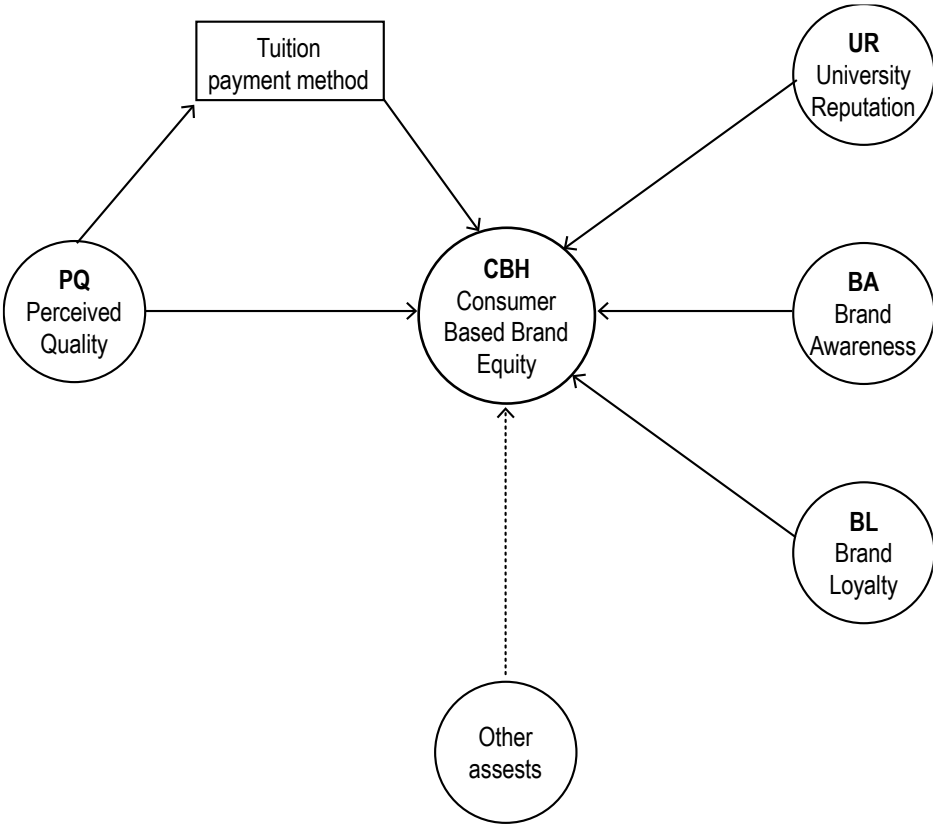
H_1: The tuition funding method has a mediating influence on the Perceived Quality dimension of Student Based Brand Equity.

H_{02}: The Perceived Quality dimension does not differ from students that receive Financial Aid (NSFAS) from those that fund their own studies.

H_2: The Perceived Quality dimension differs from students that receive Financial Aid (NSFAS) from those that fund their own studies.

2.6 The conceptual framework for the research project

figure 4: Conceptual Framework for proposal research



2.7 Conclusion of Literature Review

Brand Equity and Consumer-based Brand Equity has a wealth of academic literature since 1991. Aaker (1991) and Keller (1993) lay the foundation for more academic research and frameworks for Brand Managers and practitioners alike. Empirical measurements and scales are defined and indicate what and how CBBE is measured. Chapleo (2011) and Pinar et al. (2011) did contribute to the International HEIs Branding framework knowledge base. However, it is still a work in progress and a developing science due to the differentiating learning and teaching culture of these institutions and the different stakeholders involved, and the result is a unique and niche branding environment.

In Emerging Economies, there is less evidence of CBBE measurement and scholarly papers. Maroud et al. (2011) contributes to the HEI Brand Equity knowledge base and is of interest, especially to the South African context where

similarities occur, i.e., growing demand for tertiary education, Private Universities emerging and existing Public Universities struggling financially.

South Africa's history of Apartheid continued economic inequality, and the severe shortage of Tertiary Education Institutions and the implementation of Free Tertiary Education for qualifying students created a crisis for HEIs. To mediate this, we have to contribute to the Marketing and Branding Strategy frameworks. This can only be achieved by investigation and analytical research. Academic Institutions are known as the forerunners in research and problem solving, and if we do not apply CBBE strategies in Public HEIs in South Africa, privately-owned universities will fill the gap, and Public Universities will follow the same path as the collapse of Public Hospitals and Health Systems.

3 RESEARCH METHODOLOGY

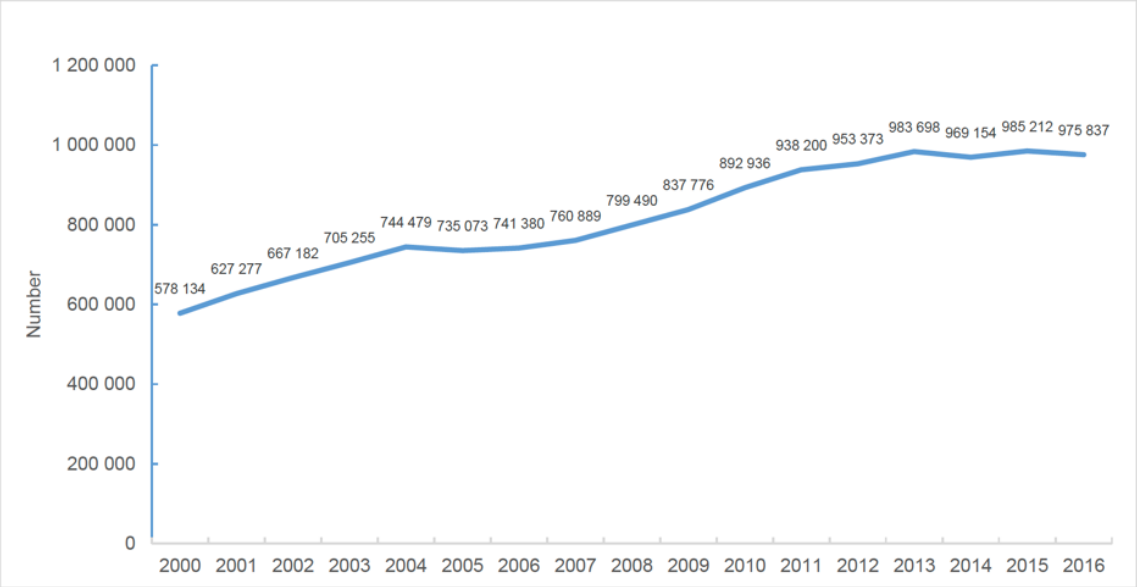
The literature review indicated the constructs and dimensions that the University Brand Equity consists of Pinar et al.'s (2014) study on University Brand Equity: An empirical investigation of its dimensions gave a clear guideline and are used as a basis of this research paper.

3.1 Population and sample

The study focuses on the population group of current university students, an influential group and rapidly increasing; in 2019, StatsSA reported that the percentage of enrolled students at universities and technikons increased by 22% (Statistics South Africa 2019).

figure 5: Trends in enrolment at universities and Technikons, 2000-2016

(Statistics South Africa, 2019)



Source: DHET (HEMIS)

3.1.1 Sample

A simple random sampling method was used to extract the sample of 933 current students at a South African public university and is a sufficient number for representing the broader student population as intended. The target group will be

young adults 18-24, males and females with at least a Secondary School education and were successful in their National Benchmark Test to gain access to a university. This method was used to derive an unbiased representative sample of the subset of the population identified.

3.1.2 Population

The research population is current students at a South African University. The technique being used is the probability sampling technique and not the non-probability sampling technique.

3.1.3 Probability Sampling method

The steps for the probability sampling method is as follows

- Identify an appropriate sampling.
- Determine sample size
- Decide on sampling technique.
- Make sure the sample is representative of the population.

Saunders et al. (2016) published the following guideline on sample sizes:

table 2: Sample sizes for different sizes of the target population

At a 95 per cent confidence level, the sample size of 384 should be sufficient as indicated below on a target population between 1 000 000 and 10 000 000.

(assuming data are collected from all cases in the sample)

	Margin of error			
Target population	5%	3%	2%	1%
50	44	48	49	50
100	79	91	96	99
150	108	132	141	148
200	132	168	185	196
250	151	203	226	244
300	168	234	267	291
400	196	291	343	384
500	217	340	414	475
750	254	440	571	696
1 000	278	516	706	906
2 000	322	696	1091	1655
5 000	357	879	1622	3288
10 000	370	964	1936	4899
100 000	383	1056	2345	8762
1 000 000	384	1066	2395	9513
10 000 000	384	1067	2400	9595

table 3: Profile of respondents

Description of respondent type	Purchase stage	Number sampled
Current Student at a South African University	Purchase	**384**

The researcher was able to collect **994** responses. The missing data were treated with the removal of 25 responses. The missing data were treated with an imputation method as these records had a low percentage (1%<) of missing data. Outliers were also removed to ensure that no underlying factors might skew the analysis**.** Nine hundred thirty-three responses were left after the data was treated, and other institutions students' answers were omitted as it was found that reputation and service experiences differed between the six institutions and caused outliers. Table 2's target size will be representative at ± 4% margin of error at a 95% confidence level on a population of 1 000 000 as seen in figure 5.

3.2 Measures and Administration

- Ethical clearance was obtained from the WITS ethics committee.
- The survey was conducted in English.
- A university provides analytical Software packages.
- The researcher covered the costs of this research.

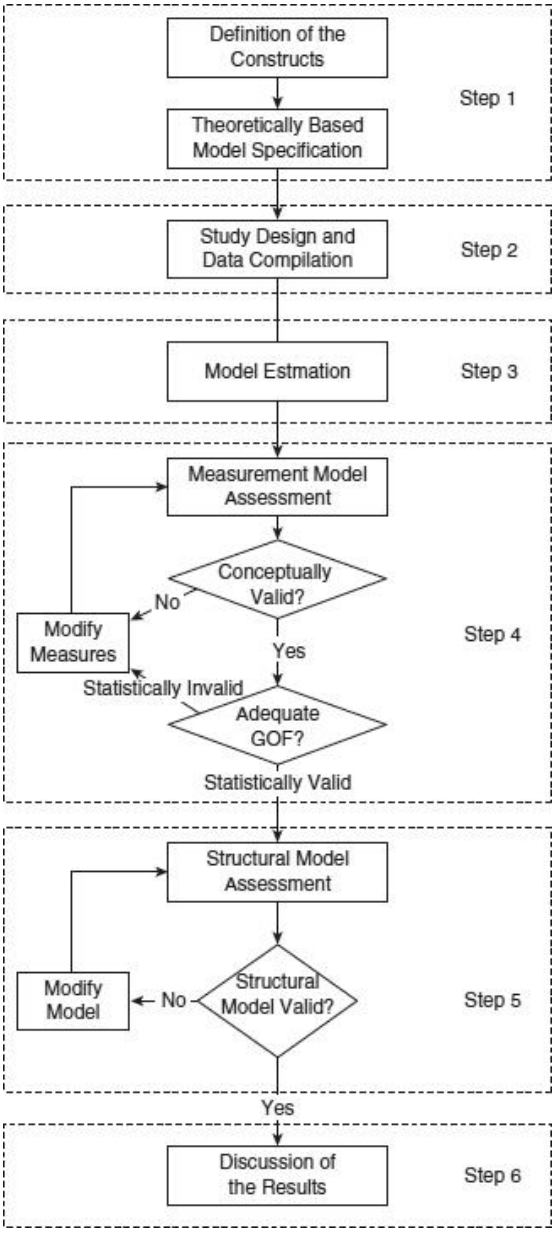
3.3 Research approach

Research is a science, and a structured and clear map need to be plotted from the onset. An epistemological positivism approach will be followed, applying the scientific method to understand social constructs. A hypothesis was generated, tested, and assessed. Data is quantified and analysed through deductive reasoning, and the relationship between theory and research becomes evident. This approach is applicable as it is acceptable practice in Business Research (Bryman & Bell, 2014).

The extensive process (below), illustrated by SAGE Research Methods in the Encyclopaedia of Research Modelling, is a clear directive for any researcher that follows an SEM approach.

figure 6: Steps and process followed in research

('Structural Equation Modelling, 2010)



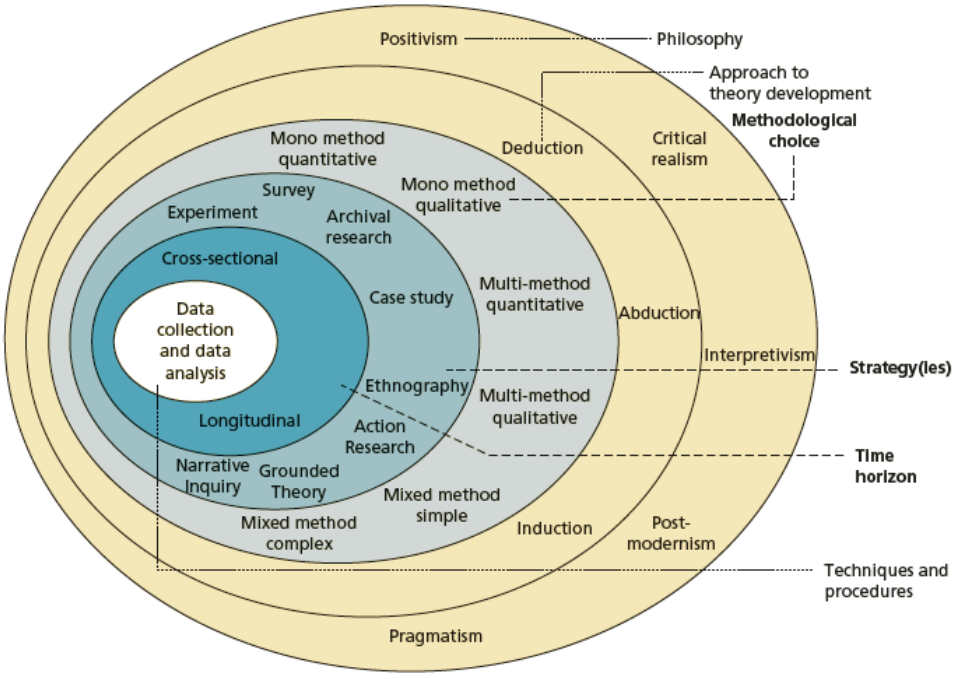
3.4 Research Design

A cross-sectional research design will be employed with more than one variable, which results in patterns of associations and relationships when this captured data is analysed. Primary data will be gathered via the survey, and the secondary data

is obtained from various research articles with the emphasis on the article of Pinar et al. (2014), on which this study is based. To formulate the Research design, the research onion of Saunders et al. (2016) explains the context and is a clear indication of differences in techniques, procedures, strategies and Philosophies. This research paper is based on the Philosophy being Positivism, the approach of theory development is deduction, and the methodological choice is the Mono method (quantitative research) utilising an online survey. It is grounded on a theory derived from multiple literature reviews, with specific reference to Pinar et al. (2014) model, on which this study was based.

figure 7: The research onion

(Saunders et al., 2009)



3.5 The research Instrument

3.5.1 Screening questions

Screening questions to qualify or disqualify the respondent is necessary to be able to make sure that:

- the respondent is older than eighteen years of age
- the respondent qualifies as a respondent type allowed in this study as specified in table 2.

3.5.2 Type of data that will be collected through questionnaire

- **Factual and demographic** – Age, gender, education level, part-time employed, student, funded or not.
- **Attitudes and opinions** – a question of true or false, how the respondent sees it from their viewpoint. They must take a little more time with these questions and answer questions like Perceived Quality and other factors stipulated in theory.
- **Behavioural and events** – are influenced by context, and respondents will answer questions like their purchase intent, past purchase behaviour, service experience. Their prediction on how they see the future (Saunders et al., 2009)

3.5.3 Validity of research instrument

Internal validity – questions must answer what you are measuring. Make sure questions are linked to the variables you are measuring. The type of questions was aligned with Pinar et al.'s (2014) study to ensure validity.

Content validity – essential questions will be included and will not be too extensive. The questionnaire will adequately cover the subject and not unnecessary questions outside the scope of this study.

Construct validity – the construct validity already determines this in the study by Pinar et al. (2014) being replicated. Similar questions would ensure construct validity. The construct will also be validated during the analysis by Exploratory Factor Analysis, Confirmatory Analysis and Structural Equation Modelling.

3.5.4 Measurement Scale

A 7-point importance scale (1=Very unimportant; 2=Unimportant; 3=Somewhat unimportant; 4=Neither unimportant nor important; 5=Somewhat important; 6=Important; 7=Very Important) were used to replicate Pinar et al.'s (2014) study.

An additional agreement 7-point Likert scale was also applied with 1= highly disagree to 7= highly agree.

3.6 Procedure for data collection

Self-completion electronic questionnaires via SurveyMonkey will be used. Verification will happen by limiting the electronic IP address from where the survey can be completed. These surveys have been checked and tested for responsiveness, logic and visually pleasing without being cramped or cluttered to enable mobile user friendly. This questionnaire has also been pilot tested before the official roll-out to a group of ten test subjects from the student population at various stages of their academic career. This ensured that the questions were straightforward and interpreted correctly.

3.7 Data analysis

Data analysis was done by coding the responses and analysing the researcher with the SPSS (Statistical Package for the Social Sciences) statistical package (IBM, 2018). SPSS is easy to understand and is specifically used in Social Sciences and Marketing. It also generates graphs and tables and can be exported in various formats (.pdf, .jpg, .csv, .xls) which also imports with ease into any MSOffice package. Data reduction methods were used to conduct an Exploratory Factor Analysis to confirm that the responses could be used as variables for the constructs as per theory.

Ωnyx, by Brandmaier, a graphical interface, was used to design the essential graphical representation of the models.

Confirmatory analysis (CFA) and Structural Equation Modelling (SEM) were applied, providing a broad and flexible framework for data analysis. R Studio with the installed Lavaan and Semplot packages were used to analyse the complex configuration. Analysis aligned to Pinar et al.'s (2014) study.

3.8 Validity and reliability of research design

This study uses tested and researched metrics and scales as the result of Pinar et al.'s (2014) study.

Cronbach's alpha will again test the Internal validity. It calculates the average of all possible split-half reliability coefficients. Pinar et al.'s (2014) Cronbach's alphas and reliability values were above the recommended level of .70, except for one construct, BA, at 0.676, as seen in table 10.

3.9 Limitations of the study

- Geographical limitation – study is done in South Africa and not in other African or any other Emerging economy countries.
- Demographic limitation – subjects in this study are current students and does not include Alumni, Staff and Prospective Students.
- Institutionalised limitation – a study done at one South African University and not at the other 26 South African Universities.
- Timeframe of this study equates to only six months in which the questionnaire was evaluated.
- Age limitation – no subjects under 18 years of age were considered.
- The emotional environment was not considered in this study.

3.10 Research instrument – Questionnaire

Below is the table with the construct, variable name, related question and the scales used in the questionnaire:

table 4: Constructs, variables and related questions and scales

Construct	Variable	Question	Scale
BA: **Brand Awareness**	BA1	06E- 50. The university is well-known	{1.000, Strongly Disagree}...
	BA2	06E- 51. The university's logo is instantly recognisable	{1.000, Strongly Disagree}...
	BA3	06E- 52. Top of mind of all universities in the country	{1.000, Strongly Disagree}...
BL: **Brand Loyalty**	BL2	06D- 47. The university's graduates are proud of the university	{1.000, Strongly Disagree}...
	BL3	06D- 48. The university's graduates recommend the university to others	{1.000, Strongly Disagree}...
	BL4	06D- 49. The university's graduates are loyal to the university	{1.000, Strongly Disagree}...
PQ: **Perceived quality** (of the services provided to students)	PQ2	06A- 26. The faculty are willing to help students	{1.000, Strongly Disagree}...
	PQ3	06A- 27. The faculty are accessible to students' questions and concerns	{1.000, Strongly Disagree}...
	PQ4	06A- 28. The faculty care about students' needs	{1.000, Strongly Disagree}...
	PQ5	06A- 29. The faculty is responsive to student needs	{1.000, Strongly Disagree}...

Construct	Variable	Question	Scale
	PQ6	06A- 30. The faculty are polite in responding to students	{1.000, Strongly Disagree}...
SUP: **Support Services** *Not a core dimension*	SUP2	04- 21.4 Library Services_	{1.000, Low}...
	SUP3	04- 21.7 Career Development	{1.000, Low}...
	SUP4	04- 21.9 Physical Facilities	{1.000, Low}...
UR: **University Reputation**	UR1	06B- 31. The university's graduates are employed before or soon after graduation	{1.000, Strongly Disagree}...
	UR4	06B- 34. The university's graduates receive reasonable job offers	{1.000, Strongly Disagree}...
	UR5	06B- 35. The university's graduates have successful careers	{1.000, Strongly Disagree}...
	UR8	06B- 38. Companies prefer recruiting the university's graduates	{1.000, Strongly Disagree}...
	UR10	06B- 40. The university's graduates are well-recognised in their professions	{1.000, Strongly Disagree}...
	UR11	06B- 41. The graduates of the university earn higher incomes than the industry average	{1.000, Strongly Disagree}...

Construct	Variable	Question	Scale
FFTQ: **Fee Free Tuition = quality negative**	FFTQ	20. Quality of Education Negatively influenced by FFTE	{1.000, Strongly Disagree}...
	FFTNEC	19. Fee-free Tertiary Education Necessity	{1.000, Strongly Disagree}...
FIN: **Tuition method of payment**	FINALL	Financial All included	{1, FinSelf}...
	FinSelf	Self-funding	{0, No}...
	FinAid	Financial Aid	{0, No}...
	Finotr	Finance Other	{0, No}...
Academic background	A_FY	01-6. First Year at University	None
	A_HLE	01-9. Highest Level of Education	{1, Busy}...
	A_LS	01-7. Lifelong Year of study	{1, First}...
	A_ST	01-3. Current Type of Student	{1, Full-time}...
Demographic	A_AGE	02-12. DOB	None
	A_G	02-13. Gender	{1, Male}...
Additional questions/variables that were eliminated due to low loadings or loadings on other constructs during EFA	Y_FUP	Future Buy	None
	X_UR7	06B- 37. The university's graduates have no trouble getting accepted to post-graduate programs	{1.000, Strongly Disagree}...
	X_SUP1	04-21.2 Student Living	{1.000, High}...

Construct	Variable	Question	Scale
	X_EE1	06C- 42. The university provides a supportive environment	{1.000, Strongly Disagree}...
	X_EE2	06C- 43. The university provides the students with a sense of community	{1.000, Strongly Disagree}...
	X_EE3	06C- 44. The faculty/staff-student interactions are empathetic	{1.000, Strongly Disagree}...
	X_EE4	06C- 45. Student relationships are characterised as warm and friendly	{1.000, Strongly Disagree}...
	X_PQ1	06A- 25. The university's faculty are knowledgeable in their fields	{1.000, Strongly Disagree}...
	X_BL1	06D- 46. Alumni are proud to have a degree from the university	{1.000, Strongly Disagree}...
	X_UR2	06B- 32. The university has a well-known academic reputation	{1.000, Strongly Disagree}...
	X_UR3	06B- 33. The university has high academic standards	{1.000, Strongly Disagree}...
	X_UR6	06B- 36. Based on the cost of tuition, the university offers an excellent educational value	{1.000, Strongly Disagree}...

Construct	Variable	Question	Scale
	X_UR9	06B- 39. The university offers well-known degree programs	{1.000, Strongly Disagree}...
	X_FIN1	10-1. Bursary and Merit Awards	{0, No}...
	X_Fu1	5-22. Future University 1st Choice	{0, Other}...
	X_Fu2	03-17. Willing to donate	{1, Strongly Disagree}...
	X_Fu3	03-16. Willing to pay more	{1, Strongly Disagree}...

4 PRESENTATION OF RESULTS

4.1 Introduction

This chapter introduces the collected data and the further analysis that was performed to conclude the hypotheses that were formed. The first overview of the data will be descriptive of nature and give an insight into the sample of the population group that took part in the research.

4.2 Descriptive statistics

Descriptive statistics are helpful in the discovery of the profile of the subjects in the study and the data attributes and does not indicate the interaction of the different variables.

4.2.1 Demographic and Academic profile

Demographic data and Academic data of the respondents were required. The respondents were predominantly female (60,1%). All of the current students, mostly in their first year of study (25,5%) and 77,3% of the total respondents were full-time students.

table 5: Descriptive statistics

Descriptive statistics	**N**	**%**
Demographic		
Gender		
Male	360	38,6%
Female	561	60,1%
Prefer not to say	12	1,3%
	952	**100%**
Age		

Descriptive statistics	N	%
18	26	3%
19	154	17%
20	128	14%
21	108	12%
22	94	10%
23	60	6%
24	38	4%
25	26	3%
26	30	3%
27	17	2%
28	25	3%
29	19	2%
> 30	208	22%
	933	**100%**
Academic background		
First-year at University		
2020	238	25,5%
2019	178	19,1%
2018	128	13,7%
2017	104	11,1%
2016	81	8,7%
2015	39	4,2%
2014	21	2,3%
2013	27	2,9%
2012	14	1,5%
2011	17	1,8%
2010	11	1,2%
< 2010	75	7,9%
	933	**100%**
Highest level of education		

Descriptive statistics	N	%
Currently studying towards Undergrad	484	51,9%
Undergraduate	210	22,5%
Graduate(Hon/PG Dip)	153	16,4%
Masters	84	9,0%
PhD	2	0,2%
	933	**100%**
Type of student		
Full-time	721	77,3%
Part-time	212	22,7%
	933	**100%**

table 6: Mean, median, standard deviation and kurtosis

	Respondents	Fee-Free Education negative	Fee-Free education necessary	Finance methods	Study fees paid by student or	Study fees paid by Financial Aid	Studies paid by other methods	First Year at University	Highest Level of Education	Lifelong Study	Type of Student	Age	Gender
N Valid	933	933	933	933	933	933	933	933	933	933	933	933	933
Missing	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean	485.53	3.72	4.81	1.65	.53	.18	.29	2016.6	1.83	2.83	1.23	25.56	1.63
Median	483	4	5	1	1	0	0	2018	1	2	1	22	2
Mode	1[a]	1	7	1	1	0	0	2020	1	1	1	19	2
Std. Deviation	278.72	2.08	1.87	.769	.499	.386	.453	4.55	1.017	1.797	.419	8.519	.510
Skewness	.012	.208	-.454	.687	-.123	1.649	.942	-2.411	.905	.866	1.304	1.85	-.23

4.3 Scale Validity

Exploratory Factor Analysis was performed, and the Maximum Likelihood extraction method was applied. Promax with Kaiser Normalization rotation was included in the

extraction, and only Eigenvalues higher than one was considered, and coefficient values lower than 0,4 were excluded.

4.3.1 Explanation of constructs

Constructs are based on the model by Pinar et al. (2014).

1. PQ > Perceived Quality
2. UR > University Reputation
3. BL > Brand Loyalty
4. BA > Brand Awareness
5. CBH> Consumer Based Brand Equity of HEI
6. FFTQ> Fee Free Tertiary Education negatively influence the quality of HEI's
7. FINALL> Categories of financing studies
    i. FinSelf> Studies paid by yourself, or by parents or study loans
    ii. FinAid> Studies paid by way of Financial Aid (NSFAS)

Additional variables were eliminated due to low loadings or load on other constructs during Confirmatory Factor Analysis.

4.3.2 Pattern matrix

The pattern matrix is loaded with four different Factors, all loading higher than 0,5, which aligns with the theory as shown in Figure 2. **The dynamic environment loaded on more than one construct and was discarded.** Support services were excluded as this is not a core value dimension.

table 7: Pattern Matrix

Pattern Matrix

	Factor		
1	2	3	4

PQ4	0,923			
PQ5	0,882			
PQ3	0,799			
PQ2	0,791			
PQ6	0,760			
UR4		0,972		
UR5		0,880		
UR1		0,729		
UR8		0,639		
UR11		0,618		
UR10		0,611		
*BL3			0,900	
*BL4			0,775	
*BL2			0,708	
*BA2				0,770
*BA1				0,628
*BA3				0,567

Extraction Method: Maximum Likelihood.
Rotation Method: Promax with Kaiser Normalization.

4.3.3 Total Variance explained

The total Variance is mainly explained by the Perceived Quality (37%) and the University Reputation (13%) dimension, as seen below.

table 8: Total Variance explained

Factors	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings [a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1 (PQ)	6,760	39,767	39,767	6,293	**37,019**	37,019	4,711
2 (UR)	2,533	14,897	54,664	2,250	**13,238**	50,257	4,993
3 (BL)	1,559	9,172	63,836	1,089	6,408	56,665	4,528
4 (BA)	1,070	6,292	**70,128**	0,724	4,259	**60,924**	2,995

4.3.4 Kaiser-Meyer-Olkin (KMO)

The KMO is higher than >.9, which were indicated by Kaiser as “marvellous” and indicates that factor analysis would yield reliable factors. (Kaiser & Rice, 1974).

table 9: KMO and Bartlett's Test of Sphericity

KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.908
Bartlett's Test of Sphericity Approx. Chi-Square	9132.155
df	136
Sig.	.000

4.3.5 Scale Reliability

The reliability scores are acceptable for four constructs and thus have discriminating power (Mansour, 2015). The BA construct is the only borderline, but for this paper, it may be used.

table 10: Reliability statistics

Reliability Statistics

Construct	No of items	Cronbach's Alpha	Level of reliability
BA: Brand Awareness	3	0,676	Slightly low
BL: Brand Loyalty	3	0,844	Reliable
UR: University Reputation	6	0,889	Reliable
PQ: Perceived Quality	5	0,919	Strong

4.4 Confirmatory Factor Analysis (CFA)

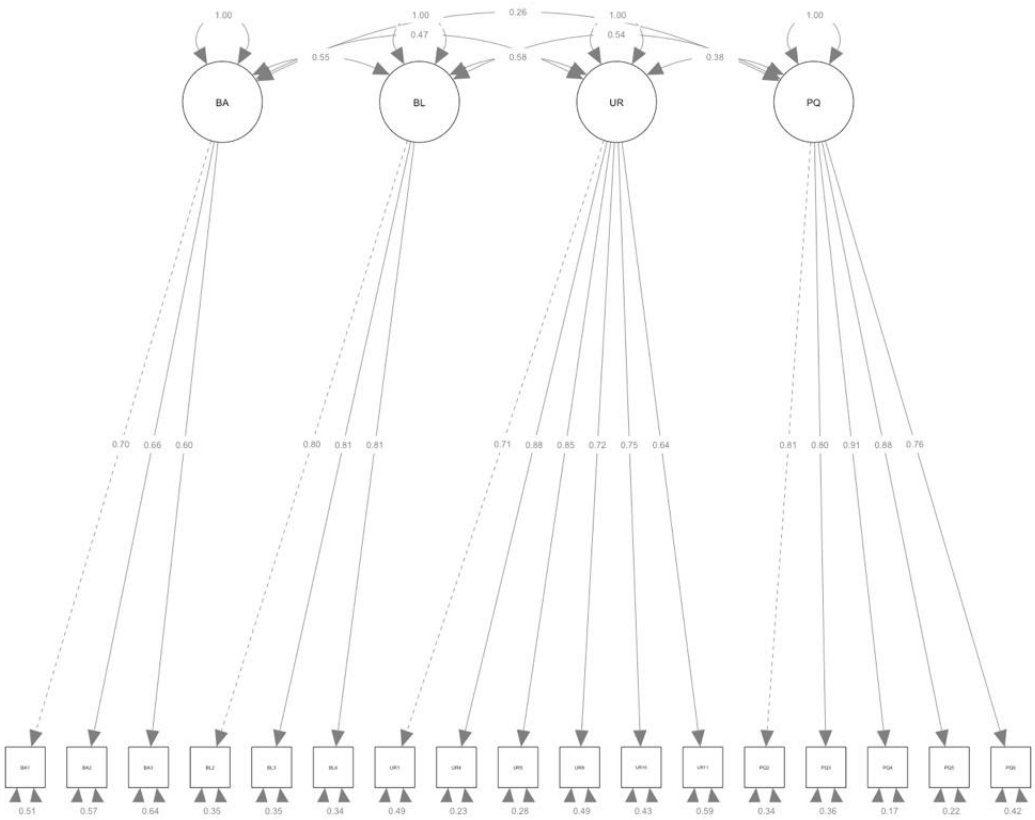
The Model Chi-Square equals 0 (p-value>0,05); this suggests that the model fits perfect. Both RMSEA and SRMR is smaller than the cut-off of <0,08, and values closer to 0 explains a good fit. TLI is borderline, but it is explained that this is a more significant sample, and TLI is usually indicated in smaller samples. CFI is

$\geq$ 0,95, thus overall, this model has a very good fit.

table 11: CFA results

Estimator	ML
Optimisation method	NLMINB
Number of free parameters	40
Number of observations	933
Model Test User Model:	
Test statistic	518.920
Degrees of freedom	113
P-value (Chi-square)	0.000
Model Test Baseline Model:	
Test statistic	9206.160
Degrees of freedom	136
P-value	0.000
User Model versus Baseline Model:	
Comparative Fit Index (CFI)	0.955
Tucker-Lewis Index (TLI)	0.946
P-value	0.000
RMSEA	0.062
90 Percent confidence interval - lower	0.057
90 Percent confidence interval - upper	0.068
P-value RMSEA <= 0.05	0.000
SRMR	0.040

Figure 8: The CFA model



4.5 Structural Equation Modelling (SEM)

table 12: SEM results

	Model 1 *(FFTQ)*	Model 2 *(with FinAid)*	Model 3 *(with Finself)*
Estimator	ML	ML	ML
Optimisation method	NLMINB	NLMINB	NLMINB
Number of free parameters	61	64	64
Number of observations	933	933	933
Model Test User Model:			
Test statistic	635.108	902.904	893.797
Degrees of freedom	129	145	145
P-value (Chi-square)	0.000	0.000	0.000
Model Test Baseline Model:			
Test statistic	9244.552	9290.724	9286.361

	Model 1 *(FFTQ)*	Model 2 *(with FinAid)*	Model 3 *(with Finself)*
Degrees of freedom	153	171	171
P-value	0.000	0.000	0.000
User Model versus Baseline Model:			
Comparative Fit Index (CFI)	0.944	0.917	0.918
Tucker-Lewis Index (TLI)	0.934	0.902	0.903
Root Mean Square Error of Approximation			
RMSEA	0.065	0.075	0.074
90 Percent confidence interval - lower	0.060	0.070	0.070
90 Percent confidence interval - upper	0.070	0.080	0.079
P-value RMSEA <= 0.05	0.000	0.000	0.000
SRMR	0.041	0.054	0.055

figure 9: SEM Model 1

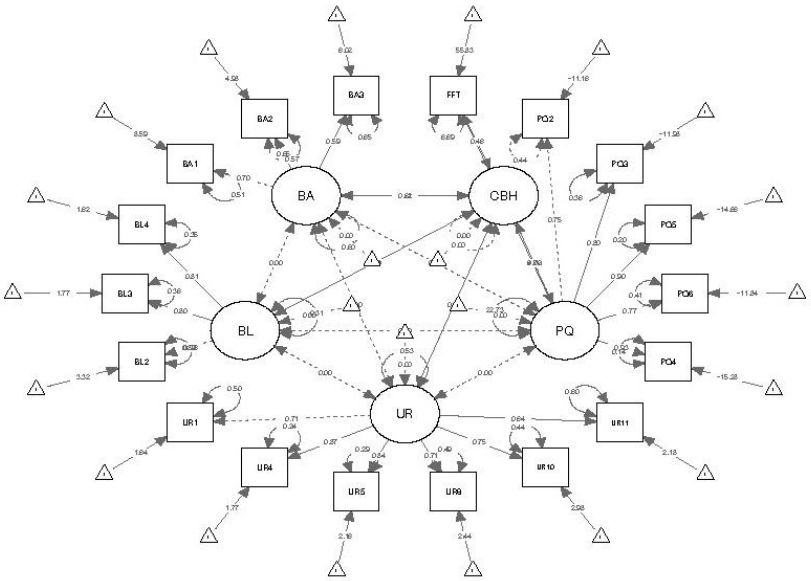


figure 10: SEM Model 2

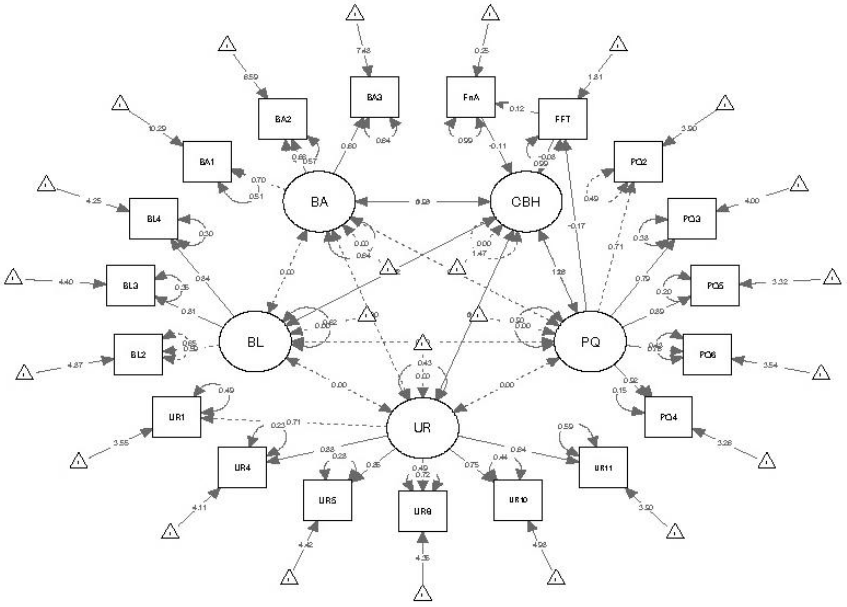
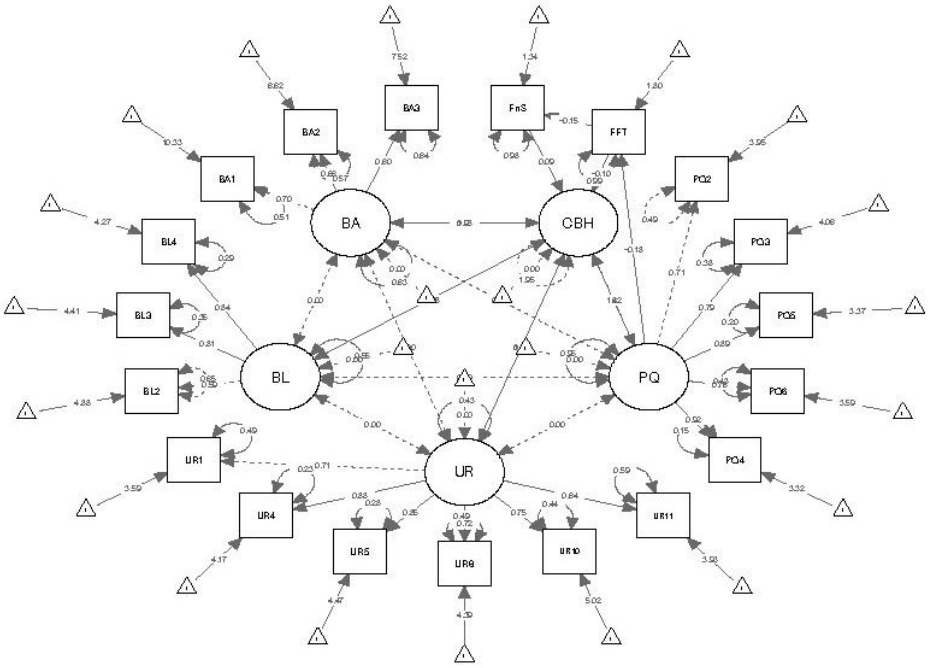


figure 11: SEM Model 3



4.6 Path Analysis (direct and indirect effects)

Using R's Lavaan package with naïve bootstrap, the standard errors were obtained

table 13: direct and indirect effects of the three models

	Estimate	Std.lv	Std.Err	z-value	P(>|z|)
Defined Parameters: **Model 1: FFTQ**					
SIE1:= b*c	0.003	0.044	0.002	1.398	0.162
TE:= SIE+a (1.616)	**0.102**	**1.660**	**0.042**	**2.450**	**0.014****
Defined Parameters: **Model 2: + FinAid**					
SIE1:= b*c	0.000	0.001	0.001	0.356	0.722
SIE2:= d*f	0.001	-0.002	0.001	-0.562	0.574
SIE3:= d*e*c	-0.000	-0.001	0.000	-0.210	0.833
TIE:=SIE1+SIE2+SIE3	-0.000	-0.001	0.002	-0.166	0.868
TE:= TIE+a	**-0.077**	**-0.232**	**0.046**	**-1.680**	**0.093**

	Estimate	Std.lv	Std.Err	z-value	P(>|z|)
Defined Parameters: **Model 3: + FinSelf**					
SIE1:= b*c	0.003	0.006	0.002	1.427	0.154
SIE2:= g*h	0.000	0.000	0.001	0.039	0.969
SIE3:= g*i*c	-0.000	-0.000	0.000	-0.160	0.873
TIE:=SIE1+SIE2+SIE3	0.003	0.006	0.002	1.341	0.180
TE:= TIE+a	**0.098**	**0.233**	**0.043**	**2.275**	**0.023****

* *SIE: specific indirect effect*

* *TIE: total indirect effect*

* *TE: total effect*

** *statistically significant (≤ 0.05)*

Modified conceptual models (figure 10) had to be constructed to explain the direct and indirect effects in table 13.

Three models had to be compiled to compare the differentiation in total effects of the original concept model. The first model is the baseline model, with the FFTQ measurable variable of the perception of different students on if Fee Free Tertiary Education will negatively influence the quality of HEI education.

Models two and three are similar in format with one differentiation variable in the model, either students funded by NSFAS (model 2) or students who pay for their studies (model3).

figure 12: Path Analysis, direct and indirect effects

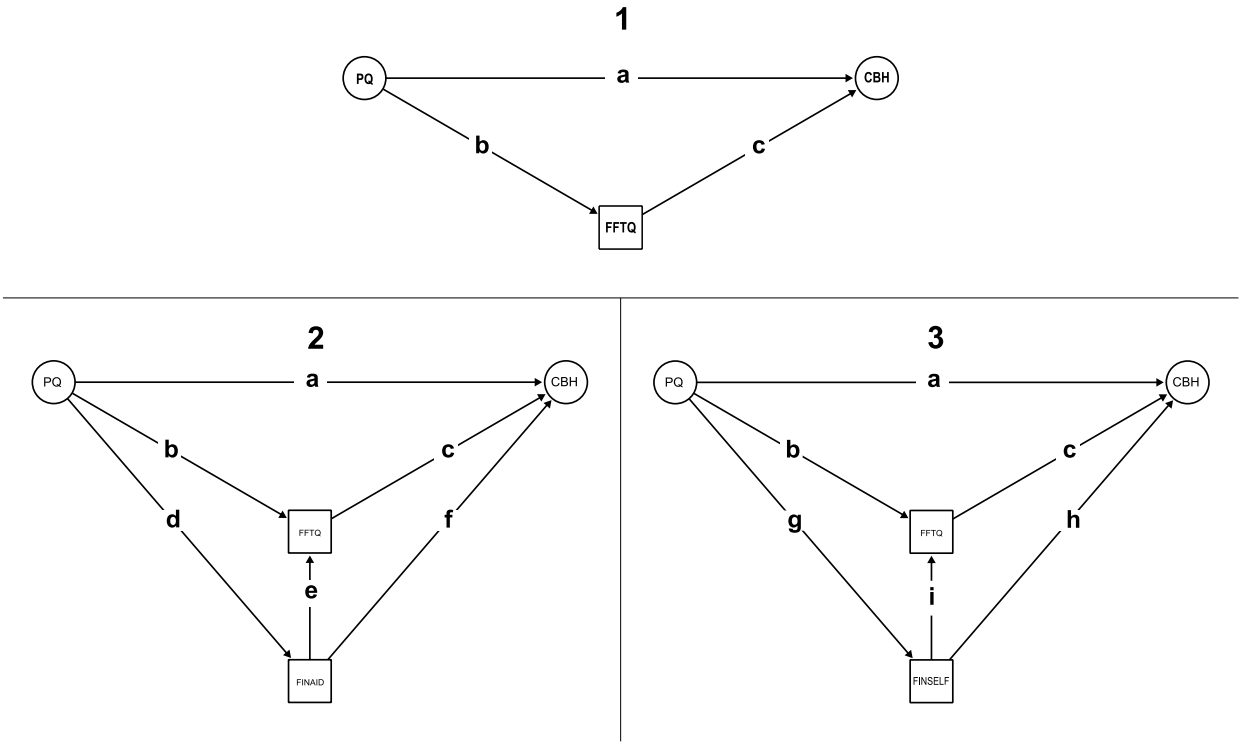
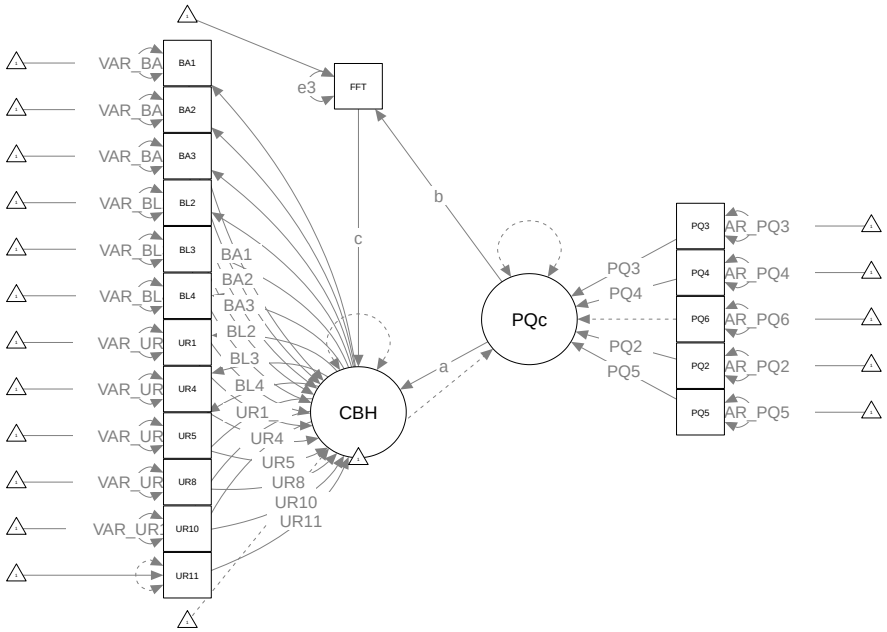


figure 13: Path Analysis, direct and indirect effects

Model 1 generated in R Studio



4.7 Summary of standardised results

The deduction from the above analysis confirms that the 0 Hypothesis (H_0) is rejected and that there is an indication that tuition funding has a partial mediating influence on the relationship between Perceived Quality and Consumer Based Brand Equity (H_1)

Model 1: FFTQ – Fee Free Tertiary Education has a negative influence on the quality of education of Higher Tertiary Education Institutions

Total effects = 1.66, Standard error = 0.042, z-value at 98% confidence and its weight is statistically significant (p-value >0.05) at 0.014.

Model 2: FinAid – Students that receive Financial Aid (National Student Financial Aid Scheme (NSFAS), 2005)). This variable is added to the model as a disturbance to the CBH factor. The analysis shows that the standardised result is -0.232

(-23%), Std error 0.046, z-value at -90% confidence levels, statistical insignificant at 0,093 ($\underline{\geq}$0,05) but must be evaluated in relation to model 3.

Model 3: FinSelf – Students that paid their tuition, either through study loans, their family or if they sacrifice their current or future income.

Total standardised effect = .233 (23%). Standard error is 0.043, z-value at 90% confidence levels, statistically significant at 0,023 (p-value >0.05).

Model 2 (std.lv= -.232) and 3(std.lv= .233) are direct negatively related, which supports hypothesis 2 (H_2) that the Perceived Quality dimension differs from self-funded students and those students that NSFAS funds.

5 DISCUSSION OF THE RESULTS

5.1 Introduction

This chapter extends on the results presented in the previous chapter and will shed light on the interpretation of the results. The respondent's reaction to the survey was very positive, and the sample size increased by approximately three times from the original goal and gave trustworthy insight into the research question and possibilities. The results also confirmed Pinar's statement that one change in the University's Brand Equity dimensions affects the whole University Brand Eco System (Pinar et al., 2011a).

5.2 Revisiting the Main Problem and Research Question

The main problem for Marketing Strategists in the South African Higher Education Institutions is very little substantiated data on if and how Fee Free Tertiary Education will affect the "market" of HEI's. Only if they have an indication, they will be able to strategise and channel their marketing efforts and marketing budgets in an informed manner to increase their Institutions' Brand Equity (CBBE) to be able to attract the highest-ranking students and secure donors that want to be associated with a success story, the identified problem that led to the initial question was the effect Fee Free Tertiary Education will have on the Perceived Quality dimension of Consumer Based Brand Equity of a University.

5.3 Discussion pertaining to general questions in the survey

The general questions were included in this research to understand the respondent and their environment and, in combination with the statistical analysis, will increase the validity of the interpretation.

97% of the respondents studied at one institution, and 75,6% indicated that the same institution is their number one choice. 43% indicated that they would return to the same institution for another degree or programme. This indicates future

procurement and a positive indication for the institution. The most preferred universities were the highest-ranked universities (QS Top Universities, 2019.)

On the question, if the students were prepared to pay more to enlist at their preferred HEI, 24% were the highest on neutral and second highest (18%) strongly disagreed with the notion of paying more. This is counter to previous studies and may be investigated further. Price is a well-studied lower-level attribute of Perceived Quality and should impact willingness to pay more (Zeithaml, 1988).

Donating time and or money to their current institution were met with a 24% neutral which sloped to 22,9% on somewhat agree. This shows the willingness to give back to their Alma mater and also is an indication of loyalty.

A point of concern is that 34,8% of the respondents agree that graduates are employed before or soon after graduation. This can be an indication that they are not sure they will be employed soon. 13,8% strongly agreed that they will or are employed soon.

52% indicated that the institutions' reputation is essential to their future employability.

Most of the respondents strongly agreed that Fee Free Tertiary education is necessary on 26,8% and only 6,5% opt for strongly disagreed.

5.4 Discussion pertaining to the Perceived Quality dimension questions

Following Pinar's 2014 (figure 2) research results on Perceived Quality's dimension of importance, this factor rated at 6.4 out of 7 (highly important). In this research, the respondents mean rating was 6.293 out of 7. Which support Pinar's 2011 theoretical framework.

5.5 Discussion pertaining to the University Reputation dimension

University Reputation dimensions scale of measurement is directly linked to the quality of Academic and External Performance, the direct product of a University

and the reason for using their services to enhance your employability (Alessandri, Yang & Kinsey, 2006).

The analysis has shown as a vital component of the Consumer Based Brand Equity of HEI's, explaining 13% of the total Variance.

5.6 Discussion pertaining to the Brand Awareness and Brand Loyalty dimensions

Brand Awareness loaded low on a 4.2 out of 7 Likert scales. Similar to figure 2, Pinar et al.'s 2014 research, where the same dimension loaded 4.6 on a 7-scale measure. Cronbach's Alpha reliability scale is slightly lower on 0.676 than the recommended 0.7. Brand Awareness and Brand Loyalty could have been left out in the final EFA. The Variance explained increased by 3% when left out, but due to the more positive loadings of Brand Loyalty on 6% variance and 0.844 Cronbach Alpha, both Brand Awareness and Brand Loyalty were included. This is based on the theory that these are two core dimensions of consumer-based Brand Equity.

5.7 Discussion pertaining to general questions on the mediating variables and Hypotheses 2

Three variances are of importance and explain the disturbance in Consumer Based Brand Equity factor. The most crucial factor is the perception by the students on the influence of Fee-Free Tertiary Education has on the Perceived Quality of an HEI. This has a direct influence and features in their everyday environment. This perception can either be negative or positive, and its usually dictated by their outlook, and they are either an Objectivist or Subjectivist, which is an outflow of their social reality (Rauthmann & Sherman, 2019).

The two opposite scenarios are the student who receives financial aid and those who have to carry the financial burden on their own. The most adversely affected group is the "Missing Middle", as they do not qualify for NSFAS support (parents or guardians income fall just outside the low-income bracket), but they do not have the financial means to pay for tertiary education. The two scenarios lead to the

variances of FinAid (NSFAS) and FinSelf (Self-funding) and reflect each social reality.

Analysis of the direct and total effect with relation to the baseline model and the two opposite inclined models provides evidence of a direct negative relationship between these two variances, which not only supports Hypothesis 2 (H_2) and rejects Hypothesis ($H0_2$) but also indicates that the student that receives Financial Aid would not have a negative inclination towards the Perceived Quality loss which impacts the Consumer Based Brand Equity of a Tertiary Education.

5.8 Discussion pertaining to Hypothesis 1

H_0: The tuition funding method has no mediating influence on the relationship between Perceived Quality and Brand Equity.

The above 0 Hypothesis is rejected, as shown by the results below.

H_1: The tuition funding method influences the relationship between Perceived Quality and Brand Equity.

Hypothesis 1 (H_1) is supported by the data derived from the SEM as in table 12: SEM results. The Chi-Square equals 0 (p-value>0,05), suggests that the models fit indices is good. Both RMSEA and SRMR is smaller than the cut-off of <0,08, and values closer to 0 explains a good fit. TLI is borderline, but it is explained that this is a more significant sample, and TLI is usually indicated in smaller samples. The CFI index is > 0,90, which is acceptable; thus, overall, these three models have a good fit.

Secondary to the results of the path analysis, the results of the direct effects and total effects in table 13 support H_1. The most significant total effect on the path a = 1.616, when FFTQ is added to the path of baseline model 1, the total effect increases from 0.05 (5%) to 1,666, which is a medium effect size.

figure 14: Summary of Cohen's effect sizes

(Aron & Aron, 2003)

Cohen's Effect Size Conventions for Mean Differences

Verbal Description	Effect Size (*d*)
Small	.20
Medium	.50
Large	.80

It is deducted that the opinion of students on Fee-Free Tertiary Education has a 5% total effect direct impact on CBBHEI. As soon as the FinSelf variable is added in model 3, the total effect changes to 0.233. In model 2, where FinAid is added, the total effect declines even more with -0.465 to -0.232, but we have to keep in mind that it is statistically insignificant at p-value=0.093, it does, however, confirm that the Perceived Quality dimension differ from students that receive Financial Aid (NSFAS) from those that fund their own studies

5.9 Conclusion

This chapter concludes the discussion on the results and interpretation of the analysis of the three SEM models and the three total effect path analysis models. Students in different tuition funding categories will have different perceptions of HEI's Consumer Based Brand Equity. It will be very informative to review new data on the same constructs to see if the total effects and the differences in the categories data moved closer or if the divide grew over time.

6 CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

The research report is concluded in this chapter with a few recommendations to counteract the negative perception that students may have towards Fee Free Tertiary Education and encourage Fee-paying students to return to their Alma Mater for a second or more degrees.

6.2 Recommendations

Quality research output is highly regarded in an Academic Environment, and this also increases the ranking of an HEI together with financial gain. Corporates will partner with innovative and trustworthy HEI's and the added media exposure will increase the Institutional Reputation, which in return increase the general public Perceived Quality dimension. A multi-stakeholder approach is recommended in Literature (Amaia Lafuente-Ruiz-de-Sabando et al., 2017)

Professors do have Consumer-Based brand Equity and can contribute towards the Institutions' CBBE. The manner in which they give instruction and classes leads to an affinity in the student community, which will create an Academic "Rock Star". This will increase the Perceived Quality of your University and the demand for your university's specific service offering.(*Jillapalli, Jillapalli, 2014*.)

Create emotional connections with your stakeholders through experiential events throughout their study, which will increase the co-producing value of CBBE (*Christodoulides, De Chernatony, 2009)*.

6.3 Conclusion

This research report attempted to contribute to the limited academic literature available on South African HEI's Brand Management. The method behind this breakdown of Brand Management constructs into smaller modules to facilitate understanding abstract concepts. To study and compare different analytic models

of the intangible, tangible, analytical and scientific statistical procedures provide us with a frame of reference to build on.

6.4 Suggestions for further research

The three leading suggestions include alumni (post-purchase phase), prospective students and employer organisations in a more extensive research project.

Alumni's perspective on Perceived Quality will indicate if they value their degree at the same level if they carried the cost or received Financial Aid in the form of NSFAS. This will be a long-term research project as the NSFAS programme is still in its infancy. The trends will only be detectable in at least.

Ten years from now, as most Alumni on the NSFAS programme is only graduating from 2020 onwards. It takes a few years to establish themselves in a professional position, and only then will the researchers be able to analyse and compare data outcomes. Currently, older alumni are mostly interpreting what is reflected in the media of the student unrest during the #FeesMustFall drive, which may cause biased responses. The intent to access new programmes, short learning courses, post-graduate degrees at the same institution will indicate the Perceived Quality dimension, given that most NSFAS funding is earmarked for undergraduate studies and the post-graduate programmes most probably will have to be paid from other sources, changing the situation of the current funded student and also change the trend of the observed statistics from this sample of the HEI stakeholder population, given that the Alumni is also the biggest stakeholder group in an HEI.

Prospective students will give the researcher a glance for future enhancements to their marketing strategies. There are a few complications to overcome in research involving prospective students, as most of them are under 18, and special consent will have to be obtained. The results in this sector of respondents will also be a good reflection of the true impact of Fee-Free Education and what possibilities it might have in the future for HEI’s marketing teams.

Employer Organisations are the end-user of the HEI “product," and the Perceived Quality dimension of an HEI will be reflected in which institutions graduates they

prefer to employ, which has a high correlation with a university's Reputation dimension.

To investigate and build on the knowledge base of Strategic Marketing for Higher Education Institutions in a South African context where quality education is in high demand with critical shortages in an already overburdened tertiary education environment. The only way forward for a top-rated institution is to maintain its viability and financial stability by obtaining and retaining the highest-ranking researchers, staff and especially top students. This is possible when Consumer Based Brand Equity is higher than other competing institutions; thus, by increasing Perceived Quality as a core value, you enhance the Brand Ecosystem of the entire institution.

6.5 Consistency matrix

table 14: Consistency matrix

The possible impact of free Tertiary education for Undergraduate Students has on the Brand Equity of South African public Higher Education Institutions.					
Aims of research	**Literature Review**	**Hypotheses or Propositions or Research questions**	**Source of data**	**Type of data**	**Analysis**
Impact of Fee-Free Tertiary education on the Brand Equity of South African public Higher Education Institutions	(*Christodoulides, De Chernatony, 2009)*	H0: The tuition funding method has no mediating influence on the relationship between Perceived Quality and Brand Equity. H1: The tuition funding method influences the relationship between Perceived Quality and Brand Equity.	Questionnaire	Ordinal	SEM> SPSS:

The possible impact of free Tertiary education for Undergraduate Students has on the Brand Equity of South African public Higher Education Institutions.					
Aims of research	**Literature Review**	**Hypotheses or Propositions or Research questions**	**Source of data**	**Type of data**	**Analysis**
Reputation has a positive relationship with Perceived Quality.	Plewa, C., Ho, J., Conduit, J., & Karpen, I. O. (2016). Reputation in higher education: A fuzzy-set analysis of resource configurations. Journal of Business Research, 69(8), 3087–3095. https://doi.org/10.1016/j.jbusres.2016.01.024 (Plewa et al., 2016) (Alessandri et al., 2006)	H0: The tuition funding method has no mediating influence on the relationship between Perceived Quality and Brand Equity. H1: The tuition funding method influences the relationship between Perceived Quality and Brand Equity.	Questionnaire	Ordinal	

The possible impact of free Tertiary education for Undergraduate Students has on the Brand Equity of South African public Higher Education Institutions.					
Aims of research	**Literature Review**	**Hypotheses or Propositions or Research questions**	**Source of data**	**Type of data**	**Analysis**
Brand Reputation is affected by Tuition Cost and thus influence the Re-/purchase Intention.	(Matlakala et al., 2019)	H02: The Perceived Quality dimension does not differ from students that receive Financial Aid (NSFAS) from those that fund their studies. H2: The Perceived Quality dimension differs from students that receive Financial Aid (NSFAS) from those that fund their studies.	Questionnaire	Ordinal	SEM> SPSS: Factor conjoint analysis

The possible impact of free Tertiary education for Undergraduate Students has on the Brand Equity of South African public Higher Education Institutions.					
Aims of research	**Literature Review**	**Hypotheses or Propositions or Research questions**	**Source of data**	**Type of data**	**Analysis**
Consumer-based Brand Equity Dimensions the Marketing Department of University must concentrate on, to be able to mediate the effect that this announcement had on the Brand Equity of the HEI	Erdem, T., & Swait, J. (2001). Brand Equity as a Signaling Phenomenon. *Journal of Consumer Psychology*, *7*(2), 131–157. Mourad, M., Ennew, C., & Kortam, W. (2011). Brand equity in higher education. *Marketing* Jillapalli, R. K., & Jillapalli, R. (2014). Do professors have customer-based brand equity? *Journal of Marketing for Higher Education*, (Jillapalli & Jillapalli, 2014)	Hypothesis **1**	Questionnaire	Ordinal	SEM> SPSS: Factor conjoint analysis

The possible impact of free Tertiary education for Undergraduate Students has on the Brand Equity of South African public Higher Education Institutions.					
Aims of research	**Literature Review**	**Hypotheses or Propositions or Research questions**	**Source of data**	**Type of data**	**Analysis**
Consumers-based Brand Equity Dimensions the Marketing Department of University must concentrate on, to be able to mediate the effect that this announcement had on the Brand Equity of the HEI	Erdem, T., & Swait, J. (2001). Brand Equity as a Signaling Phenomenon. *Journal of Consumer Psychology*, *7*(2), 131–157. Mourad, M., Ennew, C., & Kortam, W. (2011). Brand equity in higher education. *Marketing* Jillapalli, R. K., & Jillapalli, R. (2014). Do professors have customer-based brand equity? *Journal of Marketing for Higher Education*, (Jillapalli & Jillapalli, 2014)	Hypothesis **1**	Questionnaire		

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APPENDIX

A Actual Research Instrument

Likert Scale: 1=Very Unimportant; 2=Unimportant; 3=Somewhat unimportant; 4=Neither unimportant nor important; 5=Somewhat important; 6=Important; 7=Very Important)

Direct questions: Yes/No

Introduction: Reason for Survey and invitation

Anonymity / Confidentiality statement

Section 1: Screening question to proceed:
• Are you a registered student at a University? • <YES / NO>
• Which university are you attending currently? • <Dropdown with SA Universities>
• Which year was your first year? • <Dropdown with years>
• In which year of study are you currently registered? • <Dropdown with years>
• Which university do you want to attend in the future for further studies? • <Dropdown with SA Universities or “Other”>
• What level of Tertiary education do you have? o None o Undergraduate o Graduate o Masters o PhD
• Did you receive or are you receiving a (Please indicate with X) o bursary o grant or o financial aid?

Section 2: Demographic information
• Gender: M / F / Other
• Country of Birth: <Text field>
• Year of Birth: <Dropdown with years>
• Current City/Town of residence Postal Code <9999>

Section 3: Dimensions of University Brand Equity. Pinar et al. (2014)							
Please indicate how much agree or disagree with the following statements by circling one option in each line:	Very Unimportant	Unimportant	Somewhat unimportant	Neither unimportant	Somewhat important	Important	Very Important
1. I am willing to pay more in order to get into this institution	1	2	3	4	5	6	7
2. I am willing to donate towards this institution (monetary or time)	1	2	3	4	5	6	7
3. The reputation of this institution is vital for me and my future	1	2	3	4	5	6	7
4. I believe Free tertiary education is_	1	2	3	4	5	6	7
Please indicate how much agree or disagree with the following statements by circling one option in each line:	Yes	no	I do not know				
5. I believe that the universities quality of education will be negatively influenced if tertiary education is free:	Yes	no	I do not know				
Choose your personal top 3 Universities - Rate them 1-Best, 2-Good, 3-OK	A dropdown of universities, max choice 3						

6. What is the most crucial factor at Universities - please Rate 1-10 where importance = 1 is highest and 10 lowest	1. University Reputation 2. Student Living 3. Quality 4. Library Services 5. Emotional Environment 6. Brand Loyalty 7. Career Development 8. Brand Awareness 9. Physical Facilities 10. Value for money	

Section 4:

I believe that the universities quality of education and service will be negatively influenced if tertiary education is free: Yes / No / Do not know

Section 5:							
Measures of Core and Supporting Value-Creation Constructs	1=Very Unimportant; 2=Unimportant; 3=Somewhat unimportant; 4=Neither important nor important; 5=Somewhat important; 6=Important; 7=Very Important						
	1	2	3	4	5	6	7
PQ- Core - Perceived Quality - Faculty							
1. The university's faculty are knowledgeable in their fields.							
2. The faculty are willing to help students.							

3. The faculty are accessible for students' questions and concerns.							
4. The faculty care about students' needs							
5. The faculty is responsive to student needs.							
6. The faculty are polite in responding to students.							
UR-Core - University Reputation: Overall Brand Equity							
7. The university's graduates are employed before or soon after graduation.							
8. The university has a well-known academic reputation.							
9. The university has high academic standards.							
10. The university's graduates receive reasonable job offers.							
11. The university's graduates have successful careers.							
12. Based on the cost of tuition, the university offers an excellent educational value.							
13. The university's graduates have no trouble getting accepted to post-graduate programs.							
14. Companies prefer recruiting the university's graduates.							
15. The university offers well-known degree programs.							
16. The university's graduates are well-recognised in their professions.							
17. The graduates of the university earn higher incomes than the industry average.							
EE- Core - Emotional Environment							

18. The university provides a supportive environment.							
19. The university provides the students with a sense of community.							
20. The faculty/staff-student interactions are empathetic.							
21. Student relationships are characterised as warm and friendly.							
BL-Core - Brand Loyalty							
22. Its students are proud to have other people know that they will have a degree from the university.							
23. The university's graduates are proud of the university.							
24. The university's graduates recommend the university to others.							
25. The university's graduates are loyal to the university.							
BA-Core - Brand Awareness							
26. The university is well-known.							
27. The university's logo is instantly recognisable.							
28. The university is among the first to come to mind when one thinks of all universities in South Africa.							

The questionnaire of Pinar et al. (2014) was adapted to the South African context.

B Email to Respondents

Dear respondent,

Thank you for considering completing this academic research questionnaire.

I am a post-graduate student at Wits Business School, studying towards my Masters in Management with a specialisation in strategic marketing.

The research dissertation theme is the impact of "free tertiary education" on the Perceived Quality Dimension of Student-Based Brand Equity of a South African Public Higher Education Institution.

Your responses are considered highly confidential and are strictly for academic purposes. Your identity is protected as your responses are made anonymous.

As a researcher, it is essential that you feel comfortable answering these questions and that your answers are your personal choices, without any bias and external interference.

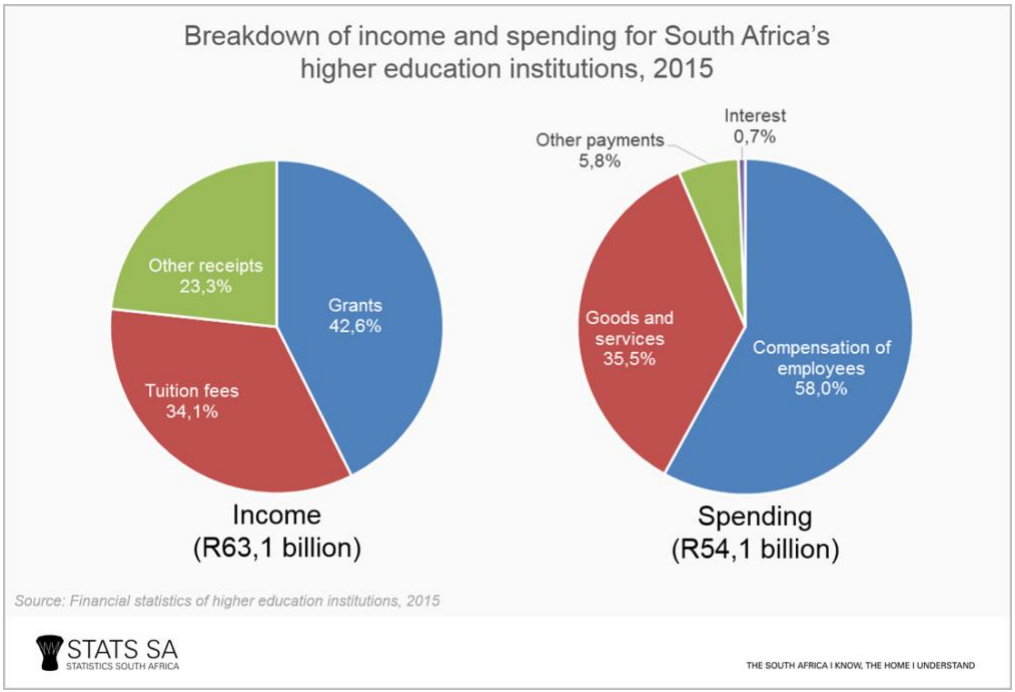
Once again, thank you for your time and effort. It is highly appreciated.

For any additional information, you can contact my Academic Supervisor or me.

Thank you in advance
Elmada Kemp – madikemp@gmail.com

Mr Laurence Beder – Laurence.Beder@wits.ac.za
Academic Supervisor

C Breakdown of income and expenditure in HEIs in 2015



D State budgets for the university sector

Table 1: State budgets for the university sector

Budget category	Budget totals for the university sector				Increase in budget from previous financial year			
	2015/16 (R'000)	2016/17 (R'000)	2017/18 (R'000)	2018/19 (R'000)	2015/16	2016/17	2017/18	2018/19
1 Block grants for universities	**20 538 361**	**21 678 098**	**25 322 874**	**26 915 052**	**5.0%**	**5.5%**	**16.8%**	**6.3%**
1.1 Teaching inputs	13 141 519	13 753 540	16 220 201	17 252 089	3.4%	4.7%	17.9%	6.4%
1.2 Institutional factors	1 170 372	1 225 710	1 445 538	1 537 499	6.1%	4.7%	17.9%	6.4%
1.3 Actual teaching outputs	3 213 301	3 512 017	4 310 654	4 584 887	8.0%	9.3%	22.7%	6.4%
1.4 Actual research outputs	3 013 169	3 186 831	3 346 481	3 540 577	8.8%	5.8%	5.0%	5.8%
2 Earmarked grants for universities	**5 666 037**	**6 246 374**	**8 701 418**	**9 193 017**	**21.0%**	**10.2%**	**39.3%**	**5.6%**
2.1 Infrastructure & output efficiencies	2 301 200	2 422 013	2 541 903	2 688 063	4.6%	5.3%	5.0%	5.8%
2.2 Two new universities								
Capital funds	1 000 000	974 736	978 482	1 000 542	100.0%	-2.5%	0.4%	2.3%
Operational funds	201 014	290 429	360 736	416 489	26.4%	44.5%	24.2%	15.5%
NIHE Northern Cape Pipeline Students	12 000	10 000	6 500	0		-16.7%	-35.0%	-100.0%
2.3 Foundation provision	304 470	319 956	335 794	355 270	28.7%	5.1%	5.0%	5.8%
2.4 Teaching Development	616 900	649 596	510 000	0	1.2%	5.3%	-21.5%	-100.0%
2.5 Research Development	199 000	209 547	165 000	0	6.2%	5.3%	-21.3%	-100.0%
2.6 University Capacity Development			225 000	945 000				320.0%
2.7 Clinical Training of Health Professionals	429 635	452 406	475 026	502 578	4.6%	5.3%	5.0%	5.8%
2.8 HDI Development Grant (8 universities)	410 743	433 532	454 992	481 382		5.5%	5.0%	5.8%
2.9 Veterinary Sciences	141 764	149 250	156 638	165 723	4.1%	5.3%	5.0%	5.8%
2.10 MBChB students		30 700	27 900	16 700			-9.1%	-40.1%
2.11 Interest & redemption on historic loans	4 447	4 209	3 647	3 282	-34.2%	-5.4%	-13.4%	-10.0%
2.12 Zero percent student fee increase		300 000	0	0				
2.13 Merger multi-campuses	44 864	0	0	0	-52.6%	-100.0%		
2.14 Gap funding grant for poor & missing middle student fees[1]		0	2 459 800	2 617 988				6.4%
3 Grants to Institutions	**4 123 807**	**8 924 157**	**9 921 058**	**10 395 762**	**5.2%**	**116.4%**	**11.2%**	**4.8%**
3.1 NSFAS - Cape Town[2]	4 094 978	6 350 811	9 889 209	10 362 081	4.6%	55.1%	55.7%	4.8%
NSFAS - Cape Town Historic Debt Relief		2 543 000						
3.2 Institute for Human and Social Sciences	23 829	25 081	26 323	27 837		5.3%	5.0%	5.8%
3.3 African Institute for Mathematical Studies	5 000	5 265	5 526	5 844	4.2%	5.3%	5.0%	5.8%
4 Sector oversight	**10 000**	**10 000**	**10 500**	**11 109**		0.0%	5.0%	5.8%
4.1 Sector Planning, Monitoring, Evaluation & Support	10 000	10 000	10 500	11 109		0.0%	5.0%	5.8%
TOTAL	**30 338 205**	**36 858 629**	**43 955 850**	**46 514 940**	**8.1%**	**21.5%**	**19.3%**	**5.8%**

Note 1: The amount of R2 459,800 million in 2017/18 for the gap funding grant for poor and missing middle student fees will be funded through reprioritisation with the PSET

Note 2: The amount of R2 369,924 million in 2017/18 for unfunded univeristy students from 2016 academic year will be funded through reprioritisation with the PSET system