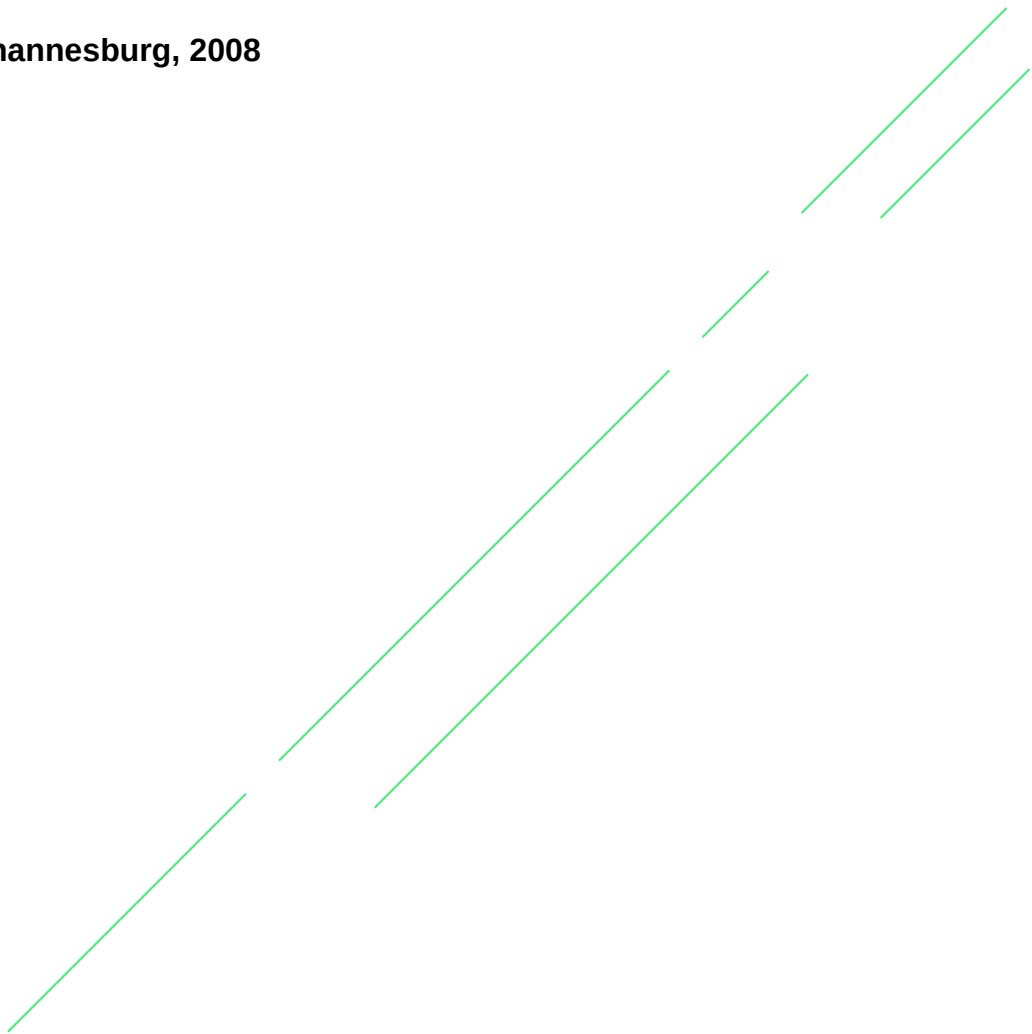


***Consumer preferences for private
hospital facilities in South Africa***

Neil Browner

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

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ABSTRACT

The South African private healthcare industry has grown since the advent of a full democracy in South Africa (UNDP, 2007) and research into the end consumer choice preferences for private hospital facilities has yielded useful insights.

This study looks at the end consumer choice preferences of the private hospital industry in South Africa. It is designed to aid private hospital facility managers with regards to decision making around strategic, marketing and expansionary decisions. Operational factors were intentionally excluded from this study, being outside the scope of the research.

The research problem explores both tangible and intangible attributes that contribute to consumer decision making in those using purely private hospital facilities, on a walk-in, non-emergency basis. These attributes were identified from the literature review and comprised facility quality, location, price, access from the tangible side; and staff competence, staff attitude and brand recognition from an intangible perspective.

Data was collected by means of a snowball, online questionnaire, which was designed on the basis of choice-based conjoint analysis. There were a total of 132 respondents of which 93 had valid responses. The questionnaire was first subjected to a qualitative pilot phase in which personal interviews were conducted by the researcher in order to screen and validate the questionnaire. Respondent's demographics were widespread across most demographic groups recorded. Due to limited responses from certain demographic groups, however, this research has limited applicability for the lower income brackets, the elderly and those without medical insurance cover. Data was then analysed using applicable software, interpreted and placed into context.

Key findings from this research are that tangible and intangible attributes account for an almost equal proportion of the decision making criteria, with

staff competence, facility quality and location having the highest importance scores overall. Lowest importance scores for decision making attributes were for staff attitude and access, with price and brand ranking in the middle.

Different demographic groups had statistically significant differences in attribute importances, namely across age groups with regards to staff competency, brand and price; across gender groups with regards to staff competency facilities and price; income brackets across staff competency, location and brand; and finally across those with dependants versus those without across staff competency and brand. This means that private hospital facility managers may have to tailor their strategic, marketing and expansionary plans according to their target markets.

The underlying key finding that emerged from this research study was that, private hospital facility manager's top priority should be making sure that the end consumer has absolute confidence in the hospital staff, followed by having high quality facilities and assuring location is taken into account when formulating strategic, marketing and expansionary strategies. If resources are limited they should be first channelled in these areas, although the other attributes examined in this research study do play a role and may be differentiating factors should all else be equal.

DECLARATION

I, Neil Browner, 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 Business Administration in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Neil Browner

Signed at the University of the Witwatersrand

On the 2nd Day of August 2008

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CHAPTER 1: INTRODUCTION

1.1. Purpose of Study

The purpose of the study is to analyse consumer preferences that contribute to the decision making process when deciding between differing private healthcare services. This research should prove of benefit to private health management in South Africa by highlighting specific areas where resources can be concentrated to maximize benefit to the consumer's perceived value.

Furthermore, this research should be especially useful to the private health managers by providing insights that may be used in the development of marketing plans and strategic decision making.

1.2. CONTEXT OF THE STUDY

The South African healthcare industry has been heavily influenced by the changing nature of the country itself since electing its' first fully democratic government in 1994 (CountryStudies, 2008). This ended an era consisting of multiple generations of the old apartheid system and opened up many opportunities to the previously disadvantaged.

This has a profound effect on the nature of the healthcare industry in South Africa, with changing demographics, geographical spread of wealth and customer relations becoming ever more important in a highly competitive environment. The added burden of adequately looking after a population estimated in 2007 as being approximately 44 million South Africans (GlobalHealthcare.org, 2008), or the estimate in 2005 of approximately 48 million (UNDP, 2007). This was as opposed to the previous attitude of

focussing predominately on the minority white populace has placed added burdens on both the private and public healthcare institutions.

Whilst the public healthcare institutions undoubtedly play an important role in the health of the nation (SouthAfrica.info, 2007), this study will focus on the burgeoning private healthcare industry and attempt to assist health managers in establishing and focussing on points of differentiation that are important to the consumer when choosing the healthcare institution that they choose to take their business to.

The focus of this study is all the more important since government incentives such as GEMS (Government Employee Medical Scheme) (RSA Department of Health, 2008) offer the option of using private healthcare services to an ever expanding consumer base. This, along with the growth in the South African economy since the late 1990's (UNDP, 2007), indicates that we can expect the consumer base of private healthcare institutions to expand. Health managers, therefore, need to have an understanding of the consumer choice preferences in order to compete in the future of healthcare in South Africa.

With the HIV/AIDS concerns currently in evidence in Sub-Saharan Africa (RSA Department of Health, 2008), coupled with the declining population statistics (GlobalHealthcare.org, 2008), it is more imperative than ever that we ensure that limited resources are properly allocated in both the public and private sector to provide the best quality of service to the patients and all involved.

1.3. PROBLEM STATEMENT

1.3.1. MAIN PROBLEM

The main problem is to analyse consumer preferences in the choice of private hospital institutions in South Africa, both tangible and intangible attributes that contribute to consumer decision making will be explored.

1.3.2. SUB-PROBLEMS

The first sub-problem is defining the tangible attributes that contribute to consumer decision making.

The second sub-problem is defining the intangible attributes that contribute to consumer decision making.

1.4. SIGNIFICANCE OF THE STUDY

The study fills a gap in current knowledge by giving South African healthcare managers a glimpse into the drivers behind choices made by the unique South African consumer. Whilst similar studies have been made overseas, both in developed and developing countries, South Africa's unique heritage and diverse array of cultures allow for specific insights which may be garnered from this research. The results may allow health managers to focus their efforts on specific areas, and at the very least should provide valuable insights into private healthcare user needs and preferences.

Whilst there are many gaps in our understanding of the South African healthcare environment, this study provides a simplistic base on which future research may be done.

The study will provide guidance to the private healthcare institutions on potential service strong points and weaknesses, thereby allowing the efficient

and most effective allocation of resources. This is especially important in the private sector due to the accountability to shareholders and profit margins, but may also help healthcare administrators get a clear idea of where resources and funding should be used to gain maximum results.

The study will also allow an objective interpretation of patients' subjective viewpoints and give the healthcare users a voice in future healthcare service attitudes and protocols. The medical aid schemes may also find the study of interest as in the vast majority of the cases the end consumer is the same for both institutions, and the medical scheme may even dictate to the end consumer the choice of private healthcare institution.

Cotter et al (2003) also provide evidence that enhanced patient satisfaction is closely correlated to enhanced organizational performance, thus lending further interest in a study of this nature.

This study will also provide guidance to private healthcare managers in offering insights on where to focus resources and training in an effort to attract and increase the consumer base for their facilities. The insights gained into consumer preferences will allow a greater understanding of consumer behaviour and therefore allow more focused management strategies to maximize a growing consumer base. This study may therefore offer insights and guidance to healthcare organizations and managers for a wide array of areas including strategy, marketing and human resources.

Critically, this study is focussed on areas that may assist private hospital managers in strategic, marketing and expansionary decisions, and therefore will not look at areas that involve cost-cutting or operations.

1.5. DELIMITATIONS AND LIMITATIONS

1.5.1. DELIMITATIONS

Clearly this research must be confined within certain boundaries or it will soon become overwhelming. As such the following delimitations will be adhered to:

- The study will be confined only to those consumers that choose private healthcare institutions to provide their healthcare needs. This does not delimit the study in any way to consumers who use medical aid schemes to finance this, but rather focuses on all consumers, regardless of financial considerations.
- Only South African private hospital institutions will be used for the purposes of this research.
- This research will be limited to Gauteng private hospital facilities, as these should be indicative of the preferences nationwide.
- Only South African permanent residents will be included in this analysis to eliminate any external influence in the results.
- The study will not be confined to any specific demographics, yet the sampling method may predispose to certain demographic groups and the results appropriately interpreted to reflect this.
- The study will be confined to those respondents that exclusively use private hospital facilities, thereby eliminating any possible complications from those consumers that use a combination of public and private institutions.

- The study will be based upon regular, non-emergency visits by the end consumer to private hospital institutions, as it is accepted that in emergencies or times of severe stress there is not always a rational choice process.
- The study will revolve around the choice factors of the walk in end consumers themselves and therefore will not take into consideration the referral or direct specialist consults. Whilst the author accepts these as an important choice factor, it is often predominantly one of the referring doctor and not the end consumer themselves. For this purposes the study will be delimited by asking the respondent to assume their regular healthcare provider is away.

1.5.2. LIMITATIONS

This study focuses on the private healthcare industry in the South African setting and as such the research will have certain limitations:

- This study may not apply to all settings, especially advanced first world settings.
- Care must be taken in interpreting the results of this study due to South Africa's highly varied demographics.
- It would only apply to the healthcare setting in this country, although appropriate inferences may be able to be made between this and other services that spread across private sector service industries.
- There is a large added strain on healthcare resources in Sub-Saharan Africa and as such this research may reflect this and not be appropriate in areas where these added concerns do not exist.

- The study is only as good as the methodology and will only reveal relative importance between highlighted attributes. As such a comprehensive literature review and attribute definition is essential. Any important attributes that are left out of the study will not reflect in the results and therefore be left out of the interpretation.
- The sampling methodology does not allow for a fully representative sample, and care must be taken when analysing and using the results of this research.

1.6. DEFINITION OF TERMS

The following terms will be used repeatedly and therefore should be clarified for the reader:

- **Healthcare** – Any of the allied healthcare disciplines, from dietetics, to physiotherapy, to any of the medical or surgical disciplines.
- **Public healthcare institution** – A non-profit healthcare institution that is run predominantly on government funding.
- **Private healthcare institution** – A healthcare institution that is run predominantly as a profit-making organization without government subsidy.
- **Service quality** – For the purposes of this study service quality will refer to the subjective perception of the end-consumer (patient) of the service received at the institution.
- **HIV/AIDS** – A viral disease currently a major area of concern for the healthcare community in Sub-Saharan Africa.

- **Apartheid** – A system of government previously employed in South Africa based upon racial segregation.
- **End Consumer** – For the purposes of this study, the end consumer is defined as the decision maker with regards to the choice of healthcare treatment and facility. This will in most cases be the patient, but may not always be (e.g. parents/guardians for minors etc.)
- **Attribute** – This is reserved for the determinant decision criteria that consumers use to evaluate healthcare facilities (Louviere, 1988).
- **Utilities** – The relative weightings each consumer places on particular attributes (Louviere, 1988).
- **Choice** – Refers to the cognitive process undergone by the end consumer in deciding to select or not select any of the alternatives offered.
- **Decision maker** – In terms of this research refers to a respondent who makes decisions regarding health care for a dependant.

1.7. ASSUMPTIONS

Clearly a number of assumptions have been made and these will lead quite naturally to certain limitations that this research project will have:

The first and major assumption is that the choice of healthcare institution by the end consumer is a rational and considered choice. This may not always be the case, for example in emergencies or accidents, and therefore the results of this study should be taken in context of the situation. For the vast majority of cases, as highlighted in the literature review, it is assumed that

rational end consumers make considered and rational choices based on a number of criteria.

Another assumption is that there is a difference between the choice criteria in public and private healthcare end consumers. This stands as conventional wisdom yet remains to be definitively proven in South Africa by any study that could be found by the researcher, and may therefore stand as future research in this area. For the purposes of this study the focus will be on the private healthcare sector, with future possibilities of a parallel and comparative study in the public healthcare sector. As such, the relative difference or even lack thereof should not bias any results from this study.

A further assumption is that the healthcare industry and the private sector healthcare industry in particular, will lend itself to analyses that have been carried out successfully in other industries. However, as will be seen by in the literature review, there is literary evidence that this may indeed be done.

For the purposes of this study, only subjects who have access to and use private hospital facilities were used. As such it was assumed that there were no financial constraints. Whilst this did not mean that the financial aspect was ignored at all, it did diminish the role that economic factors played in this study and should be taken into consideration when reviewing the results.

With regards to that actual attributes chosen, the assumption was made that all private hospital facilities have similar waiting times. Whilst in reality this is clearly not the case, waiting time was excluded to avoid cross-correlation between itself and location as an attribute (Ryan et al, 2000) and also to exclude operational issues as much as possible, these not being the focus of this research.

Finally, the assumption was made that survey respondents will be able to answer the questionnaire with equal understanding and honesty. The methodology employed in the study was once again therefore of paramount

importance in gaining meaningful results for interpretation. This will be further examined in the methodology chapter.

CHAPTER 2: LITERATURE REVIEW

2.1. INTRODUCTION

This literature review will provide a brief literary introduction to healthcare in South Africa, after which the primary concern will be identifying the appropriate attributes that will be used in the study around which end consumers base their choices in the private healthcare industry. Literature around service quality measures, as well as some comparable and appropriate similar studies will be used to provide a solid base to define these attributes, as well as showing that these attributes may be used in a healthcare setting. There will also be a brief literary base to identify differences between private and public institutions in order to better understand the limitation put on this research.

2.1.1. The Healthcare in South Africa

This section of the literature review further looks to put forward the notion that healthcare in South Africa, particularly from a service quality stand-point, is in distress. It requires researching into the best possible way to allocate limited resources in an effort to improve it.

South Africa was ranked as 121st in the world in 2007 for the Human Development Index, a measure of humanitarian and health issues worldwide (UNDP, 2007), behind countries such as Costa Rica, Gabon and Vietnam. Despite this South Africans spend an estimated 5.1% of the GDP on private health (UNDP, 2007), which is amongst the highest percentages of all the countries surveyed. This is further enhanced by the GDP growth in South Africa over recent years, with a 3.7% growth in 2005, 4.0% in 2006 and 3.7% in 2007 (Swiveldata, 2008). This shows the importance of the private healthcare industry in this country in maintaining and developing higher levels of health management.

Private health in turn consumed over 50% of South Africa's health expenditure in 1998 (Health Systems Trust, 1998) and continues to show good growth, with SouthAfrica.info reporting a growth in private hospitals from 161 in 2003 to over 200 in 2007 (SouthAfrica.info, 2007). It was also estimated that by 2007, the private health sector was seeing to the needs of over 20% of the population (SouthAfrica.info, 2007), equating to over 8 million consumers.

When one looks at the private hospital industry, Network Healthcare Holdings Ltd (Netcare) reported revenues of R11.6 billion at the end of the 2006 financial year and South African employee numbers exceeding 18 000 (Netcare Annual Report, 2007). Add to this the R5.3 billion rand turned over by Medi-Clinic Holdings Ltd, alongside their 12 000 employees (Medi-Clinic Annual Report, 2007) and we begin to conceptualize how large the private hospital industry is. Life HealthCare Group also competes in this sphere, but focuses more on the primary clinic setting and whilst they cannot compete on turnover at the moment, are responsible for over 130 000 employees (Life Healthcare web page, 2008). These numbers are indicative of the size of the private hospital industry and with Medi-Clinic reporting revenue growth of 24% and Netcare reporting revenue growth of over 50% from the previous year; it looks set to continue to expand.

The private health sector is not the only one to have seen a massive influx of capital since 1994, with over 700 clinics having been built or upgraded, 2 298 clinics upgraded or outfitted with new equipment and 125 new mobile clinics introduced nationwide in the public sector (SouthAfrica.info, 2007). McIntyre et al (2005) goes on to claim that there are substantial resources available for meeting South Africa's health needs, and indeed, the health budget surplus in 2005 and 2006 would back these claims. The question is rather on how best to allocate these resources where the governing bodies seem to be having difficulties.

Furthermore, Soderlund (1999) speaks about the massive cost implications for South Africa of the HIV/AIDS pandemic. This disease has brought to a

crunch many otherwise latent issues in South African healthcare and stretched resources to an absolute maximum.

There are also numerous articles, of which Castro-Leal et al (2000) might be the best example, of studies that indicate that large amounts of resources are being pumped into the South African healthcare system with relatively little benefit to the average end-user.

Finally, Coyne et al (2002), reports that healthcare systems can indeed be compared across different spectrums with beneficial results, particularly citing the advance of American medicine following on from the French example.

2.2. Public vs. Private Institutions

Another important part of this study is to link public and private institutions. Whilst this has not always been done in the healthcare sector, there are nevertheless important characteristics that must be taken into account.

2.2.1. The history of public vs. private

By identifying specifically the private healthcare institutions it is necessary to briefly analyze the difference between public and private sector. Herwitz (1982) explains the origins of this distinction from the differing needs of the state to make a distinctly public domain and the individual to create a private domain away from the encroaching power of the state.

The distinctions between public and private are not always crystal clear and may pose challenges to the researcher, as evidenced by Perry et al (1988). He also highlighted the point that the social and political issues are often not taken into account when making the distinction. The fact remains though that this is an important distinction and therefore research into this area is beneficial.

2.2.2. Conventional wisdom

The conventional wisdom of the superiority of service quality in private institutions is also in dispute. Poister et al (1994) contended that there is little difference in service quality between the public and private sectors. This study, however, was conducted on multiple institutions using a 100 point conversion scale of overall service quality and is therefore not applicable to all situations.

Lastly, in any service industry the motivation of the staff is an important factor, and research by Jurkiewicz et al (1998) concluded that there was little or no difference in the motivating factors of similar level public sector and private sector staff members. Whilst this is also an area of concern in the South African healthcare industry, this will not be the main purpose of this research.

2.2.3. Conclusion

Whilst there is still contention over the private-public debate, there is clearly a perceived difference by the end consumer, or the private patient would not exist at all. It is the intention of this study to focus on the private end consumer, accepting all the limitations on the analysis and interpretation of results that will ensue.

2.3. Defining the tangible attributes

The first sub-problem, as previously stated, involves identifying the dimensions that are to be used in the study to define the attributes used by the end consumer in choosing between private healthcare options. These include service quality issues, as well as a variety of other factors that this literature review looks to identify and then group to form the necessary attributes, whilst still keeping the number and depth of these attributes at a manageable level for survey respondents.

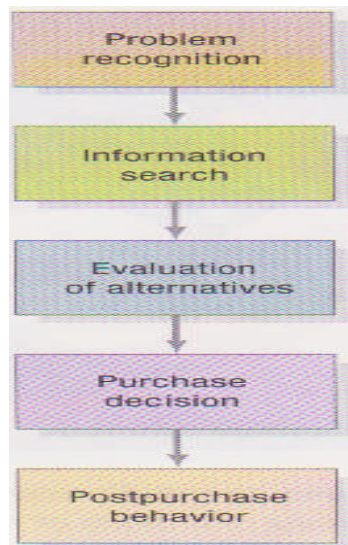
2.3.1. Consumer decision making criteria

A basic understanding of the decision making process that is undergone by consumers themselves is of primary importance when defining the attributes that will affect decision making is.

Kotler and Keller (2003) describe a five stage model:

1. Problem recognition;
2. Information search;
3. Evaluation of alternatives;
4. Purchase decision; and
5. Post-purchase behaviour.

Figure 1: Kotler and Keller's five stages of consumer decision making



Source: Kotler, K. et al. (2003) *Marketing Management*, Prentice Hall, New Jersey

Available information (for example being aware that an institution exists or offers certain services), can contribute to a consumer's end choice. This is not the area that is being examined in this study, however, and the focus will be on factors that affect the evaluation of alternatives and final decision. It is also understood that this is a multiple phase decision model and yet in many instances healthcare treatment is sought on a single phase or impulse decision. To minimize the impact of this the research will exclude any emergency healthcare assistance.

A very broad approach to consumer decision making would be to split the decision making criteria in to external (originating from an external source) and internal (originating from within) criteria (Kotler and Keller, 2003). External factors would include criteria such as looks, physical properties, price; whilst internal may include criteria such as social stigma, esteem, past experiences (Kotler and Keller, 2003). However, these definitions remain too broad to facilitate any in depth analysis and as such the concept should be explored a little deeper.

Kotler and Keller (2003) go on to mention the subject of modifying decisions according to the customer's perception of risk. This means that a customer may change a decision if they perceive a risk to themselves or to loved ones. These risks may be perceived in a number of forms (Kotler and Keller, 2003):

- Functional risk;
- Physical risk;
- Financial risk;
- Social risk;
- Psychological risk; and

- Time risk.

From this we can see that if an end consumer perceives any physical risk to themselves or loved ones from attending a certain private healthcare facility, this will override any of the other considerations. This means that the structure of the survey must be in a manner such that this does not occur.

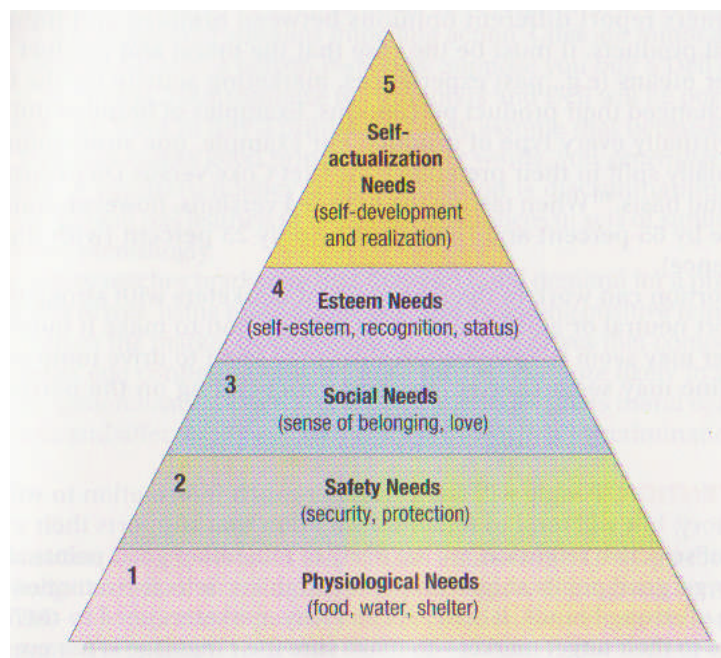
As to the factors that affect the actual decision making process, Adcock et al(1993) uses a “black box” model that represents the actual decision maker, sometimes also known as the “decider” (Kotler and Keller, 2003). Thus all the inputs that affect decision making are represented as going into this box, while the outcome is the decision itself. There may also be external influences on the “decider” via other group dynamics from individuals known as “influencers” or “users” (as in the case of a child who does not want to be taken to a certain clinic, but is not the actual decision maker. These are referred to by Adcock et al (1993) as the “social influence” variables, which is one of three principal buying decision variables identified, along with “psychological” and “demographic”, with the former including factors such as prior experiences and the latter economic factors.

For the purposes of this research only data from respondents able to make use of private medical facilities will be used and as such the assumption made that all respondents do not have financial constraints. Economic influences are then eliminated from the decision variables. Another principal decision variable identified by Adcock et al (1993) and falling under the economic factors is convenience, and this should not be ignored. A separate study by Douglas (1973) also found that price was relatively inelastic in the field of medical insurance, yet further discrediting putting a huge focus on price in this research.

There are also many theories of motivation, each with a distinct view of what motivates a buying decision, or indeed, any decision. The principal amongst these is Abraham Maslow's Hierarchy of Needs theory (1970), that ranks all

human needs in terms of a hierarchy, with physiological needs at the bottom, all the way up to self-actualization needs at the top (Kotler and Keller, 2003). One can see that healthcare would fall between the physiological and safety ranks, and therefore would be prominent in society's decision making. As all respondents in this survey will be subject to the same questions however, motivational theory should not play too major a role, with each respondent subjected to the same external motivational forces

Figure 2: Maslow's Hierarchy of Needs



Source: Maslow, A.H. (1970) *Motivation and Personality*, 2nd Ed., Harper and Row, New York

As with regards to consumer decision making in terms of service industries themselves, Ettenson and Turner (1997) developed a classification scheme from their own literature review and established five service dimensions:

- Type of commitment between service provider and consumer;
- Importance of the service to the overall welfare of the consumer;
- Degree of customization required;

- Degree of professional judgement exercised in rendering the service; and
- Whether the service is equipment or people-based.

These five dimensions were then used to formulate in a pilot study to distinguish between professional and non-professional services. The professional service example was a doctor, whilst non-professional examples include a dry-cleaner and photo shop. Once this difference was satisfactorily proven, a conjoint analysis was undertaken using 6 attributes:

- Location – in this study ease of access and parking were included here;
- Appearance of the outlet/office;
- Years in practice/business;
- Price;
- Method of payment; and
- Source of information.

Each attribute had two levels, and the analysis showed that for doctors the source of the information had the most significant effect on the consumer choice, followed by price, method of payment, years in practice and finally location (although even location was important in the choice making of over 40% of the sample). Appearance of the office was important for less than 1% of the sample group. However, no mention of the quality of service was mentioned in this study.

In a separate study, Razzouk, Seitz and Webb (2004) looked for important attributes in choosing a primary care physician. In their study 313 respondents were asked to rank the order of importance of a number of salient points gleaned from the literature. The highest ranking item was found to be quality of care, with access and interpersonal skills following in second and third. Other interesting points were medical training and credentials that

came in fourth and fifth, whilst years practising, demographics of the staff and comparisons to the national average all came in well down the list. No mention of any financial issues was raised in this study. This issue of service quality affecting decision making is supported by other studies, such as Laroche et al. (2005), who found that service quality affects purchase intent in shopping malls across Canada and even as far back as Friedman (1968), whose study investigating quality and price considerations linked both to customer's decision making criteria.

In yet another study, Tontini and Silveira (2007) used a model developed by Kano in 1984 to classify attributes into three categories:

- Basic – Fulfil the basic functions, only have the ability to dissatisfy if not present.
- Performance – Satisfaction is directly proportional to the service level.
- Excitement – Even incremental increases in these attributes give markedly improved satisfaction.

The way in which this research will be conducted gives limited opportunity to test for basic attributes, and there are little or no excitement attributes that are found in the literature, and so this classification scheme is of limited use in this study.

A number of the quality issues revolve around previous visits to the private healthcare institution (Acito, 1978) and this leads to a conclusion that with regards to healthcare choices, consumers are very much “habit buyers” (Kotler and Keller, 2003). This means that first impressions play a major role in repeat usage of a facility/institution.

There have been multiple other studies (such as Koo et al, 1999) that have used conjoint analysis to explore service industry consumer preferences and there seems to largely be consensus around the attributes of location, quality (whether of product or service), financial matters and convenience/access issues.

2.3.2. Conclusion

This portion of the literature review is aimed at identifying attributes from the literature that may be used in forming an adequate list of conjoint attributes that are to be used whilst analyzing consumer preferences. From the literature we can see that although there are a multitude of possible attributes, these follow a common theme and indeed may be adapted to the healthcare setting.

The following attributes came out strongly from the literature and as such will be used as attributes in the final conjoint design:

- location,
- access/convenience and
- price

Whilst other attributes were identified, due to the research design and in the interest of simplicity, only those attributes that featured recurrently and strongly have been used.

Research Proposition 1:

Consumer preferences in the choice of hospital facilities are influenced by tangible factors. As such the location, access and price play a role in consumer decision making with regard to hospital facility choice.

2.4. Defining the intangible attributes

2.4.1. Service quality measurement

The next question in this research is to find means that measure the service quality of the various institutions by defining a number of dimensions or attributes. Whilst there are varied approaches to this, the predominant two are the SERVQUAL and SERVPERF techniques (Shahin, 2003). Each of these offers their own benefits and has its own set of supporters in the academic world. Parasuraman et al (1985, 1994) devised ten factors or dimensions that could be measured using a seven point ordinal rating scale. This was later simplified into five dimensions (Shahin, 2003):

- Tangibles – includes physical resources and appearances
- Reliability – ability to perform dependably and to specifications
- Responsiveness – promptness and willingness to help
- Assurance – includes the old dimensions of competence, courtesy, credibility and security
- Empathy – includes the old dimensions of access, communication and understanding the customer

Together, this method of measuring service quality measured the customer perceptions of the service using a 22 question survey using a 7 point ordinal rating scale, and then subtracted the customer expectations, which were measured in the same way. This is called a **SERVQUAL** measurement.

Whilst the academic community has extensively used the SERVQUAL measurements, with Rust et al (1993) claiming they should be on the initial list of any service quality attributes, it is important to note that they should remain a first pass. In a critique of the SERVQUAL methodology, Buttle (1995) noted concerns as to the extent of convergent and discriminant validity with the SERVQUAL scale and proposed future research in this area. Despite this, the SERVQUAL scale has remained largely unchanged in the past 10 years, and

whilst important to contributing to the end attributes, should be taken in context.

Whilst it is not in the interest of this study to examine the intricate workings of the SERVQUAL model, it is of note that there are 5 different types of perception-to-expectation gap that may occur (Parasuraman et al., 1985, 1994):

- Gap 1 – Between consumer expectation and management perception. Managers do not in fact know what consumers really want.
- Gap 2 – Between management perception and service quality specification. Management are not fully aware of the service quality specifications being delivered.
- Gap 3 – Between service quality specifications and service delivery. The actual end provider of service fails to live up to the set standards.
- Gap 4 – Between service delivery and external communications. The information about the service delivery is unrealistic and leads to false expectations.
- Gap 5 – Between perceived service and expected service. The overall measure and this gap may occur as a result of any of the previous gaps.

The SERVQUAL measurement serves to negate the differences in expectations of the patient, and this is at once the advantage and disadvantage of using this approach. It does assist in negating any differences between the levels of resources available to institutions, yet by this very nature leaves itself more open to the vagaries of the end consumer. This inconsistency across certain fields is the very argument that Cronin et al

(1994) make against this form of measurement. By contrast, Shahin (2003) amongst others maintain that a purely service performance-based approach as advocated by Cronin et al ignores the differing expectations that an end consumer would have in say, a high end expensive private institution.

The major opposing measure of service quality is called **SERVPERF** and measures 22 performance measures on the survey only (Cronin et al., 1992). This is a much debated point with the authors claiming that this gives a wider use for this measure across different industries. In an article in 1994, the authors again showed research confirming that the SERVPERF measure was more consistent across industries, a claim that was refuted by an earlier article from Parasuraman et al (1990).

To compare the two major service quality measurement scales and choose one over the other would furthermore be irrelevant for the purposes of this research as the differences are contained mostly in the claims of validity across industries arising from differing methodologies, whilst this research seeks to use the scales to formulate adequate attributes for end consumer preferences. Indeed, the argument itself may be superfluous, as shown by Carrillat et al (2007), who's meta-analysis of 17 years of SERVQUAL and SERVPERF studies found them to have comparable validity.

Recent academic work by Shemwell and Yavas (1999) and by Brady and Cronin (2001) has developed yet another measure for service quality measurement that evaluates service quality on a multi-level construct, this being three primary dimensions:

- Interaction Quality;
- Physical Environment Quality; and
- Outcome Quality.

Whilst both studies agreed that there should be sub-dimensions to each of these primary dimensions, thereby highlighting the multi-dimensional aspect of service quality, the sub-dimensions themselves have varied according to each individual study. In a meta-analysis study, Gounaris (2005), found both suitable validity in the SERVQUAL model and highlighted four sub-dimensions in the INDSERV model:

- Potential Quality;
- Hard Quality;
- Soft Quality; and
- Output Quality.

Also, in a study by Oppewal et al (2000), a conjoint analysis was conducted to measure perceived service quality, with the attributes emerging:

- Accessibility – which includes ease of access and parking;
- Competence;
- Accuracy and friendliness; and
- Tangibles

These attributes also fit in well with a study by Zineldin (2006), who similarly found whilst using a 5Q model that aspects such as atmosphere, interaction, and process quality played an important role in patient satisfaction.

There is as yet no definitive answer to this debate, although there is consensus that service quality is a tricky area to measure and care must be taken to address the critical areas for each industry (Johnston, 1995). Johnston (1995), however, identified 18 determinants of service quality in this study, and whilst this approach may be comprehensive, it is too complex to fit in to a survey without running into complications of respondent fatigue and misunderstandings. This does not mean, though, that there is not also a distinct advantage to organizations in recognizing the many intangible elements of service quality and develop systems to measure and monitor these (Silvestro et al, 1990).

Lastly, but maybe most importantly, Rust et al (2000) showed by analysing longitudinal data that the measurements of service quality can be used to forecast changing market share and as such affect critical strategic marketing decisions. This is obviously critical in the nature of the context of the purpose of this research.

2.4.2. Adaptation of service quality measures to a healthcare environment

Whilst little or no literature exists for adapting any service quality measure to the South African healthcare environment, Babakus et al (1992) adapted the SERVQUAL scale to the hospital industry following studies at mid-size hospitals in the United States of America.

Furthermore, Desombre et al (1998) used lessons learnt from another service industry, namely the hotel sector, to conclude that the healthcare industry could adapt to a customer-focused as opposed to a patient-focused philosophy, and could expect similar results in financial and non-financial

performance. Desombre et al (1998) did split the service quality measurements into internal (from the organizational point of view) and external (from the consumer's point of view) and used 5 points of service quality measurement:

- Competitiveness – as opposed to competitor organizations.
- Quality of service – includes reliability, responsiveness.
- Flexibility – Ability to adapt.
- Resource utilization – Internal indicator.
- Innovation – New product offering.

One can see that these closely mirror the 5 attributes identified in the SERVQUAL/SERVPERF measurements, yet include internal factors not identified in the aforementioned scales. Whilst these factors are indeed relevant to service quality and its contribution to the healthcare industry, the focus of this research remains identifying consumer preferences and as these internal measurements only apply in as much as they influence end consumer perceptions.

The theme of responsiveness has emerged from multiple prior research studies. This, however, is deemed by the researcher to be an operational issue, and therefore whilst important for private hospital facility managers to consider, outside the scope of this research.

Lastly, Kilbourne et al (2004) found evidence to support the cross-national use of SERVQUAL in the healthcare environment, yet concluded that there was much more research to be done before the cross-national validity could be confirmed. Whilst this study is in no way cross-national, this study confirms

the wide-spread use of SERVQUAL dimensions as applied to the healthcare environment.

Whilst these are the closest academic sources available on this particular subject, in light of the previous delimitations care must be taken to appropriately adapt any scale to the South African environment.

2.4.3. Identified service quality dimensions in the healthcare industry

There have been a number of studies that have measured service quality dimensions in a variety of healthcare settings. In this section of the literature review we shall discuss relevant examples and their merits in developing the attributes we shall need in this study.

It should be noted that Ryan et al (2000) and Jan et al (2000) conducted conjoint studies in the healthcare sector and found competence and waiting time to be of paramount importance. Both these studies included the public sector; however this study is not dealing with operational issues that have been found to be consistent across all service industries (e.g. Sulek et al, 1995 & Kamakura et al, 2002). As such waiting time will not form part of this study.

A very common methodology for measuring hospital service quality has indeed been to apply the SERVQUAL scale to a random group of patients and analyze the results. This method has been used by studies such as Youssef et al (1995), where various National Health Service hospitals in the United Kingdom were ranked according to the perceptions minus expectations criteria.

Not all service quality constructs in the healthcare industry follow from the SERVQUAL model. A ground breaking article in 1975 by Ware and Snyder identified four dimensions:

- Physician conduct;
- Availability of care;
- Access mechanisms; and
- Continuity and convenience of care.

As the literature progressed, more emphasis from this scale was placed upon one item: access (Vandamme et al, 1992). This key concept was then further broken down into its own dimensions by Penchansky and Thomas (1981):

- Availability of services and resources.
- Accessibility to clients/patients.
- Accommodation of the facility to client/patient needs.
- Affordability of the service in relation to the client/patient.
- Acceptability to the client/patient of practises within the institution.

There are clearly overlaps between these dimensions and those identified by the SERVQUAL model, yet the insights provided by these articles and research may prove valuable in constructing a comprehensive list of consumer preference attributes.

In Carman (2000), the author looks to combine multiple dimensions of service quality to specifically focus on the healthcare sector. In the study questions are posed as to the validity of combining certain service quality dimensions in the healthcare sector, as well as the validity and reliability of conjoint analysis in obtaining applicable data. It is important to note that Carman based his work upon earlier work by Gronroos (1990) as well as the work of Parasuraman et al (1988), which has been previously mentioned. Gronroos (1990) divided service quality attributes into only two sets:

- Functional – such as ambience and attentiveness; and
- Technical – such as the quality of the end result of the service.

Carman (2000) carries on to find that conjoint analysis does indeed provide less biased results across diverse groups, but does clearly state that since hospital patients are not a homogenous group, results do vary according to the circumstances in which the survey respondent has or hasn't been in contact with healthcare services. The results of the study go on to conclude that the five dimensions derived from the SERVQUAL literature do not have co-linearity and, whilst the author finds support for the two dimensions proposed by Gronroos (1990), finds no evidence to support combined dimensions in the hospital sector when assessing service quality.

In another study Youssef et al (1995) used the five dimensions of the SERVQUAL scale to measure service quality in the National Health Service hospitals in the United Kingdom. Whilst the results were relevant only to the NHS hospitals themselves and ranked their respective service quality scores, this study has an interesting role to play as being one of the first studies to acknowledge that place, price and promotion also play a role in the choice of the patient in attending a particular institution.

The SERVQUAL model with its 5 dimensions and perceptions minus expectations ordinal rating questionnaire has been used in developing

countries as well, with Taner et al (2006) doing a comparative study between public and private institutions. This study interestingly found no significant difference between the service quality levels between the public and private sector, which has its own ramifications on the limitations set upon this study.

In yet another study (Choi et al, 2005) where the focus was on the healthcare system in South Korea, demographics such as age, gender and the types of service were used to establish differences across a modified SERVQUAL service quality dimensions. These were adapted from the original literature and analysed using iterative purification, confirmatory factor analysis and finally discriminant validation to produce four parameters:

- Physician concern.
- Staff concern
- Convenience of the care process
- Tangibles

Whilst the results of the study have limited bearings on the purpose of this research, most notably noticing higher satisfaction levels in older patients, which may be related to more realistic expectations (as is necessary in the SERVQUAL model), it is important to note the similarities in the dimensions being used by the researchers.

Incidentally, this research (Choi et al, 2005) agrees with multiple other researches in the field that the context of the healthcare service being sought does differentiate the perception of the service quality. As such, a pregnant female in for child birth perceives the service quality to be higher than a sick patient (Carman, 2000).

This role of the expectations is further explored in a study by Conway et al (1997), where a conceptual model of the dimensions of private service quality that enter into patient perceptions are identified as being the 5 SERVQUAL dimensions, as well as the role of access that has been discussed prior and a last and noted important dimension – information – that is relayed as being the information available about the choices of healthcare institutions of any of the individuals.

A further important note on this topic relates to the impact that measuring service quality has on improving perceived service quality in healthcare institutions. There are conflicting studies on this, such as Wisniewski and Wisniewski in 2005 who found the assessment of service quality had little effect on the staff, which showed little effort to improve their service delivery and quality. This study was done using the 5 dimension SERVQUAL scale at a colostomy clinic in the United States of America. There are reports of the process of the research itself having a very positive effect however, such as Leonard et al., 2001, who evaluated service quality in long term health facilities using a SERVQUAL scale and subsequently found an improvement in service quality standards in a post-study review.

Finally, all the research and studies prior to this have used quantitative, theoretical means to evaluate and measure service quality dimensions in the healthcare industry. There is research that is conducted on a more qualitative basis however that validates the quantitative analyses. An excellent example of this would be the research of Evason and Whittington (1997), which used focus groups to evaluate patients' perceptions of quality and concluded that whilst responses had a higher variability than the standard questionnaires, similar themes and dimensions emerged. The study also concluded that focus groups could raise isolated individual issues that might otherwise be swamped in a larger questionnaire survey.

2.4.4. Brand Association

Brands identify the manufacturer or service provider to the consumer and allow the consumer to form pre-conceived notions about the offering (Kotler and Keller, 2003). They are an integral part of current marketing philosophy and whilst this study does not deal directly with the issues of brand equity, it is necessary to acknowledge the role they play in consumer decision making.

Whilst not intrinsically dealing with brand equity, this research will address the topic of brand association, in other words, the associations made in the mind of the consumer when certain brands are mentioned (Kotler and Keller, 2003). These associations will affect perceptions in the mind of the consumer and contribute to the psychological factors influencing final decisions as discussed in the previous section. As such, we need a clear understanding of how brand associations influence consumer decisions and what brands will affect this in the South African setting.

2.4.5. Brand influences on consumer decision making

In a study by Belen del Rio et al (2001), survey respondents were asked to evaluate four aspects of multiple brands. These were:

- The confidence it inspires;
- The concern about consumer interests shown by the brand;
- The performance qualities; and
- The value for money.

Whilst using these four dimensions allowed the study to discern that different products or services have differently allocated weightings on each of these

aspects, the study found that in all cases the findings were significantly different from the control group. This clearly shows the role that brand plays in consumer decision making. This is not the only study of this type with Kumar et al (2004) even linking the brand equity and associations as playing key roles in mergers and acquisitions.

In a related subject, namely brand trust, which is the amount of trust a brand inspires in a consumer based on recommendations and prior experiences (Kotler and Keller, 2003), a study conducted by Delgado-Ballester et al in 2001 found that greater brand trust results in greater brand loyalty. This creates repeat business and has been linked to increased sales and revenue (Fournier and Yao, 1997). This finding has been supported by multiple other studies, including Kim et al (2003) who measured brand equity on a firm's financial performance. The findings of this empirical study were that virtually all aspects of brand equity, including brand awareness and brand trust, affected the financial performances of the sample organizations. This study was conducted in the hotel industry, which whilst not in healthcare, is also a service-based industry.

Even the issue of the brand name has been found to be influential in the consumer decision making process and therefore in the success or failure of a brand. This was found to be the case in Bhat et al (2003), where the actual choice of name in new product lines were evaluated and found to have a substantial effect on the product perceptions in the mind of the consumers.

2.4.6. Conclusion

The intangible attributes centred on service and product quality, with the five dimensions of SERVQUAL as well as previous health studies used as a base for this. For the purposes of this study and in keeping with the literature, product quality will be taken as the medical quality of the staff, such as training/competence and service quality taken as the empathy/responsiveness/caring of the staff. The competence/training attribute

obviously includes all adjunct medical staff as well as the doctors and specialists, and as such will be reflected as such in the attributes.

With these in mind the attributes identified from this portion for this study are:

- Staff/specialists competence and training
- Staff service, empathy and consideration
- Brand association

Research Proposition 2:

Consumer preferences will be influenced by the intangible attributes affecting perceptions at a private hospital facility. As such, the perceived staff competence; as well as the perceptions of staff attitude at that institution and brand association will play a role in consumer decision making.

2.5. CONCLUSION OF LITERATURE REVIEW

The literature shows that there are multiple studies and theory bases for defining attributes on which to explore consumer preferences in a service industry. These arise from both previous exploratory studies as well as combining those studies with further literature on service quality and the attributes that contribute in its measurement. In fact, there are multiple studies that identify attributes for consumer decision making in the healthcare industry itself. As such, seven healthcare specific attributes have been identified for exploration in this study in the private healthcare industry in South Africa:

- Location

- Access/convenience
- Facilities
- Price
- Staff competence
- Staff service
- Brand

Note: Whilst waiting time also featured prominently in previous health research (Ryan et al, 2000 and Jan et al, 2000), this attribute has been found to be common across service industries (e.g. Sulek et al, 1995 & Kamakura et al, 2002) and therefore would be of limited use to the private healthcare manager. It is also mainly an operational issue, which is not covered in the course of this research paper. As such it has been excluded from this research, being beyond its scope, yet obviously remains an important attribute to consider. It is, however, crucial to note that there is a trade off between location and waiting time (Ryan et al, 2000) and as such this research assumes a similar waiting time across facilities.

2.5.1. RESEARCH PROPOSITION 1:

Consumer preferences in the choice of hospital facilities are influenced by tangible factors. As such the location, facilities, access and price play a role in consumer decision making with regard to hospital facility choice.

2.5.2. RESEARCH PROPOSITION 2:

Consumer preferences will be influenced by the intangible attributes affecting perceptions at a private hospital facility. As such, the perceived staff competence; as well as the perceptions of staff attitude at that institution and brand association will play a role in consumer decision making.

CHAPTER 3: RESEARCH METHODOLOGY

3.1. RESEARCH METHODOLOGY

In this section the methodology of the study will be discussed. Whilst it is obviously predominantly a quantitative analysis, the first phase was conducted in a qualitative manner, making this a mixed methodology (Creswell, 2003). The qualitative element allows for some personal insight into this otherwise mathematical analysis. The advantages of the qualitative pilot phase and quantitative questionnaire phase will be discussed later in this chapter.

This research was run in two phases:

Phase 1:

Phase 1 was a short, qualitative pilot phase involving up to five interviews with potential research subjects. Each subject was chosen by convenience sampling and subjected to a short 15 minute interview in which the interviewee expressed any queries or issues with the conjoint questionnaire. This phase was purely to validate the questionnaire and highlight any issues that may possibly arise such that they were corrected before phase 2.

Phase 2:

This phase involved a quantitative choice based conjoint analysis (Green and Wind, 1975) that was done by blind, convenience, snowball sampling. This methodology means that there will be no direct control over the sample group, with questionnaires being sent out to a sample group that is readily available to the researcher, and the onus to forward those questionnaires on to more potential respondents then left up to the initial sample group (Leedy et al, 2005). The snowball methodology allows access to a much larger potential

response base for a much smaller amount of time expenditure. The disadvantage of this method is that there may not be enough responses due to the lack of direct intervention. Fortunately this was not a problem in this research study, although the option of manually obtaining the data was always catered for. The results were subjected to quantitative analysis and analysed in context.

3.2. RESEARCH DESIGN

3.2.1. Phase 1:

Five interviews with potential respondents and if possible an analytical expert will be conducted by the researcher. The questionnaire will be sent to the interviewee in advance, whereby it will be completed before the interview. Any problems with the questionnaire and possible solutions will be discussed. The respondents will be exempt from the main part of the study.

3.2.2. Phase 2:

The research is designed around the conjoint analysis technique (Green and Wind, 1975), with the phase 1 and phase 3 stages included to allow for qualitative corrections due to researcher error. Conjoint analysis is a technique that utilizes pre-defined attributes affecting choice decisions and then gives these utility scores to reflect how much of the decision variance is influenced by that attribute (Green and Wind, 1975). It is important to note that this only reflects relative, not absolute attribute importance – it is a relative score against the other attributes in the study to ascertain which attributes the customer uses to differentiate between offerings (Green et al, 1978).

There are two main assumptions with conjoint analysis (Jaeger et al, 2000):

- Consumer choice is a function of maximization of preferences; and

- A product or service can be viewed as a bundle of attributes.

The conjoint analysis technique uses an ordinal scale that can either indicate a rating for one choice item, or can differentiate between two choice items on a sliding scale basis. In this study the choice based item design will be used, which has been shown to eliminate the need for complicated choice simulators (Jaeger et al, 2000).

3.2.3. *Attributes and levels*

As shown in the literature review, seven attributes have been identified and these need to be further broken down into levels. The total number of attributes does not influence the reliability of the data, although the number of levels in each attribute should be roughly equal to avoid biasing the results (Reibstein, 1988), as inconsistencies here lead to patterns that are easily detectable by the respondent. These levels have been chosen to represent the entire attribute and are carefully worded such that they give consistent meaning. A point of note when defining these attributes is that of the attribute of brand, where Netcare, Medi-Clinic and Life HealthCare were identified as the three leading private hospital brands in the country (Kahn, 2008). Also the financial attribute was identified, and whilst many aspects of this will not be applicable to the study, the aspect of cost per visit remains important. Most South African medical aid schemes have their own rates set per visit, where any added cost is incurred by the patient. These have collectively become termed “medical aid rates” and are common terminology with which the respondent should identify. The list of attributes and example questions follow:

Table 1: List of Attributes

Attribute	Levels	# of levels
Facility Quality	• Leading edge facilities • Standard facilities • Out-dated facilities	3
Location	• 5 minutes travel time • 30 minutes travel time • 2 hours travel time	3
Access	• Ample access and parking • Sufficient access and parking • Never enough access and parking	3
Staff Competence	• Absolute confidence in staff competence • Reasonable confidence in staff competence • Little confidence in staff competence	3
Staff Attitude	• Empathetic staff • Friendly staff • Barely adequate service delivery	3
Price	• Above medical aid rates • Exactly medical aid rates • Discounted medical aid rates	3
Brand	• Netcare • Medi-Clinic • Life Healthcare • Unbranded	4

As such a respondent would get a random assortment of one of each attribute level and have to choose between two options, a score of 1 indicating strongly choosing the left hand option, a score of 9 indicating a strong choice for the right hand option, with a score of 5 indicating indifference. The actual questionnaire was formulated by inputting the attributes and levels indicated above into a piece of software called Sawtooth™. This is available from Sawtooth Software Incorporated. Whilst there are other software programmes that are capable of formulating this design, Sawtooth™ was readily available at this time with a proven track record in the academic institution. The questionnaire could also easily be linked to an internet address for ease of convenience to respondents.

As conjoint analysis is a data hungry method, the recommended number of choices in the questionnaire was impractical and lengthy for respondents to complete without respondent fatigue setting in (total recommended number of option sets was 49). The number was therefore reduced to a manageable size, a compromise of 32 choices was deemed appropriate.

The questionnaire was also set up so that no two options would be contradictory (such as for example the worst service for the cheapest price)

As the entire second phase was automated, it was important to be as clear as possible with the choices and demographic details, as any misinterpretation could not be rectified. A number of respondents were excluded due to incomplete data sets or according to the screening criteria.

The demographic questions include gender, age group, income bracket, medical insurance cover and number of dependants.

3.2.4. ADVANTAGES OF MIXED METHODOLOGY RESEARCH

Fry et al (1981) wrote a paper that dealt not with the inherent advantages of one research methodology over the other, but the advantages of using a mixed methodology over a single method. In the paper, the authors expounded the inherent disadvantages of a single method approach, being subjectivity and unreliability for qualitative data and the often superficial nature and lacking of validity of the quantitative approaches (Fry et al, 1981). This view reflects that of the researcher, that the best advantages of both worlds is obtained by combining the two methodologies to gain insight and meaningful responses as well as the objectivity and numeric validity of the quantitative approaches.

3.2.5. DISADVANTAGES OF MIXED METHODOLOGY RESEARCH

The major disadvantage of the mixed methodology is one of extra time and effort (Fry et al, 1981). Also this methodology may tend more to one side than the other, thus lending what is essentially a false sense of credibility. It must be pointed out at this point that although this research uses a mixed methodology, the vast bulk of analysis has been done in a quantitative format, and as such certain qualitative elements will be missing.

3.3. POPULATION AND SAMPLE

3.3.1. POPULATION

The population for this research study includes any individual that makes use of private South African hospital resources. This includes foreign nationals and local residents. Children under the age of 18 were excluded as these do not fall under this research's definition of 'end consumer'. Those individuals who make use of both public and private healthcare facilities were also not

included as the author accepts that there are different arrays of attributes that may affect decision making in this group and may bias the results. The population, by means of the design of this study, consists of only those private hospital users who have access to internet. Whilst this is a potential limitation, this greatly simplified data collection.

3.3.2. SAMPLE AND SAMPLING

As previously stated, the sample was a blind convenience sample that was collected by using a snowball methodology. The only restriction placed upon the sample was that they must be end consumers of the private hospital facilities exclusively, as the literature review does not allow for the added influences of the public health vs. private health debate. As such financial considerations, age, gender or any other demographics were not used as exclusion criteria. Whilst these were collected, it was purely for the purposes of additional analysis.

To properly statistically analyze the data, as well as to get reliable and robust data, a larger sample is preferred (Bell, 2005). However, due to practical considerations it is impossible to access the millions of private health users countrywide and as such a sample size of 50 was the minimum acceptable number. Completed questionnaire data allowed up to a maximum number of 150, where unfortunately due to time and practical considerations, the data collection would cease. In total 132 respondents answered the questionnaire, of which 93 were valid in terms of the criteria already set out.

3.4. PILOT RESEARCH

3.4.1. PURPOSE OF PILOT RESEARCH

The purpose of this pilot research is to gain a qualitative understanding of the strengths and weaknesses of the questionnaire and research methodology from the respondent's point of view. As such, any shortcomings or oversights in the design, presentation and operation of the online questionnaire could be evaluated before sending the questionnaire out to potential phase 2 respondents.

The pilot phase also importantly allowed for an opportunity for any redundant or non-useful attributes to be eliminated from the questionnaire, which would help with respondent fatigue and the amount of option sets optimally required (as less attributes require less option sets).

3.4.2. METHODOLOGY FOR THE PILOT RESEARCH

The pilot phase was conducted by an online convenience sampling methodology, in which the questionnaire was delivered via electronic mail. The respondents were then interviewed personally by the researcher to obtain their feedback. The sample group was chosen out of five potential respondents known to the researcher who all would qualify for the research. This group was chosen to be as demographically representative across the measured demographics as possible.

The pilot sample groups' results were not used in the final analysis.

3.4.3. ANALYSIS OF PILOT RESEARCH DATA

Major feedback from the pilot phase respondents included the following:

- Rephrasing the instruction page to allow for easier understanding, as well as placing pictorial examples therein.

- Changing the colour of the pictorial option sets to facilitate easier visual comprehension.
- Possibly shortening the questionnaire from 1 of the pilot respondents due to respondent fatigue.

Unfortunately this last would have compromised the data, which had already been shortened, and therefore was not feasible. The other two suggestions were incorporated into the final questionnaire (seen in Appendix A).

Overall the response from the pilot phase respondents was extremely positive, with all completing the questionnaire and following instructions with no major problems. The online format worked well and the responses were easy to acquire. The pilot phase did not elicit any attributes that were redundant or not used at all in the decision making process, thus validating the questionnaire construction.

3.5. PROCEDURE FOR DATA COLLECTION

Data collection was done by means of personal interviews conducted by the researcher for phase 1, and via electronic questionnaire survey for phase 2.

The electronic survey was sent via an internet link through e-mail to a sample group of applicable candidates and then forwarded on using a snowball methodology. Potential respondents, when activating the online link, were obliged to answer some demographic data as well as two questions that were used for exclusionary purposes:

- **Age?**
- **Do you exclusively use private hospital facilities when the need arises (as opposed to public/government services)?**

If the respondent is under 18 or answers “no” to the second question, they were excluded due to reasons mentioned earlier.

Please see Appendix A for a full visual representation of this questionnaire.

This method of blind snowball sampling has the benefit of easily accessing large amounts of data, but care must be taken that the questionnaire is transparent and that only relevant data is included, making phase 1 and the pre-analysis exclusions even more critical.

3.6. DATA ANALYSIS AND INTERPRETATION

The ordinal data was subjected to analysis using the Sawtooth™ software, which gave variance and utility scores for each of the attributes, following a least squares regression model. These scores were taken in light of their relative nature and interpreted accordingly. The results were also subjected to cluster analysis, to ascertain if any distinct clusters emerged. K-means cluster analysis was the preferred method as has been shown in multiple previous conjoint studies (Murphy et al, 2004; and Johnson et al, 1991). Unfortunately the cluster analysis could not show any defined clusters, and as such this has not been included in the results section.

The entire data set was then randomly split up thirty times in a method called bootstrap resampling. These random samples were then re-analyzed in a broad sense to ascertain the overall importance scores, and make sure these were in-keeping with the overall results. This method helped to determine reliability in the data.

As previously stated, this research will give an insight into the consumer preferences driving consumer choice in the private hospital industry. The attributes may well be different in another industry, and it cannot determine what is important to the consumer, simply what drives the choice. Whilst the attribute utilities will be useful relative to each other, the insights gained may

be more obscure. Care must be taken not to arrive at too definitive a conclusion. Also the sampling method used in this study limits its total applicability, as there are broad segments that are beginning to use private hospital facilities that will not have access to the internet. As such, this is an introductory survey only and should be analysed as being such.

3.7. VALIDITY AND RELIABILITY

Validity and reliability are extremely important in this research proposal, obviously with the proviso that the delimitations and limitations are met.

3.7.1. EXTERNAL VALIDITY

External validity is the relation the data has to the general research area (Leedy et al, 2005). This research obviously only has limited external validity, yet even in confined areas, research has been shown to have useful external validity (Yin, 1994). The external validity of this research is therefore confined to the health sector in South Africa.

Leedy et al (2005) also relate back to three common strategies: the setting needs to be real world, a good sample must be selected and lastly, to attempt to produce similar results in varied settings. If these can be produced by the research then it has good external validity. This research conforms to the former two criteria and with the resampling methods described above should conform to the last, and therefore should have good external validity.

3.7.2. INTERNAL VALIDITY

According to Leedy et al (2005), internal validity refers to the extent to which the studies design enables comparisons between differing elements within the study to be drawn. Internal validity is thus crucial in comparison analysis. There are a number of methods used to ensure internal validity in a research project, the major one being triangulation, where multiple sources of

information are all used to find a convergent outcome (Leedy et al, 2005). They further state that all precautions need to be followed to eliminate other possible explanations for the results that were observed.

Internal validity will only be obtained if the interview process is consistent, and the questionnaire unbiased across the multiple ethnic and demographic groups that by their nature need to be engaged in this study. As such, the study will be brief and easy to understand, although it is unfortunately of practical necessity that it will not be available in all languages. This may mean that whilst most of the targeted populace will be conversant in English, the sample may be biased toward people with English as a first language as the rest may find the questionnaire too taxing to complete. This should be clearly noted when the results are interpreted.

Whilst aberrant results are always a possibility, large groups of respondents help to mitigate this, whilst also allowing for statistical interpretation of results. This particularly means that for accurate analysis larger numbers are preferred.

3.7.3. RELIABILITY

To ensure reliability this report will attempt to maintain a consistent, reliable approach in all interviews by making use of the same interview technique and questions; whilst during data analysis a systematic approach will be maintained to ensure that the data is reliable. All qualitative interviews will be conducted by the researcher, maintaining consistency in the interview process and interview response interpretations.

The researcher acknowledges that the data will be subject to the opinions and thought processes of the respondents at the time of each interview. As all subjective and qualitative naturally vary, it is important that the findings of the research be assessed within the context of the organisational environment at the time of the research. The triangulation technique, as written by Leedy et al (2005) is thus crucial in gaining reliable results. This means that a varied

choice of interviewee is critical in the qualitative phases of this research. Utilising this triangulation technique will help ensure that no outlying, varied or misleading results may be obtained.

For the quantitative section it is important to identify outlying responses that may skew the data. This can be done by looking at the attribute utilities and performing a cluster analysis on them, then rechecking with the raw data to ascertain whether responses were outliers (in other words aberrant) or just extreme views. This will help confirm the reliability of the data. The data will also be subjected to bootstrap resampling, which re-splits the data into random groups within itself multiple times and checks for consistency of results.

Lastly, multiple studies have been done, Reibstein et al (1988), being a prime example, that conclude that conjoint analysis is a reliable quantitative approach. This study was also instrumental in concluding that the amount of attributes does not affect the overall reliability of the data.

CHAPTER 4: PRESENTATION OF RESULTS

4.1. INTRODUCTION

The survey was conducted in an online format, with a snowball methodology used to transmit the link via e-mail. A total of 132 respondents replied within the two week deadline, of which 93 were valid respondents. Of the 39 who were excluded, 1 was excluded due to a mixed use of government and private hospital facilities, and the rest were excluded due to incomplete responses of the questionnaire, presumably due to respondent fatigue.

4.1.1. Understanding the results – Sawtooth™ attributes and importances

It must also be noted that the Sawtooth™ software delivers results in one of two ways:

- Importances – These values are simply calculating which attribute was most used by each respondent when making their decision. This means these importances are an indication of ranking and not an absolute value. Large differences in the importances of various attributes will show which attributes the respondents perceive to be most important. It is very important to note that the importances will always add up to 100, therefore the importance score is in essence the percentage variation in the decision making process that is taken up by that attribute.
- Utilities – The utilities scores rank the levels within each attribute (for example location or competence) on a zero-sum basis. This means there will always be positive and negative scores. These should again not be taken as absolute measures; a negative utility does not necessarily mean respondents are vying away from that choice. The

utility simply states that when a respondent does use that attribute in their decision making, which level of the attribute they prefer.

Both these results should be taken in context. For example, a massive utility score in an attribute with very low importance may not be crucial to the outcomes of the research.

4.1.2. Understanding the results – ANOVA tests and probabilities

The results were then conducted to a one-way ANOVA test, which statistically measured the attribute or levels against each other according to demographical information. This was done in a variety of permutations in order to gain a full picture of the results. The statistical analysis devised measures such as means/standard errors etc but also showed the probability that the two variables being compared came from the same group. A low probability therefore means that there is statistical evidence that the two variables may be different.

For the purposes of this exploratory study a relatively high alpha value of 10% was used, as the consequences of gaining a type I error (incorrectly finding a significant result) were deemed to be less severe than a type II error (incorrectly missing a significant result). In exploratory research of this type a significant finding usually only results in further investigation and such is an acceptable error risk to assume. This basically means that if the probability of the two variables being the same was less than 10%, they were deemed to be different on a statistical basis.

It should also be remembered that the number of respondents in each demographic bracket will influence the statistical significance calculations, as the statistics may not have enough information with low numbers of respondents to find significant results. An insignificant result therefore may indicate nothing more than further research is required.

4.2. ANONYMITY

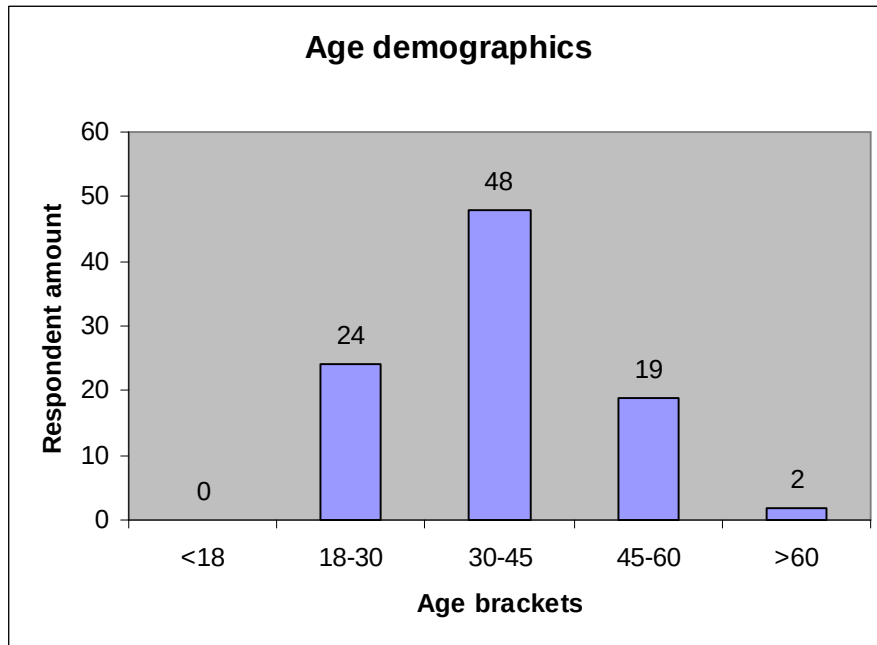
No respondents were asked to input their names in the questionnaire, with absolute anonymity guaranteed. The IP addresses of computers that had already completed the survey were blocked to prevent any person completing more than 1 survey form the same computer. This was deemed to be adequate defence against multiple responses from one respondent biasing the results.

4.3. DEMOGRAPHIC PROFILE OF RESPONDENTS

The respondents were asked to include demographic data according to age; income bracket (per month); gender; level of cover by medical insurance and whether the respondent was the decision maker for any dependents. Of these there were two optional demographic questions, namely the income bracket of the respondent and whether they were the decision makers for any dependents. There were 93 valid respondents of which only 3 declined to give their income bracket, and only 1 declined to answer whether they were the decision maker for any dependents.

The demographics asked were chosen to be of practical benefit to the private hospital facility manager, with information that could potentially be useful in strategic, marketing and expansionary future policies. Race was not considered as this was seen by the author to be a complicating factor and not part of the scope of this research. This is not to say it has no place in this area of research, however, and may be more fully explored in future studies.

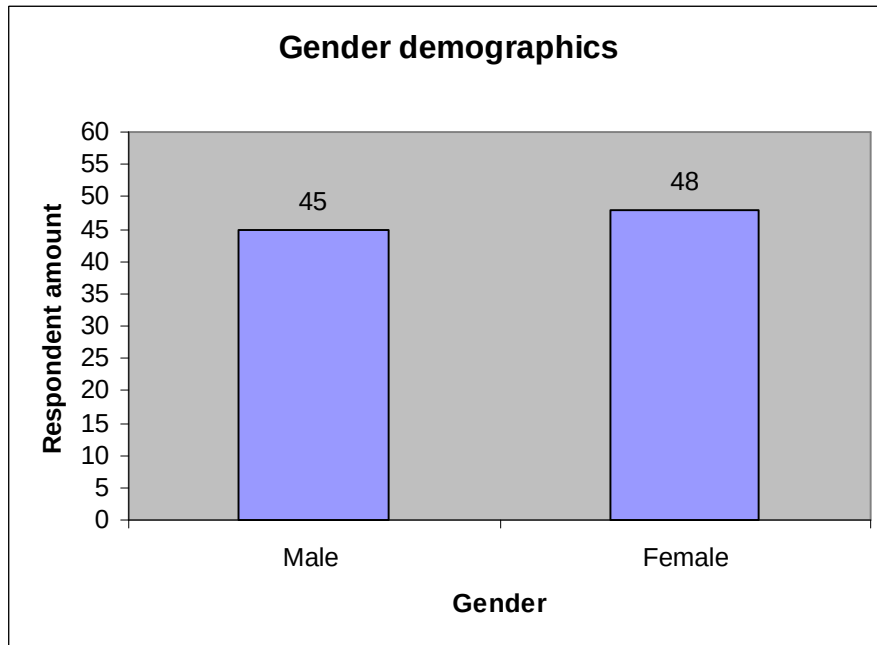
Age (Total 93 Respondents)



This research was aimed at those respondents aged above 18 years, as independent decision making was one of the exclusion criteria, so the absence of those under 18 was enforced by the methodology.

There is a good spread across the age brackets, with 52% falling between 30 and 45, although possibly with the exception of a relative lack of senior pensioners. This shows up later in the results with some inconclusive results when dealing with this age bracket.

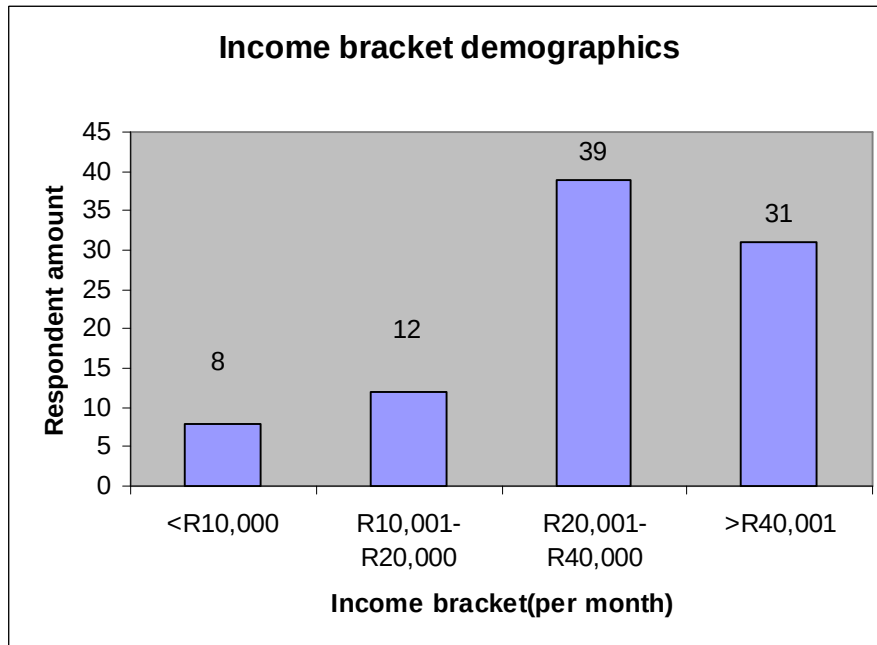
Gender (Total 93 Respondents)



There is a nice spread between male and female respondents, with the female gender slightly edging their male counterparts by 52% to 48%. This allows some statistically robust conclusions regarding gender to emerge.

Gender is important when taken in conjunction with the current and targeted demographic profile of private hospital facilities in order to cater for varying needs.

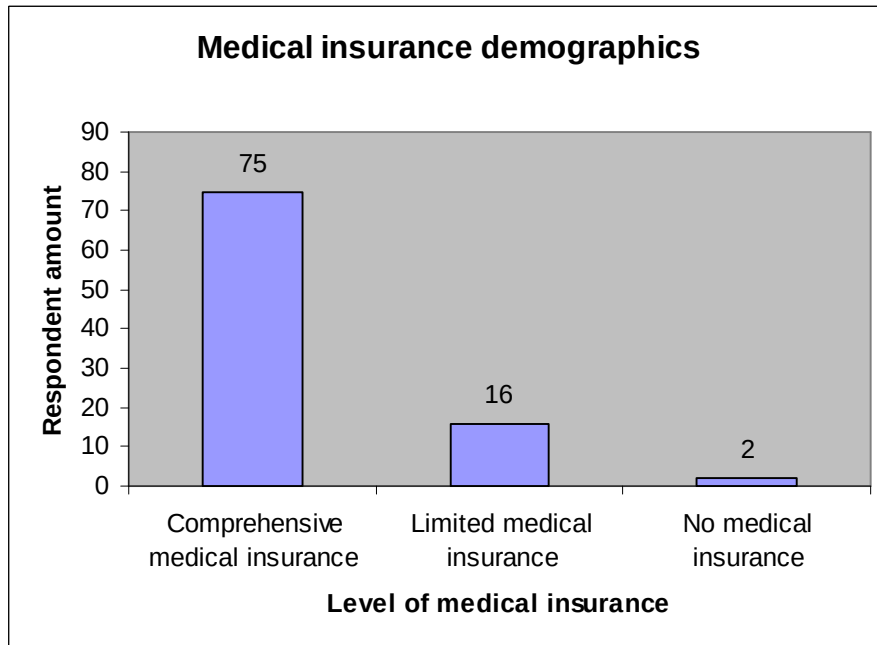
Income bracket (Total 90 Respondents)



As discussed in the limitations section, the methodology predisposed to a slant towards the higher earning demographics. This means that the results of this research should be taken in proper context, especially when applied to those with lower earning potential.

The choice preferences of those with differing earning potentials will be important to private hospital facility managers in areas of more or areas of less affluence, and help with catering to the target market and spending resources on areas adding value to the end consumer.

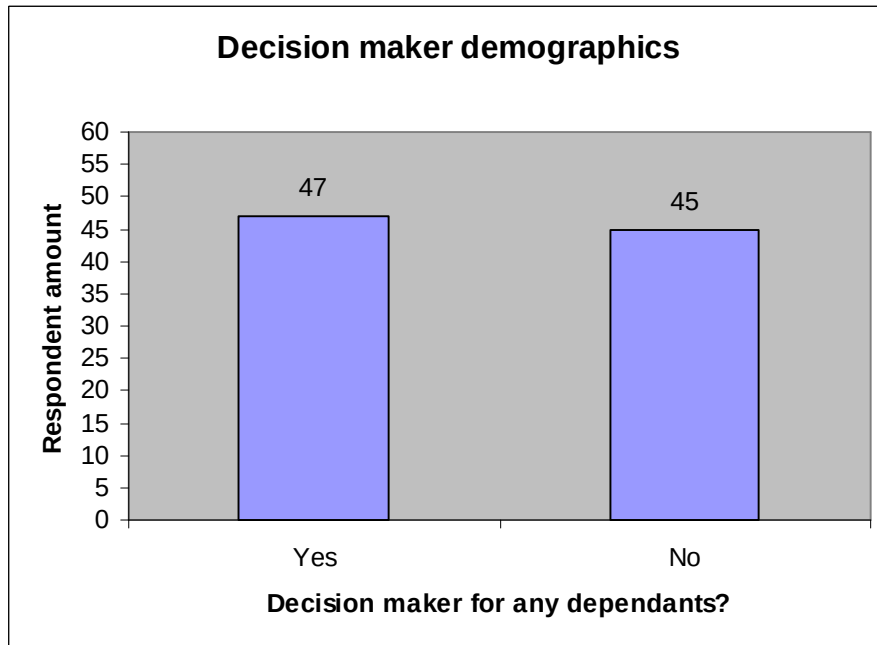
Medical Insurance (Total 93 Respondents)



The overwhelming tendency of the respondents is towards those with comprehensive medical insurance, and care must be taken when analysing the results to adequately take this into account.

This statistic should be examined in conjunction with studies by the private hospital managers on the proportion of their facility's end consumers that have comprehensive or limited medical aid. If there are a high proportion of end consumers with no medical aid, then this research will be of limited use.

Decision maker for any dependents (Total 92 Respondents)

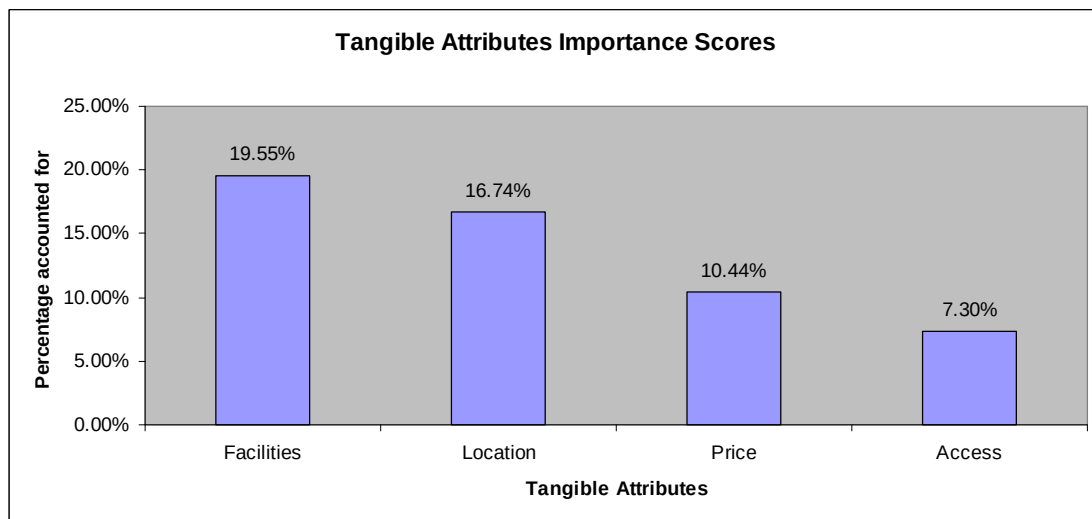


There is almost a 50/50 split between decision makers and non-decision makers.

Decision makers are defined for the purposes of this research as those who make health decisions for any other than themselves, and this will be relevant as this demographic then obviously has a higher pulling power for the private hospital facilities and may have differing importances when making their decisions.

4.4. RESULTS TO RESEARCH QUESTION 1

Consumer preferences in the choice of hospital facilities are influenced by tangible factors. As such the location, facilities, access and price play a role in consumer decision making with regard to hospital facility choice. The research then divides the tangible attributes into their component parts, with the results as follows:



This means that of the tangible attributes affecting the choice of private hospital facilities, the respondents as a whole considered the perceived facilities, identified as being leading edge to out-dated, to be the most important.

4.4.1. Facilities

Executive Summary

The perceived facilities at private hospitals were the most important attribute for respondents out of the offered tangible attributes, with an average attribute score of 19.55.

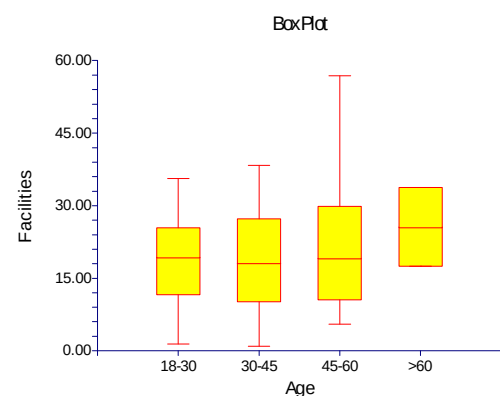
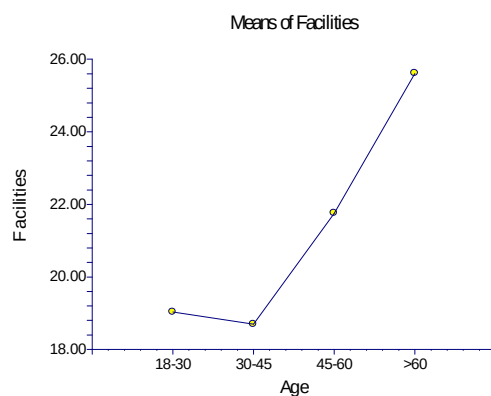
When broken down into the constituent demographics, a statistically significant difference was found between the importance of perceived quality

of facilities between males and females, with females having a higher importance level for this attribute. A statistically unconfirmed graphical trend was also noted in the age demographic.

Facilities by Age

Significant finding: No, the opinion of the importance of facilities does not significantly vary across age brackets.

From a total of 93 respondents, there graphically appears to be a trend towards increasing importance of this the quality of facilities with increasing age. This is not confirmed by the statistics however, which found a 58% chance that the differing age groups may have the same importance. It should be noted however that the relatively minor amount of respondents in the 45-60 and especially the >60 year old age groups may have distorted the statistical analysis. The larger sample segments obviously have smaller standard error as the increase in data allows for more accuracy.



Probability level
0.587721 (59%)

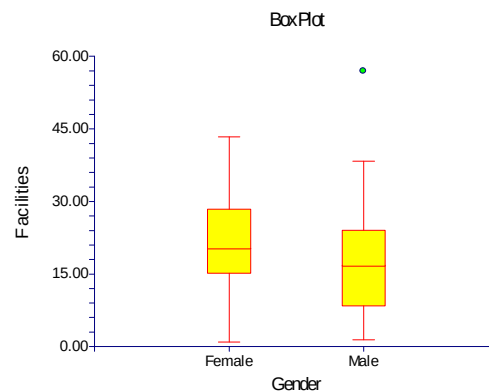
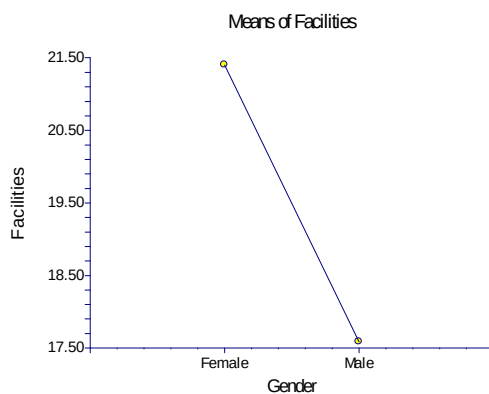
Means Section

Term	Count	Mean	Standard Error
All	93	19.554	
18-30	24	19.031	2.112
30-45	48	18.693	1.493
45-60	19	21.754	2.374
>60	2	25.61	7.317

Facilities by Gender

Significant finding: Yes, the opinion of the importance of facilities does significantly vary across gender brackets.

With a good equal spread across genders, there is graphical and statistical evidence that there is a differing importance of perceived facility quality across genders, with females finding this attribute more important than males in making their decision-making criteria. The statistics showed only a 7% probability from the data that males and females have the same importance score for facility quality, which falls below the threshold for this study.



Probability level
0.073731 (74%)

Means Section

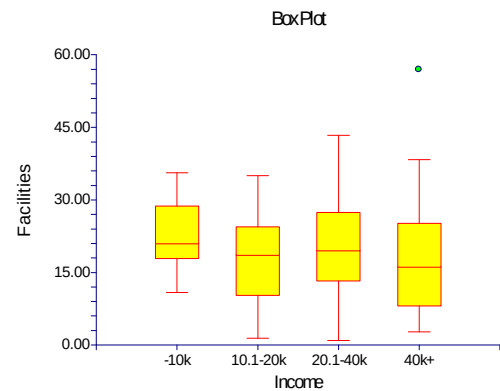
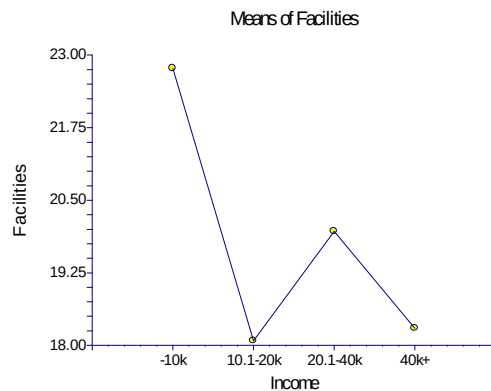
Term	Count	Mean	Standard Error
All	93	19.554	
Female	48	21.400	1.467
Male	45	17.585	1.515

Facilities by Income

Significant finding: No, the opinion of the importance of facilities does not significantly vary across income brackets.

Whilst the facility quality mean importance for the lowest income bracket was noticeably higher than the rest, the low amount of respondents in this bracket

make this data of limited use. This is confirmed by the statistical ANOVA test that found a probability that there is no difference across income brackets to be at 69%. As such there were no significant findings across the differing income brackets according to facility importance scores.



Probability level
0.688805 (69%)

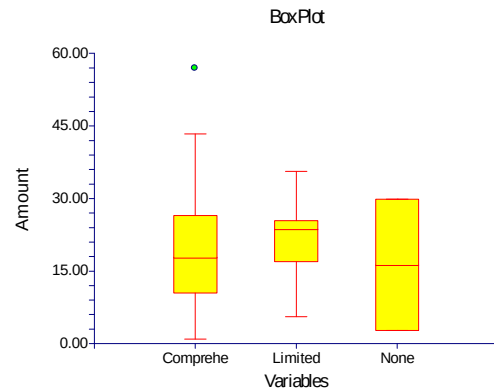
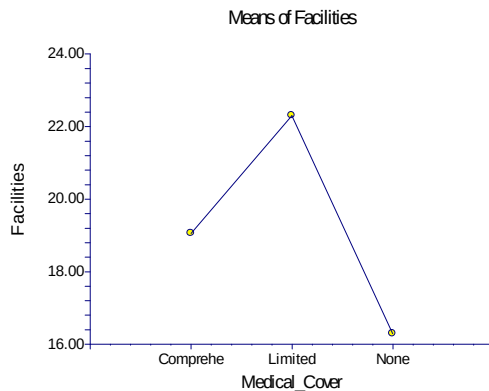
Means Section

Term	Count	Mean	Standard Error
All	90	19.385	
-10k	8	22.77	3.707
10.1-20k	12	18.076	3.026
20.1-40k	39	19.962	1.679
40k+	31	18.291	1.883

Facilities by Medical Cover

Significant finding: No, the opinion of the importance of facilities does not significantly vary across medical insurance cover brackets.

The importance of facility quality seems graphically to peak in those respondents with limited medical cover, although there was no statistically significant evidence to support this. The lack of responses with no medical cover mean these results should be considered with caution.



Probability level
0.472859 (47%)

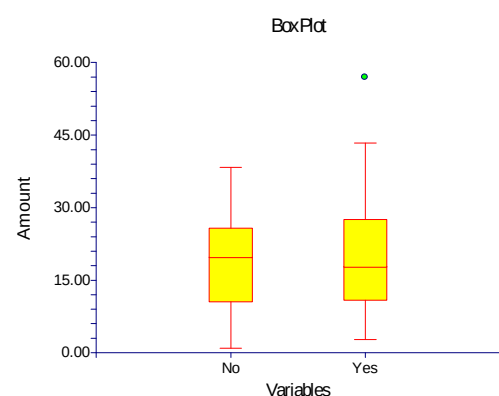
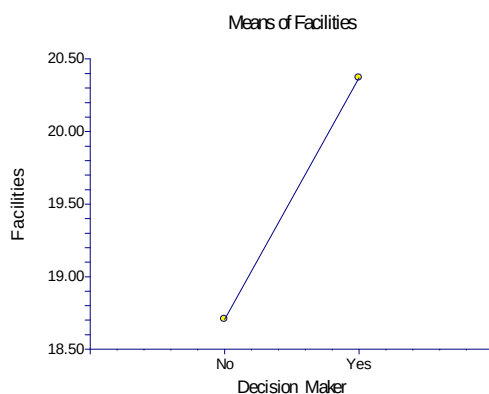
Means Section

Term	Count	Mean	Standard Error
All	93	19.554	
Comprehensive	75	19.055	1.191
Limited	16	22.301	2.579
None	2	16.29	7.294

Facilities by Decision Makers

Significant finding: No, the opinion of the importance of facilities does not significantly vary across decision maker brackets.

Whilst the means of the importance scores of facility quality for those who make decisions for dependants is higher than those who do not, there is no statistical evidence that these two demographic groups significantly differ from each other.



Probability level

0.443433 (44%)

Means Section

Term	Count	Mean	Standard Error
All	92	19.555	
No	45	18.705	1.545
Yes	47	20.369	1.512

4.4.2. Location***Executive Summary***

Location was also deemed to be an important attribute to consider according to the respondents decision making process, with an average attribute importance score of 16.74.

A significant finding when analysing the importance of location is that there is a statistical difference in the importance of location in respondent decision making across the varying income demographics, with a peak in importance scores amongst those in the R10,000 to R20,000 per month income bracket.

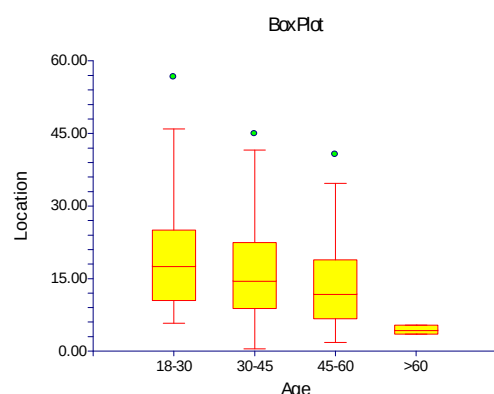
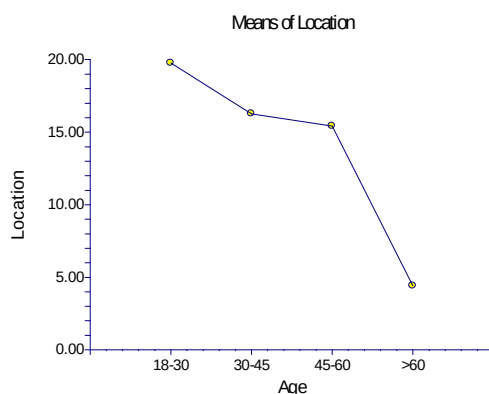
Interesting graphical trends were noted in the importance of location across the age, gender, medical insurance cover and decision maker demographics. These are discussed in the relevant sections.

Also of note was the fact that the demographics with the lowest importance scores in the location attribute were those over sixty years of age and those with no medical insurance cover. As these demographics both had limited amounts of respondents, further research would be needed for any significant conclusions.

Location by Age

Significant finding: No, the opinion of the importance of facilities does not significantly vary across age brackets.

Graphically the means of the location importance scores appear to be inversely proportional to the actual age. This means as you get older, the importance of location tapers off. This was not found to be statistically significant, however, possibly due to the low number of respondents at the extremes of the age distribution. Further research into this phenomenon may yield more accurate results. The 20% probability that the two groups have the same importance scores, whilst above the threshold for this research, is sufficiently low to justify further research into this matter.



Probability level
0.202986 (20%)

Means Section

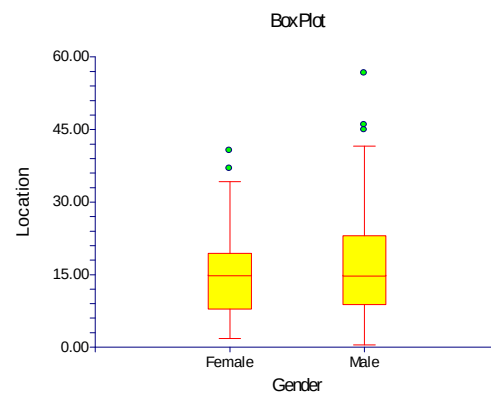
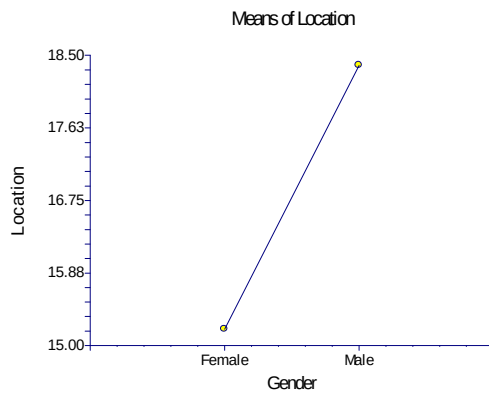
Term	Count	Mean	Standard Error
All	93	16.736	
18-30	24	19.759	2.242
30-45	48	16.262	1.585
45-60	19	15.414	2.520
>60	2	4.405	7.768

Location by Gender

Significant finding: No, the opinion of the importance of facilities does not significantly vary across gender brackets.

The importance of location by gender was graphically noticeably higher in males than females, with a probability of 16% that the two demographics have the same importance scores. This is above the threshold for this

research and as such is not statistically significant, but further research with a larger sample pool may yield more accurate results in this regard.



Probability level
0.167977 (17%)

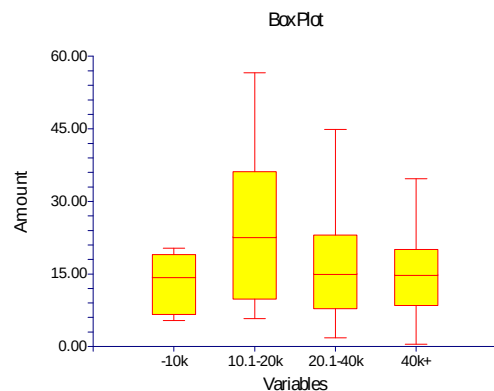
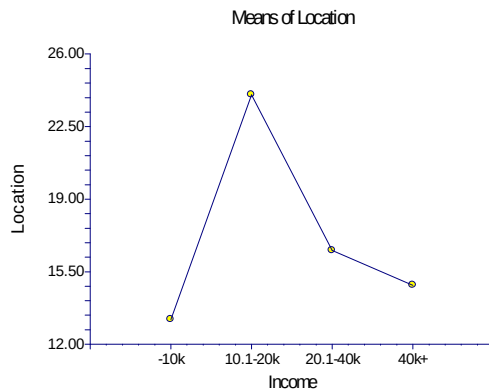
Means Section

Term	Count	Mean	Standard Error
All	93	16.736	
Female	48	15.197	1.592
Male	45	18.378	1.644

Location by Income

Significant finding: Yes, the opinion of the importance of facilities does significantly vary across income brackets.

There was a statistically significant finding that the importance of location differs across the varying income brackets questioned in the questionnaire. Graphically this appears to portray with a spike in the importance of location in the income bracket that earns between R10, 000 and R20, 000 per month. This finding will be discussed further in chapter 5.



Probability level
0.062199 (6%)

Means and Effects Section

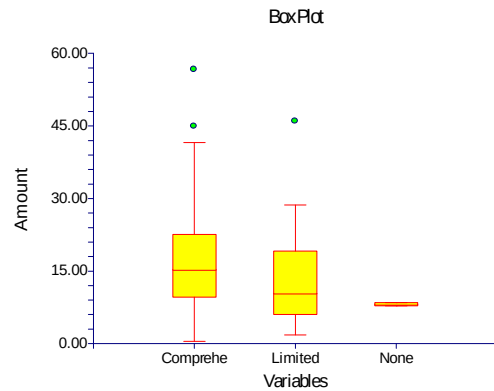
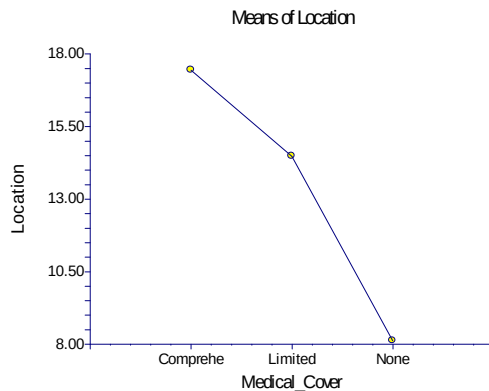
Term	Count	Mean	Standard Error
All	90	16.648	
-10k	8	13.191	3.742
10.1-20k	12	24.034	3.055
20.1-40k	39	16.517	1.694
40k+	31	14.846	1.900

Location by Medical Cover

Significant finding: No, the opinion of the importance of facilities does not significantly vary across medical insurance cover brackets.

Again this graphically represents that the amount of medical cover is inversely proportional to the importance of location when making a decision on private hospitals to attend on a walk in basis. This essentially portrays that those who have to pay more are willing to travel further for medical care, which makes intuitive sense.

This again is not statistically significant, possibly due to the low amount of respondents in the limited medical insurance cover and no medical insurance cover demographics. Further research with a more balanced representation of the demographics may yield more accurate results In this regard.



Probability level
0.340083 (34%)

Means Section

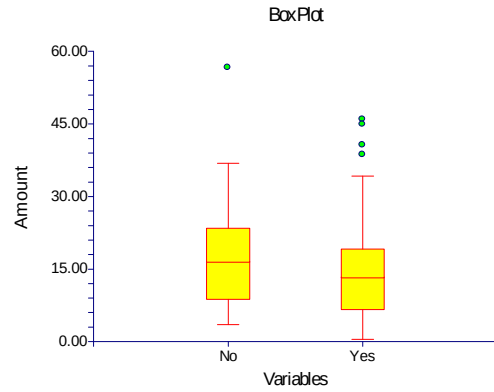
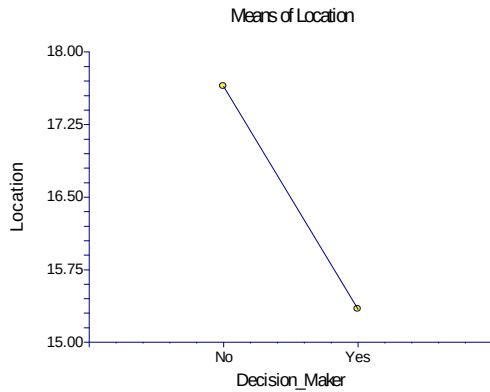
Term	Count	Mean	Standard Error
All	93	16.736	
Comprehensive	75	17.447	1.278
Limited	16	14.480	2.769
None	2	8.12	7.832

Location by Decision Makers

Significant finding: No, the opinion of the importance of facilities does not significantly vary across decision maker brackets.

The mean of the importance of location when analyzed from the decision maker perspective shows that there is a lower importance score mean from those who have dependants for which they make decisions. This intuitively means that those with dependants are less interested in how far away the private hospital facility is.

There are, however, no statistically significant findings in this study to confirm this.



Probability level
0.310898 (31%)

Means and Effects Section

Term	Count	Mean	Standard Error
All	92	16.467	
No	45	17.643	1.615
Yes	47	15.340	1.580

4.4.3. Price

Executive Summary

Price was ranked third on the tangible importance rankings used to determine decisions by the respondents, and fifth overall. Thus the findings in price should be taken in context, with price only allowing for ten percent of the variation in decision making amongst respondents.

There were significant differences found in the importance of price across the varying age and gender demographics. Specifically it was found that the age extremes found price to be more important when making a decision, whilst females also considered it a more important factor to consider than males.

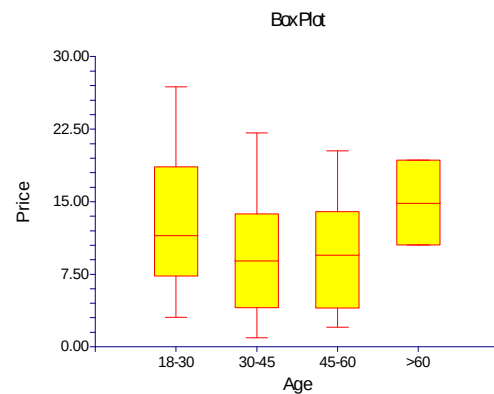
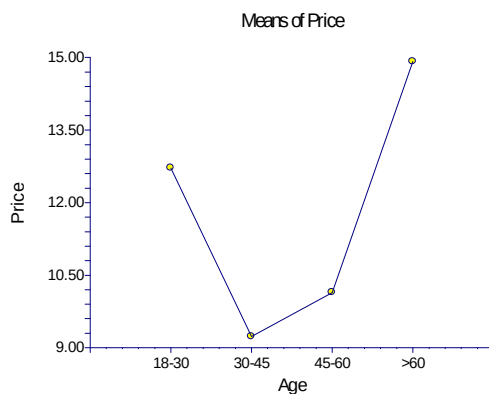
There were also indications that price as a decision making criteria varies across the level of medical insurance cover, income bracket and decision maker demographics, although there was insufficient statistical evidence to conclusively support this.

Price by Age

Significant finding: Yes, the opinion of the importance of facilities does significantly vary across age brackets.

The importance of price varies at the extremes of age, with the middle age brackets placing a lower importance on the attribute than the extremes when making a decision concerning private hospital facilities. This intuitively would seem to correlate to the current earning potential for younger respondents and the amount of health care required and future earnings potential for older respondents (meaning a conservation of resources).

This is a statistically significant finding with a probability of only 7% that all age demographics place the same importance on price as a decision making criteria.



Probability level
0.073022 (7%)

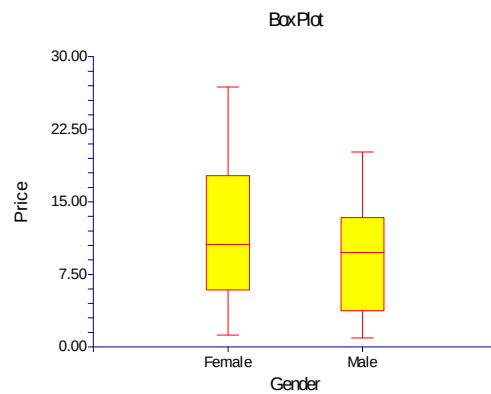
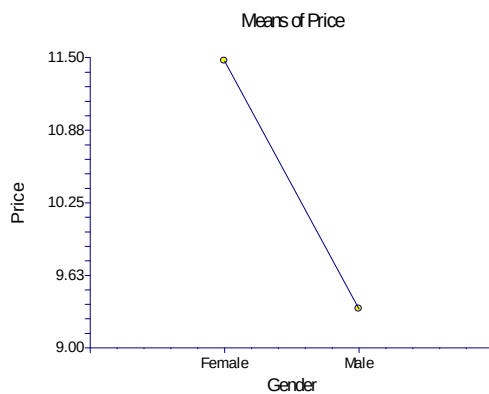
Means and Effects Section

Term	Count	Mean	Standard Error
All	93	10.437	
18-30	24	12.715	1.169
30-45	48	9.229	0.826
45-60	19	10.141	1.313
>60	2	14.915	4.0499

Price by Gender

Significant finding: Yes, the opinion of the importance of facilities does significantly vary across gender brackets.

Again, this is a statistically significant finding that males place less importance on price than females. The probability that the two genders place equal importance on price is 8%.



Probability level
0.078728 (8%)

Means and Effects Section

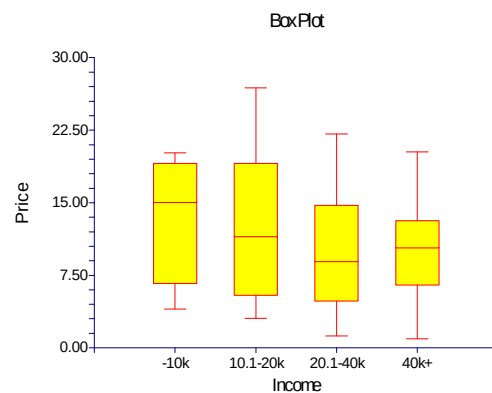
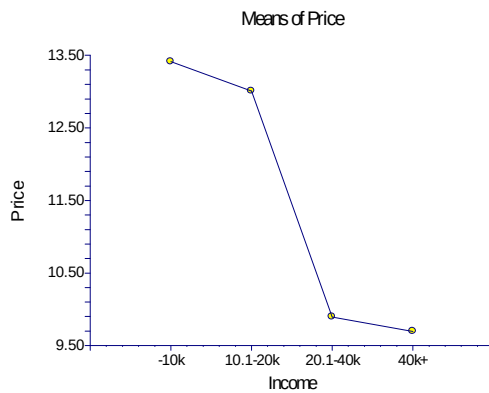
Term	Count	Mean	Standard Error
All	93	10.437	
Female	48	11.471	0.835
Male	45	9.335	0.863

Price by Income

Significant finding: No, the opinion of the importance of facilities does not significantly vary across income brackets.

Graphically there is an interesting trend that shows a decreasing importance placed on price as the respondents earning power increases. This intuitively makes sense. There is not, however, enough statistical evidence to confirm

this, possibly due to the low numbers at the extremes of the earning spectrum in this survey and further research may confirm this phenomenon.



Probability level
0.162047 (16%)

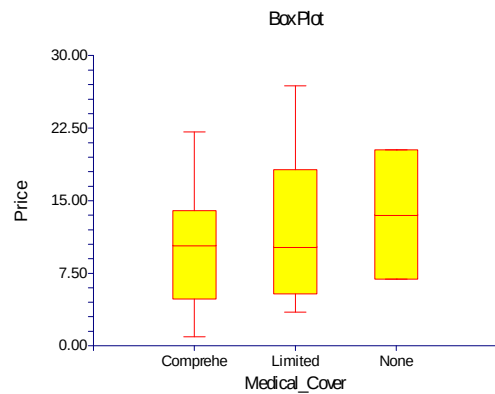
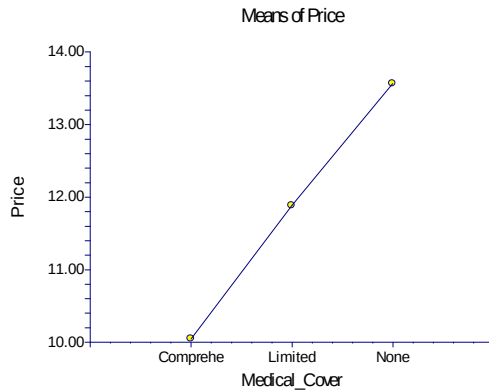
Means and Effects Section

Term	Count	Mean	Standard Error
All	90	10.553	
-10k	8	13.412	2.052
10.1-20k	12	13.007	1.676
20.1-40k	39	9.894	0.929
40k+	31	9.694	1.042

Price by Medical Cover

Significant finding: No, the opinion of the importance of facilities does not significantly vary across medical insurance cover brackets.

Graphically, the importance of price increases as the medical insurance cover decreases. This again is intuitive, although again there is insufficient statistical evidence to confirm this, most likely again due to the low numbers of respondents in the limited medical insurance and no medical insurance demographics.



Probability level
0.394781 (39%)

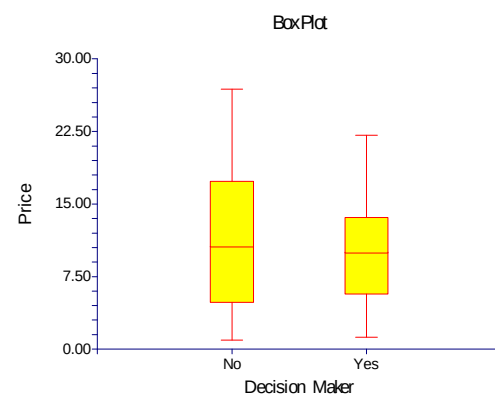
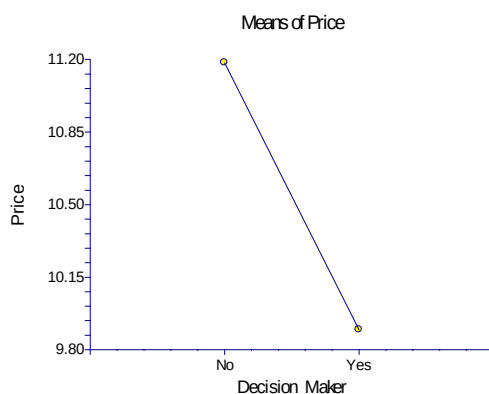
Means and Effects Section

Term	Count	Mean	Standard Error
All	93	10.437	
Comprehensive	75	10.045	0.676
Limited	16	11.883	1.465
None	2	13.565	4.144

Price by Decision Makers

Significant finding: No, the opinion of the importance of facilities does not significantly vary across decision maker brackets.

A minor difference in the importance of price between those with dependants and those without could indicate a slight tendency for those with dependants to concern themselves more with the price, although this cannot be statistically proven with this research.



Probability level
0.291584 (29%)

Means and Effects Section

Term	Count	Mean	Standard Error
All	92	10.526	
No	45	11.184	0.867
Yes	47	9.896	0.849

4.4.4. Access

Executive Summary

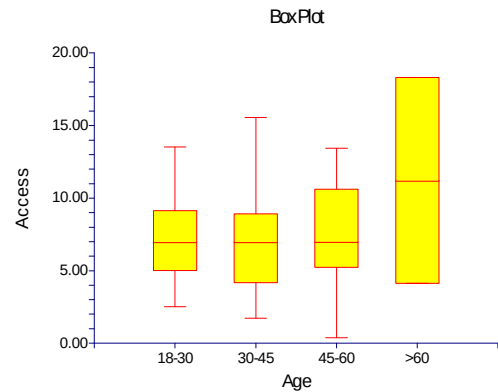
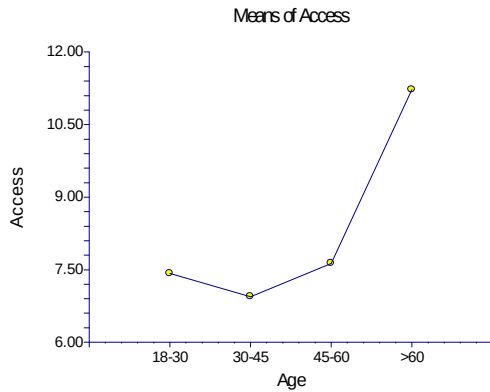
Accounting for only 7.30% of the importance in decision making amongst these criteria, and ranking last amongst both the tangible and total importances, the results according to access should be taken in proper context.

The research showed no significant findings across any of the demographics, although the age, gender and medical insurance cover demographics showed interesting trends that may be investigated further.

Access by Age

Significant finding: No, the opinion of the importance of access does not significantly vary across age brackets.

The importance of access seemed to vary widely at the high end of the age demographic, although with the small amount of respondents over 60 this result has little or no real meaning. Intuitively this may suggest a wide spread of access demands at the higher age groups and maybe a topic for future research.



Probability level
0.333160 (33%)

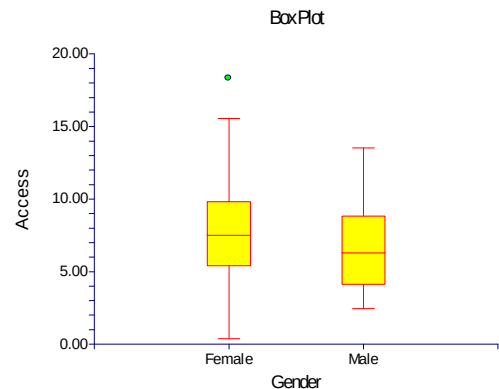
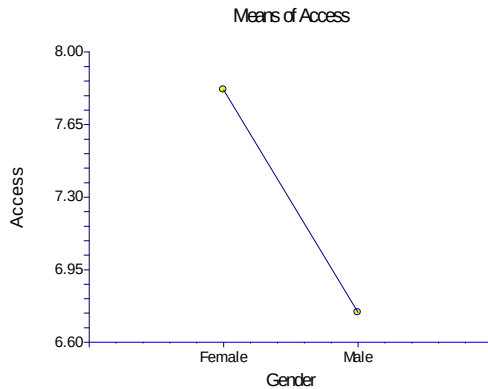
Means and Effects Section

Term	Count	Mean	Standard Error
All	93	7.297	
18-30	24	7.420	0.689
30-45	48	6.941	0.487
45-60	19	7.63	0.774
>60	2	11.22	2.386

Access by Gender

Significant finding: No, the opinion of the importance of access does not significantly vary across gender brackets.

A slightly lower mean but appreciably lower spread for the importance of access for males as opposed to females came out of this study. This may mean that females vary widely in the importance of access in their decision making criteria when choosing a private hospital facility. This cannot be statistically confirmed in this study, although the probability of the two groups having the same importance values for access is 12%, only slightly above the threshold for this research. Further research is required for any definitive conclusions.



Probability level
0.126644 (13%)

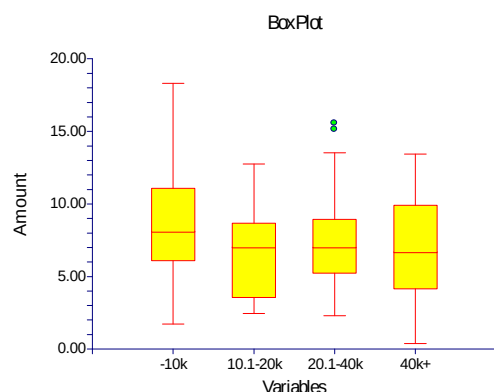
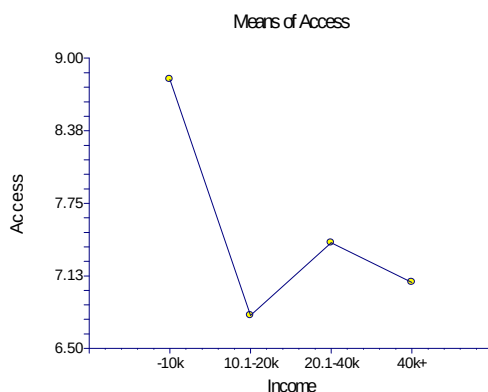
Means and Effects Section

Term	Count	Mean	Standard Error
All	93	7.297	
Female	48	7.817	0.484
Male	45	6.743	0.500

Access by Income

Significant finding: No, the opinion of the importance of access does not significantly vary across income brackets.

There graphically seems to be an increased importance for those at the lower end of the earning power demographic, although this should be taken in proper context considering the small amount of respondents in this demographic. This is not statistically significant.



Probability level
0.569156 (57%)

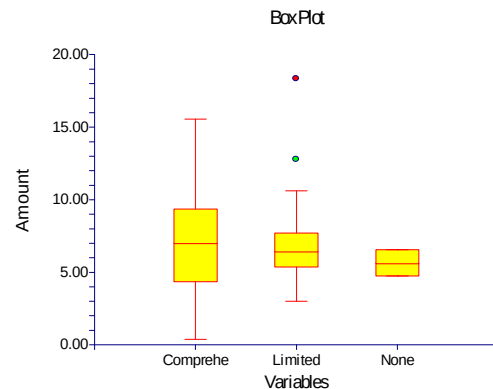
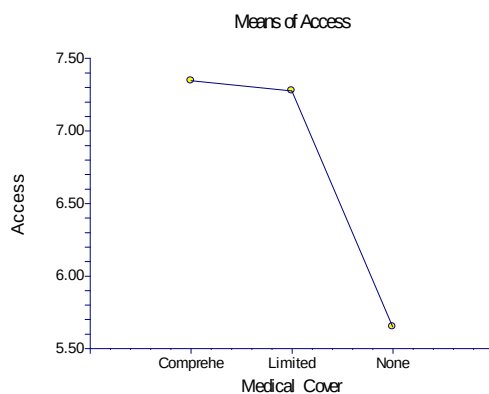
Means and Effects Section

Term	Count	Mean	Standard Error
All	90	7.334	
-10k	8	8.817	1.207
10.1-20k	12	6.783	0.985
20.1-40k	39	7.409	0.546
40k+	31	7.069	0.613

Access by Medical Cover

The importance of access drops off sharply in those without medical cover, although this must be taken in context considering the small amount of respondents in this demographic. The data in this research is not statistically significant. Further research is required in order to come to any definitive conclusions.

Significant finding: No, the opinion of the importance of access does not significantly vary across medical insurance cover brackets.



Probability level
0.786339 (79%)

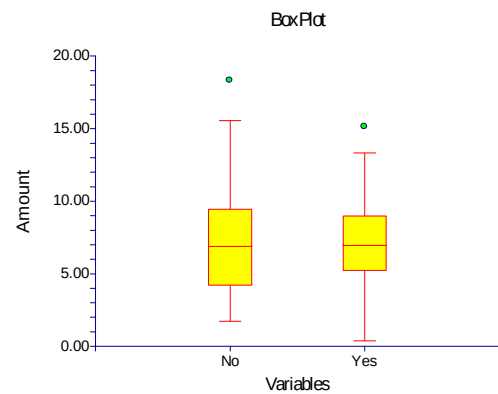
Means and Effects Section

Term	Count	Mean	Standard Error
All	93	7.297	
Comprehensive	75	7.346	0.393
Limited	16	7.276	0.853
None	2	5.65	2.412

Access by Decision Makers

Graphically the importance of access across the decision maker demographic is very close, and this is supported by the statistics which show an 83% chance that both demographics have the place the same importance on this attribute.

Significant finding: No, the opinion of the importance of access does not significantly vary across decision maker brackets.



Probability level
0.834300 (83%)

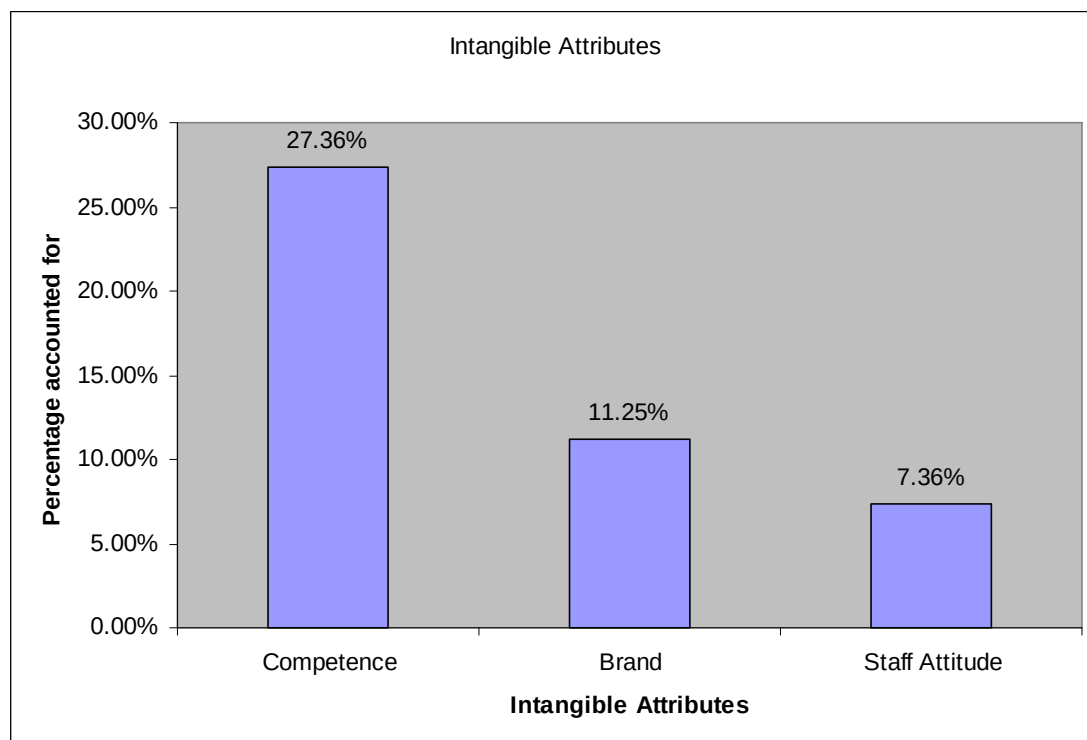
Means and Effects Section

Term	Count	Mean	Standard Error
All	92	7.327	
No	45	7.404	0.507
Yes	47	7.254	0.497

4.5. RESULTS TO RESEARCH QUESTION 2

Consumer preferences are influenced by the intangible attributes affecting perceptions at a private hospital facility. As such, the perceived staff competence; as well as the perceptions of staff attitude at that institution and brand association plays a role in consumer decision making.

An overview of the importances of the intangible attributes according to the research is graphically portrayed:



The results for all respondents show a marked importance of perceived staff competence as an intangible decision making attribute. Of all the attributes tested in this research, competence ranked first, brand fourth and staff attitude sixth out of seven in total.

4.5.1. Competence

Executive Summary

The importance of perceived staff competency in choosing a private hospital facility, as measured by the research, emerged as the clear leader with 27.36% of respondents' variation in choice arising from this attribute.

There were also multiple statistically significant findings:

- The importance of staff competency was found to vary across age groups, with the extremes of age placing a lower importance on this attribute than the middle age demographics.

- Males were found to place a significantly higher importance on this attribute for decision making than females.

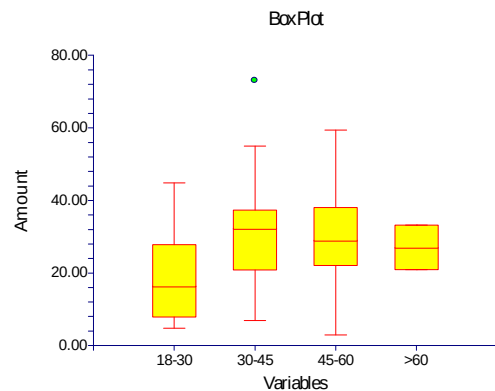
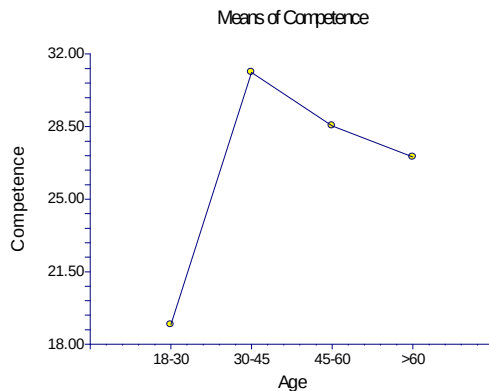
- The income brackets at the top end of the earning spectrum were found to place increasing importance on this attribute.

- Respondents who had dependants to make decisions for also placed a significantly higher amount of importance on this attribute.

Competence by Age

Significant finding: Yes, the opinion of the importance of staff competence does significantly vary across age brackets.

The importance of staff competency was lowest in the bottom age bracket in this study, peaking in the 30-45 age brackets before tailing off again in the higher age demographics. This again may intuitively reflect the changing expectations according to earning power and cost involved. This was statistically significant with a probability of 5% that the importance of staff competency was equal across all age demographics.



Probability level
0.004975 (0.5%)

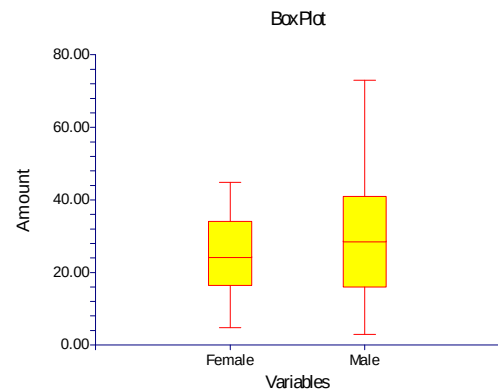
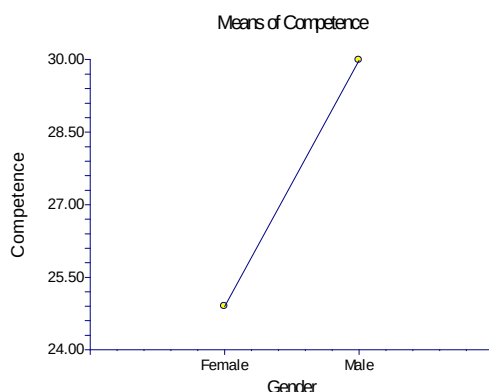
Means and Effects Section

Term	Count	Mean	Standard Error
All	93	27.358	
18-30	24	18.940	2.700
30-45	48	31.117	1.909
45-60	19	28.531	3.035
>60	2	27.03	9.354

Competence by Gender

Significant finding: Yes, the opinion of the importance of staff competence does significantly vary across gender brackets.

Males placed a statistically higher importance value on this attribute than females, with only an 8% chance that the importances were equal across the demographics.



Probability level
0.079263 (8%)

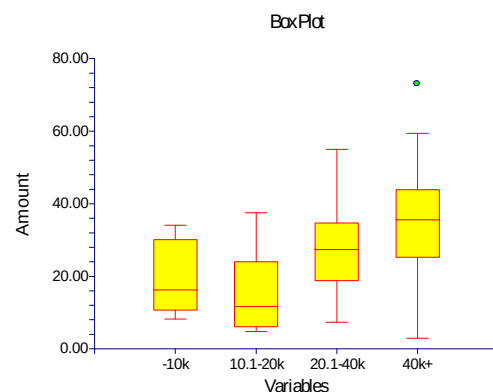
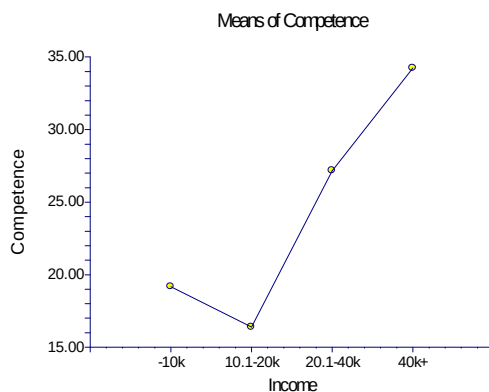
Means and Effects Section

Term	Count	Mean	Standard Error
All	93	27.358	
Female	48	24.896	1.994
Male	45	29.985	2.060

Competence by Income

Significant finding: Yes, the opinion of the importance of staff competence does significantly vary across income brackets.

The importance values in the lower income bracket demographics stayed low before showing a sharp upward trend as earning power increases. This finding is statistically significant. This intuitively may reflect the respondents increased expectations as earning power and ability to pay increases.



Probability level
0.000288 (0.02%)

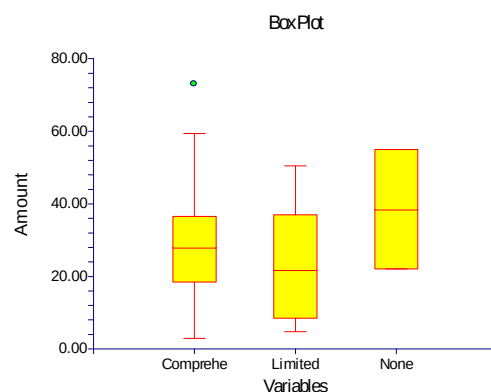
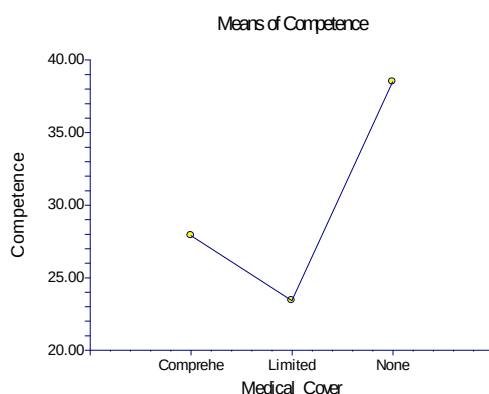
Means and Effects Section

Term	Count	Mean	Standard Error
All	90	27.449	
-10k	8	19.163	4.530
10.1-20k	12	16.385	3.699
20.1-40k	39	27.160	2.052
40k+	31	34.233	2.301

Competence by Medical Cover

Significant finding: No, the opinion of the importance of staff competence does not significantly vary across medical insurance cover brackets.

This is the only demographic in the staff competency attribute not to show a statistically significant difference between demographics. A sharp upward slope in the mean of those without medical insurance cover should be taken in context considering the low amount of respondents in this demographic.



Probability level
0.267764 (27%)

Means and Effects Section

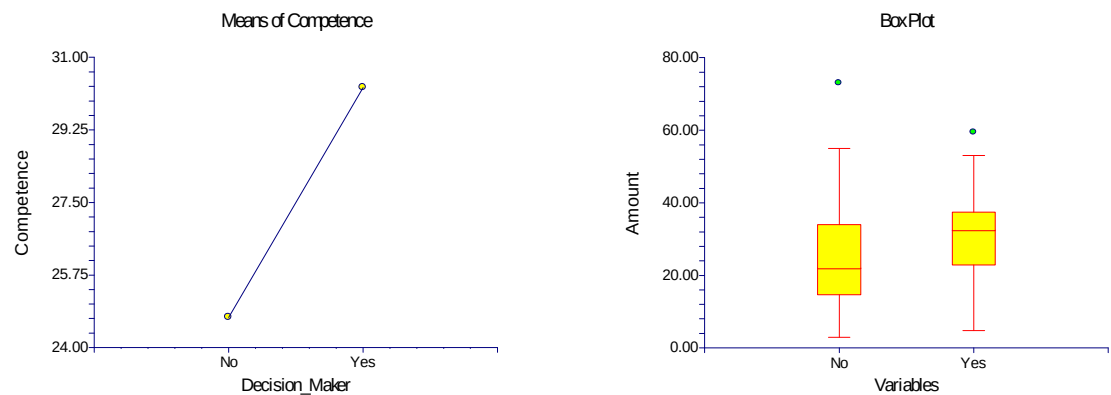
Term	Count	Mean	Standard Error
All	93	27.358	
Comprehensive	75	27.902	1.608
Limited	16	23.419	3.482
None	2	38.505	9.849

Competence by Decision Makers

Significant finding: Yes, the opinion of the importance of staff competence does significantly vary across decision maker brackets.

Again, those with who make decisions for others with regards to healthcare placed a statistically significantly increased importance on this attribute as

opposed to those who do not. This intuitively fits with the image of wanting the best care for those that are being cared for.



Probability level
0.055910 (6%)

Means and Effects Section

Term	Count	Mean	Standard Error
All	92	27.560	
No	45	24.729	2.044
Yes	47	30.27	2.000

4.5.2. Staff attitude

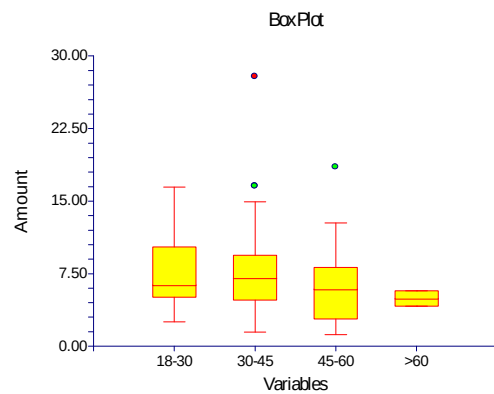
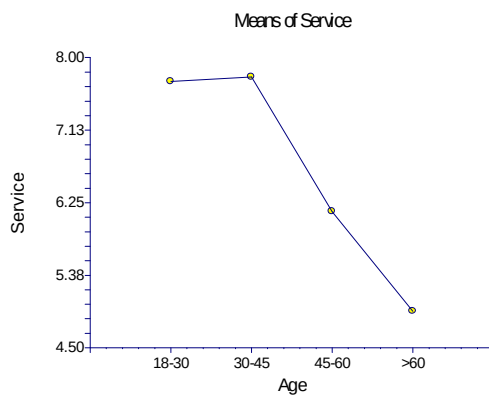
Executive Summary

This attribute was the lowest amongst the intangible attributes and the second lowest in total. No significant findings according to the demographics were evidenced by the research, although there was an interesting graphical trend line showing a decreased importance for this attribute as one gets older.

Staff Attitude by Age

The importance of staff attitude in respondent decision making for private hospitals facilities was shown graphically to drop away in the older demographics, possibly showing a trend to more relaxed attitudes among the elderly. This was not a statistically significant finding however.

Significant finding: No, the opinion of the importance of staff attitude does not significantly vary across age brackets.



Probability level
0.436912 (44%)

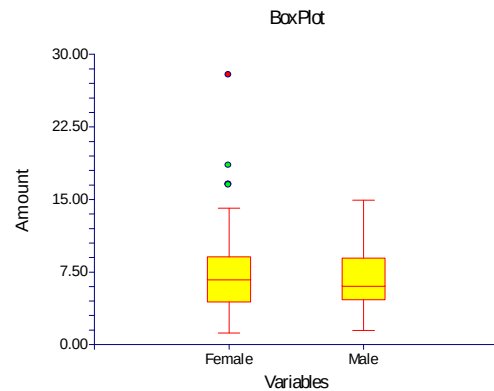
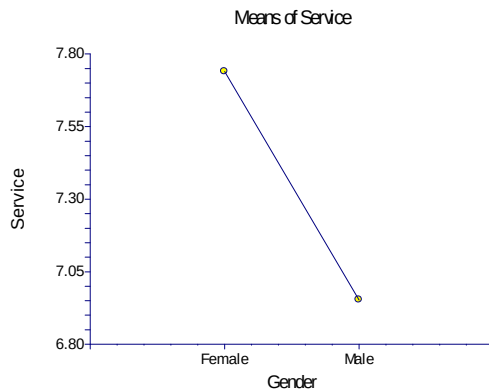
Means and Effects Section

Term	Count	Mean	Standard Error
All	93	7.358	
18-30	24	7.711	0.876
30-45	48	7.764	0.620
45-60	19	6.142	0.985
>60	2	4.94	3.038

Staff Attitude by Gender

Males had a very slightly lower importance towards staff attitude than females; however, this was not shown to be statistically significantly different.

Significant finding: No, the opinion of the importance of staff attitude does not significantly vary across gender brackets.



Probability level
0.379768 (38%)

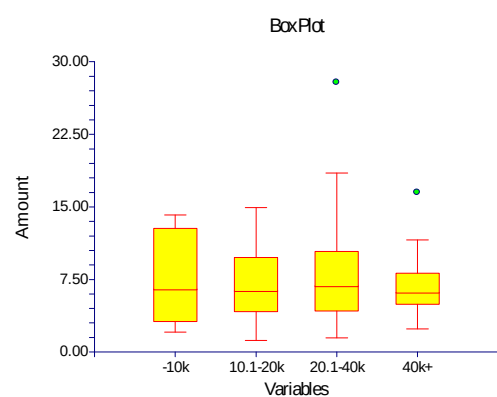
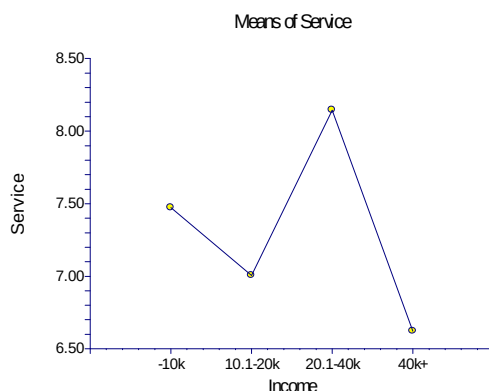
Means and Effects Section

Term	Count	Mean	Standard Error
All	93	7.358	
Female	48	7.739	0.620
Male	45	6.952	0.640

Staff Attitude by Income

Significant finding: No, the opinion of the importance of staff attitude does not significantly vary across income brackets.

Both graphically and statistically there is no evidence that the importance of staff attitude varies amongst income brackets.



Probability level
0.529684 (53%)

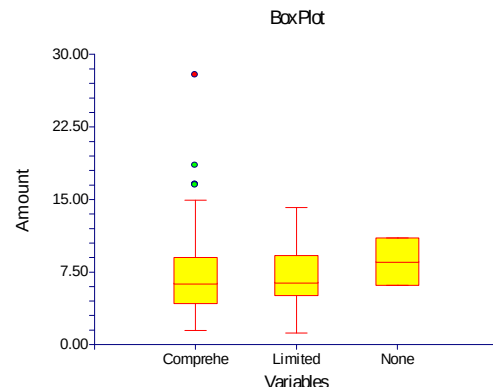
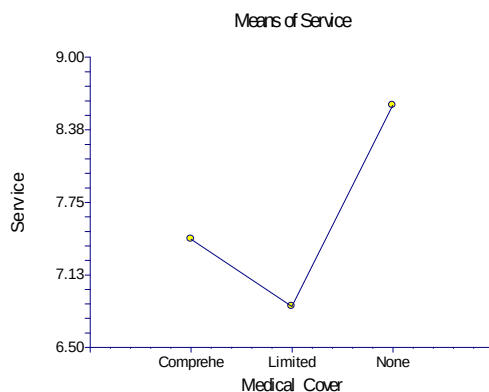
Means and Effects Section

Term	Count	Mean	Standard Error
All	90	7.408	
-10k	8	7.472	1.541
10.1-20k	12	7.005	1.258
20.1-40k	39	8.144	0.698
40k+	31	6.620	0.783

Staff Attitude by Medical Cover

Significant finding: No, the opinion of the importance of staff attitude does not significantly vary across medical insurance cover brackets.

An increased importance in those with no medical insurance cover may be indicative of a less demanding attitude; although with the small amount of respondents in this demographic this would require further research to reach any sort of conclusion.



Probability level

0.818999 (82%)

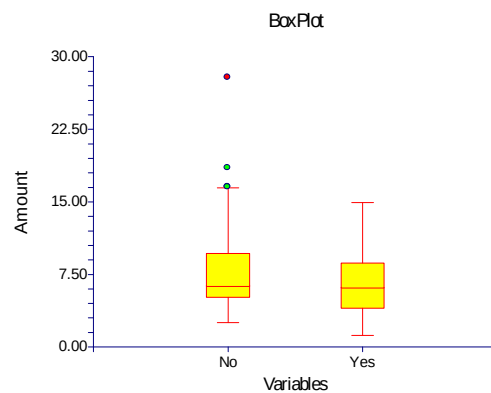
Means and Effects Section

Term	Count	Mean	Standard Error
All	93	7.358	
Comprehensive	75	7.433	0.499
Limited	16	6.854	1.082
None	2	8.585	3.060

Staff Attitude by Decision Makers

Significant finding: No, the opinion of the importance of staff attitude does not significantly vary across decision maker brackets.

Those with dependants showed a marginally lower importance mean than those without, although the difference in these means is negligible compared to other results in this research. However, the probability that both demographics place the same importance on this attribute is relatively low at 13%, which may warrant further research into this area.



Probability level
0.139824 (14%)

Means and Effects Section

Term	Count	Mean	Standard Error
All	92	7.347	
No	45	8.027	0.638
Yes	47	6.696	0.624

4.5.3. Brand

Executive Summary

Brand ranked second in the intangible attributes and fourth overall with an importance score of 11.25%.

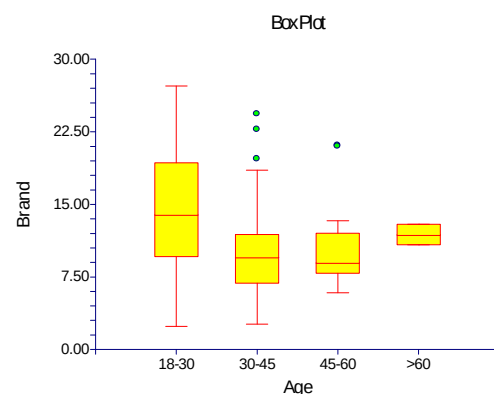
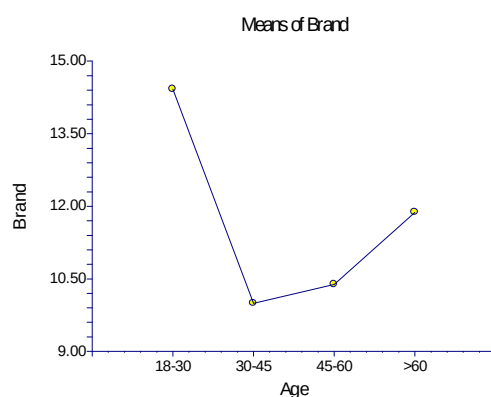
There were shown to be a significant difference in the importance of brand in the decision making process across the age demographics, with the extremes of age showing an increased importance on this attribute as opposed to the age demographics in the middle.

There were also significant differences in the importance of brand across the income bracket demographic; with the importance of brand tailing off as earning power increases; and those with dependents, who placed a lower importance on brand than those without.

Brand by Age

Significant finding: Yes, the opinion of the importance of brand does significantly vary across age brackets.

Again we see the lower and higher age demographics placing a higher importance on this attribute than those in-between. This difference is statistically significant with a probability of only 8% that the age demographics place equal importance on brand.



Probability level
0.007949 (0.8%)

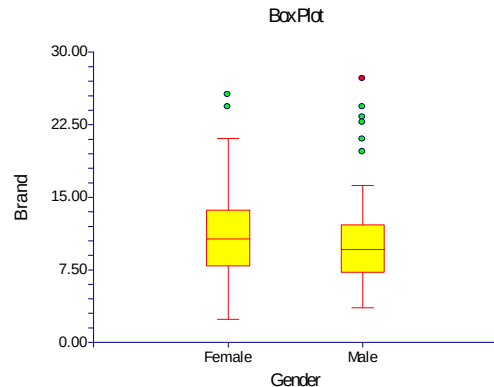
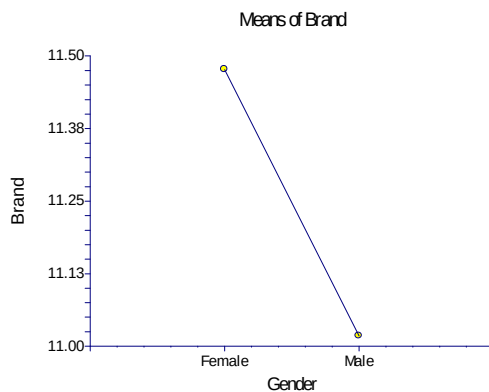
Means and Effects Section

Term	Count	Mean	Standard Error
All	93	11.254	
18-30	24	14.420	1.048
30-45	48	9.990	0.741
45-60	19	10.382	1.178
>60	2	11.875	3.633

Brand by Gender

Very similar statistics for gender across the brand importance attribute mean that there is no evidence of any difference in the importance of brand across demographics.

Significant finding: No, the opinion of the importance of brand does not significantly vary across gender brackets.



Probability level

0.684293 (68%)

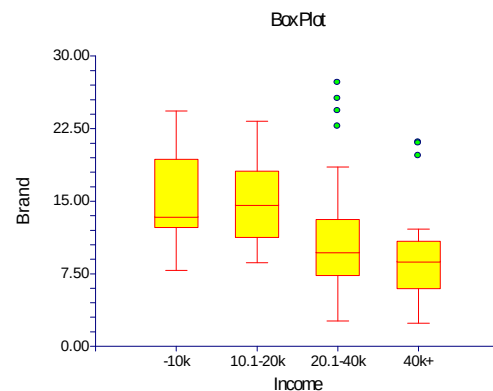
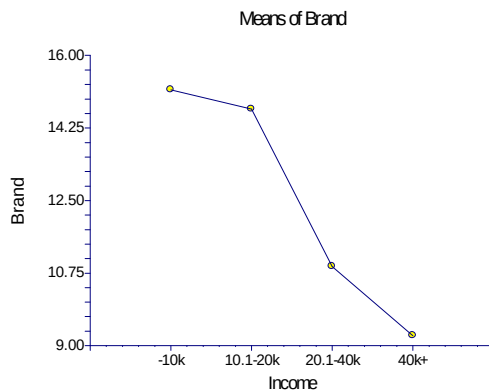
Means and Effects Section

Term	Count	Mean	Standard Error
All	93	11.254	
Female	48	11.476	0.782
Male	45	11.017	0.808

Brand by Income

Significant finding: Yes, the opinion of the importance of brand does significantly vary across income brackets.

There is a statistically significant downward trend in the importance of brand as the respondents increase in earning power. This is most likely due to an increase in the importance of other attributes, as with a fixed total, an increase in the importance of one area will equate in a relative decrease in other attribute importances.



Probability level
0.003033 (0.3%)

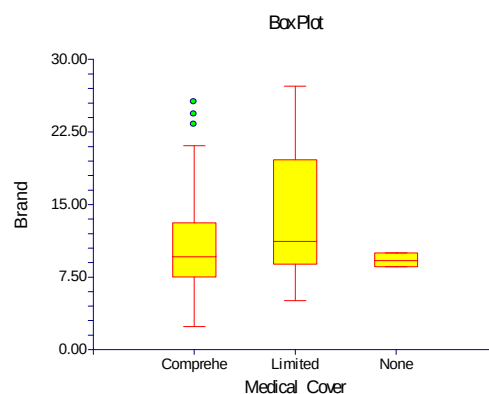
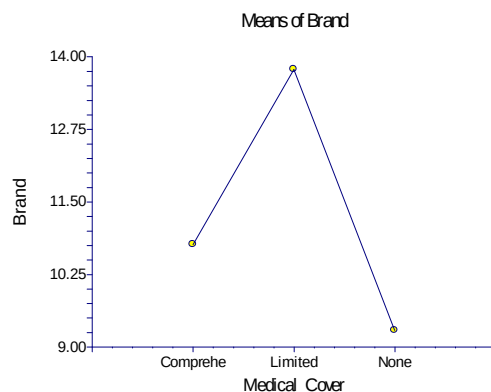
Means and Effects Section

Term	Count	Mean	Standard Error
All	90	11.219	
-10k	8	15.17	1.815
10.1-20k	12	14.705	1.482
20.1-40k	39	10.908	0.822
40k+	31	9.241	0.922

Brand by Medical Cover

Significant finding: No, the opinion of the importance of brand does not significantly vary across medical insurance cover brackets.

Here we see a spike in the importance of brand in the decision making process in those with limited medical insurance cover. This is not statistically significant and may be an anomaly, although with a probability of only 11% that the importance of brand is equal across the medical insurance demographics, this may warrant further research if of interest with a more balanced spread across this demographic.



Probability level
0.111071 (11%)

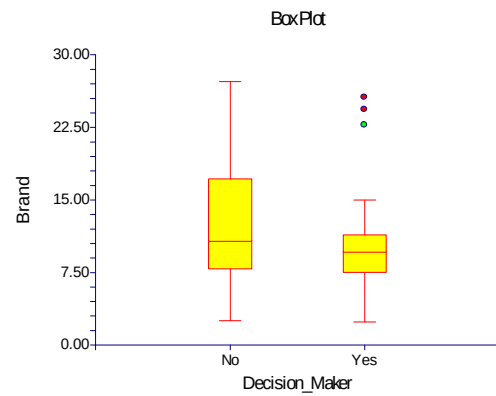
Means and Effects Section

Term	Count	Mean	Standard Error
All	93	11.254	
Comprehensive	75	10.767	0.615
Limited	16	13.783	1.331
None	2	9.285	3.767

Brand by Decision Makers

Significant finding: Yes, the opinion of the importance of brand does significantly vary across decision maker brackets.

There is a significant difference in the importance of brand when making the decision on what private hospital facility to attend, with those with dependants placing a lower importance on this attribute. This is most likely a function of differing priorities between those with dependants and those without.



Probability level
0.058691 (6%)

Means and Effects Section

Term	Count	Mean	Standard Error
All	92	11.213	
No	45	12.302	0.795
Yes	47	10.171	0.778

4.6. Reliability of the importance scores

As discussed in the methodology chapter, the overall importance data was subjected to a crude bootstrap analysis. This method randomly splits the data into a number of groups and compares these to the overall results. Any aberrations in this method point towards outliers overly affecting results, inconsistencies in the data analysis and any other potential flaws in the original data set.

The original data set was randomly split into 50 component respondents, with only these respondents then being analysed. This was then repeated thirty times, giving thirty random samples of 50 respondents each. At least thirty samples were important as they allowed the sample means to be analysed according to the central tendency theory.

By doing this random splitting of the data, any extreme respondents should cause undue stress in the ensuing smaller data sets and this will reflect in bootstrap samples that have significantly different means to the full data analysis. The bootstrap samples are a spread, however, and as such have a mean and standard deviation, which is then compared back to the mean of the full data set.

The bootstrap methodology is an added measure taken by this research report to ensure internal validity of the analysis technique and the data set itself.

For this section each attribute will be analysed according to its bootstrap results to ensure that the results discussed earlier in the chapter are valid. The red lines indicate the 90% confidence intervals for the bootstrap sample means; the orange lines show the 90% confidence intervals for the means of the bootstrap sample mean of means; the blue line shows the mean of the bootstrap sample means; and the green line the actual mean of the overall data. The green line should therefore have to be between the red lines, and should be between the orange lines to establish data validity.

4.6.1. Facility Quality

Histogram	Bin Min	Bin Max	Facilities Bin Midpoint	Freq .	Rel. Freq.	Prb. Density
Bin #1	17.80	18.45	18.12	2	0.07	0.10
Bin #2	18.45	19.09	18.77	4	0.13	0.21
Bin #3	19.09	19.74	19.42	11	0.37	0.57
Bin #4	19.74	20.38	20.06	3	0.10	0.15
Bin #5	20.38	21.03	20.71	6	0.20	0.31
Bin #6	21.03	21.68	21.35	4	0.13	0.21
Conf. Intervals (One-Sample)		Facilities				
Sample Size	30					
Sample Mean of Means	19.77					
Sample Std Dev	1.01					
Confidence Level(Samples)		90%				
Lower Limit	18.30					
Upper Limit	21.38					
Confidence Level(Samples Mean)		90%				
Degrees of Freedom	29					
Lower Limit	19.45					
Upper Limit	20.08					
Overall Research Mean		19.55				

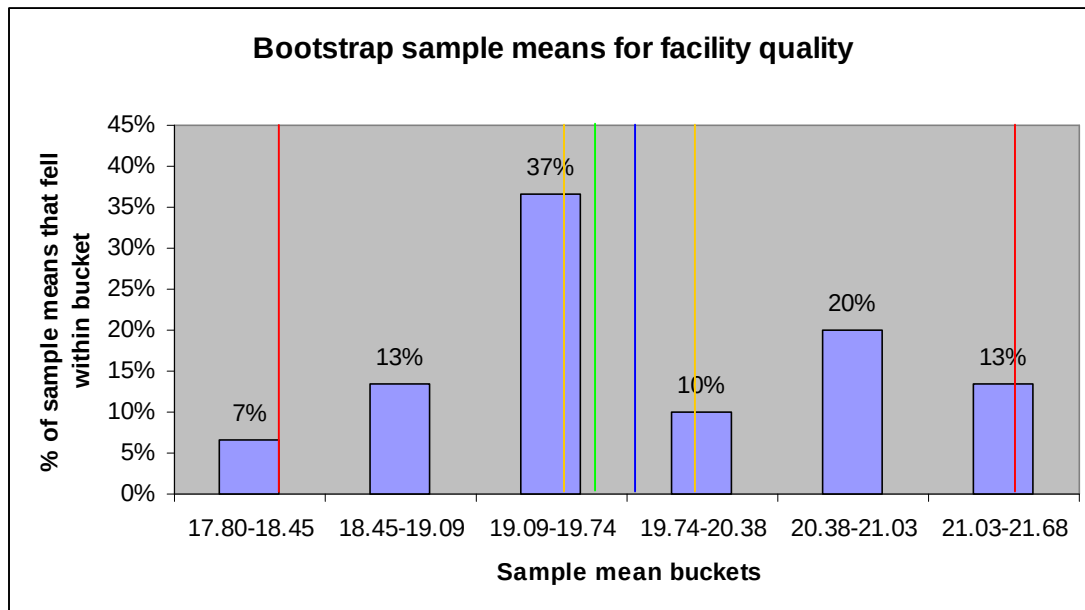
90% confidence interval for sample means

90% confidence interval for sample mean c

Sample mean of means

Overall data mean

90% confidence interval for sample means
90% confidence interval for sample mean of means
Sample mean of means
Overall data mean



The largest bucket of bootstrap samples had a mean of between 19.09 and 19.74, with the actual overall data mean corresponding closely to the bootstrap sample mean of means and staying within all confidence intervals.

4.6.2. Location

Histogram	Bin Min	Bin Max	Location Bin Midpoint	Freq .	Rel. Freq.	Prb. Density
Bin #1	15.23	16.09	15.66	12	0.40	0.47
Bin #2	16.09	16.95	16.52	5	0.17	0.19
Bin #3	16.95	17.81	17.38	6	0.20	0.23
Bin #4	17.81	18.67	18.24	3	0.10	0.12
Bin #5	18.67	19.53	19.10	3	0.10	0.12
Bin #6	19.53	20.39	19.96	1	0.03	0.04
Conf. Intervals (One-Sample)		Location				
Sample Size	30					
Sample Mean of Means	16.94					
Sample Std Dev	1.30					
Confidence Level(Samples)	90%					
Lower Limit	15.54					
Upper Limit	18.83					
Confidence Level(Samples Mean)	90%					
Degrees of Freedom	29					
Lower Limit	16.53					
Upper Limit	17.34					
Overall Research Mean	16.74					

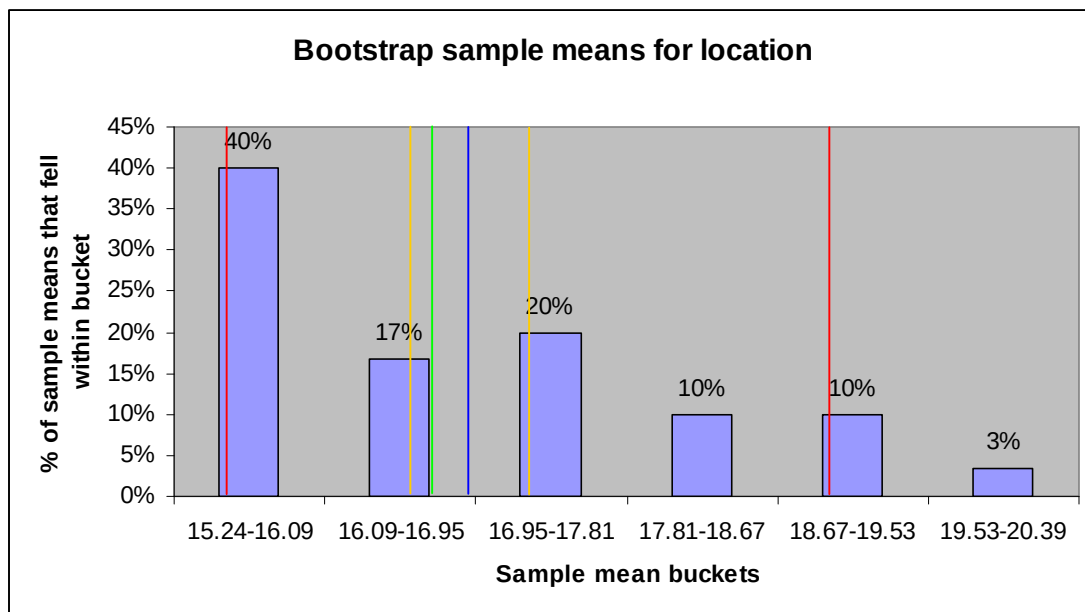
90% confidence interval for sample means

90% confidence interval for sample mean o

Sample mean of means

Overall data mean

—	90% confidence interval for sample means
—	90% confidence interval for sample mean of means
—	Sample mean of means
—	Overall data mean



The spread of bootstrap sample means show a tendency for low importance scores in this attribute, counterbalanced by some high sample means. This means that the overall sample mean may be slightly distorted by some excessively high importances, although the bootstrap sample mean of means corresponds closely with the overall mean, which is within all confidence intervals. The data is therefore deemed to be valid.

4.6.3. Price

Histogram	Bin Min	Bin Max	Price Bin Midpoint	Freq .	Rel. Freq.	Prb. Density
Bin #1	8.55	9.01	8.78	3	0.10	0.22
Bin #2	9.01	9.47	9.24	0	0.00	0.00
Bin #3	9.47	9.92	9.70	1	0.03	0.07
Bin #4	9.92	10.38	10.15	8	0.27	0.58
Bin #5	10.38	10.84	10.61	6	0.20	0.44
Bin #6	10.84	11.30	11.07	12	0.40	0.87
Conf. Intervals (One-Sample)		Price				
Sample Size		30				
Sample Mean of Means		10.47				
Sample Std Dev		0.72				
Confidence Level(Samples)		90%				
Lower Limit		8.90				
Upper Limit		11.21				
Confidence Level(Samples Mean)		90%				
Degrees of Freedom		29				
Lower Limit		10.25				
Upper Limit		10.69				
Overall Research Mean		10.44				

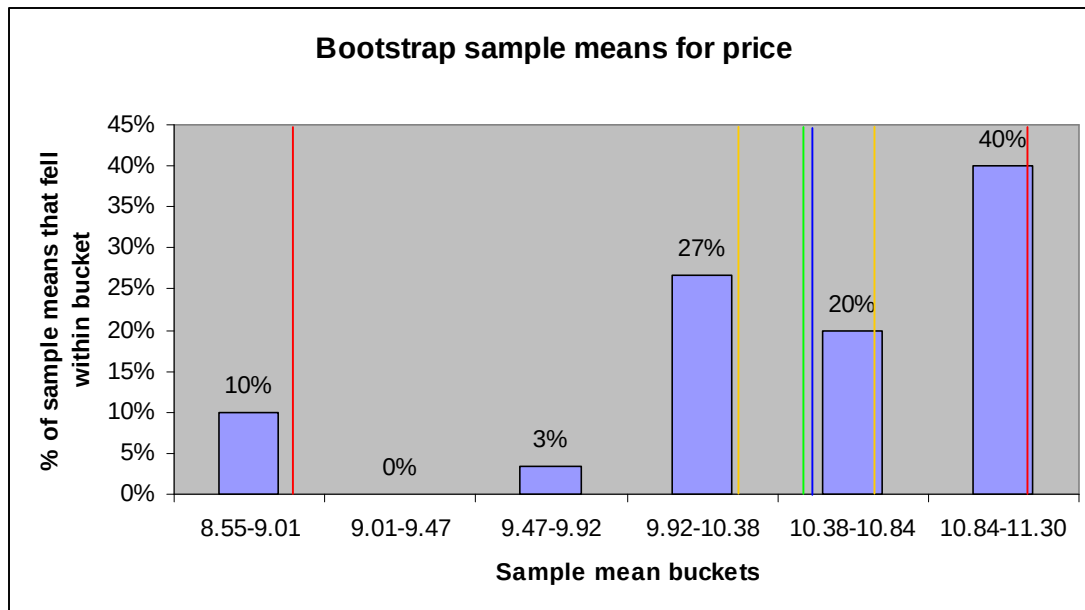
90% confidence interval for sample means

90% confidence interval for sample mean o

Sample mean of means

Overall data mean

—	90% confidence interval for sample means
—	90% confidence interval for sample mean of means
—	Sample mean of means
—	Overall data mean



Again, here we see a majority of bootstrap samples having a high importance score, which implies that there were some excessively low importance scores that distorted the mean of this attribute. The bootstrap sample mean of means and the overall mean corresponded closely and the overall mean was within all confidence intervals.

4.6.4. Access

Histogram	Bin Min	Bin Max	Access Bin Midpoint	Freq .	Rel. Freq.	Prb. Density
Bin #1	6.27	6.60	6.43	5	0.17	0.50
Bin #2	6.60	6.94	6.77	4	0.13	0.40
Bin #3	6.94	7.27	7.10	5	0.17	0.50
Bin #4	7.27	7.61	7.44	7	0.23	0.70
Bin #5	7.61	7.94	7.78	5	0.17	0.50
Bin #6	7.94	8.28	8.11	4	0.13	0.40
Conf. Intervals (One-Sample)		Access				
Sample Size		30				
Sample Mean of Means		7.29				
Sample Std Dev		0.58				
Confidence Level(Samples)		90%				
Lower Limit		6.34				
Upper Limit		8.17				
Confidence Level(Samples Mean)		90%				
Degrees of Freedom		29				
Lower Limit		7.11				
Upper Limit		7.47				
Overall Research Mean		7.30				

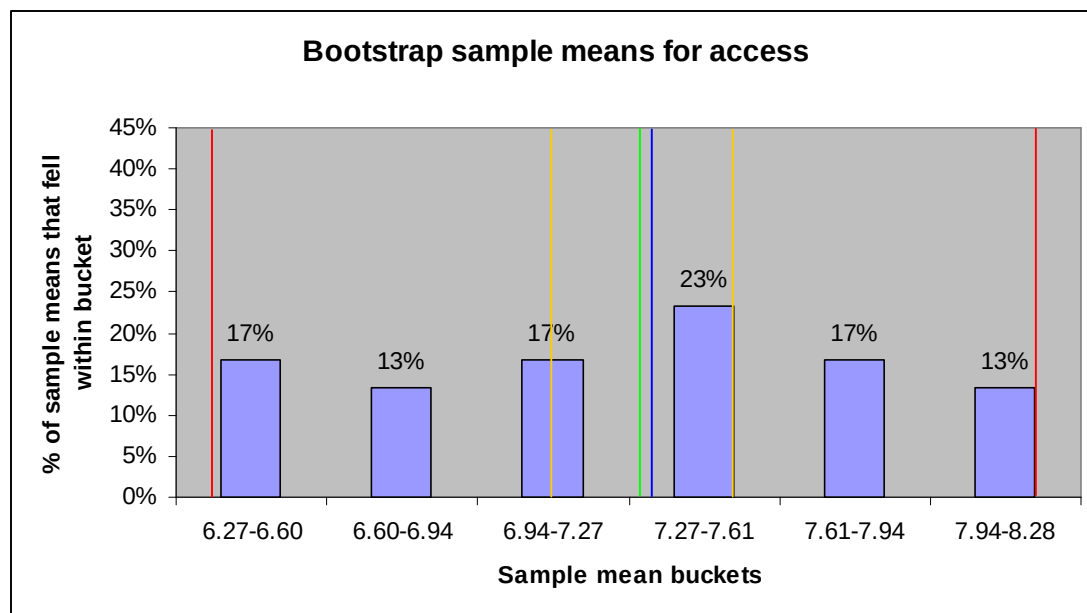
90% confidence interval for sample means

90% confidence interval for sample mean c

Sample mean of means

Overall data mean

—	90% confidence interval for sample means
—	90% confidence interval for sample mean of means
—	Sample mean of means
—	Overall data mean



There was a very even spread of bootstrap sample means with a small standard deviation, meaning opinions around this attribute did not vary excessively. The overall sample mean of means was within all confidence intervals.

4.6.5. Staff Competence

Histogram	Bin Min	Bin Max	Competence Bin Midpoint	Freq .	Rel. Freq.	Prb. Density
Bin #1	23.17	24.30	23.74	4	0.13	0.12
Bin #2	24.30	25.42	24.86	3	0.10	0.09
Bin #3	25.42	26.55	25.98	5	0.17	0.15
Bin #4	26.55	27.67	27.11	4	0.13	0.12
Bin #5	27.67	28.79	28.23	10	0.33	0.30
Bin #6	28.79	29.92	29.35	4	0.13	0.12
Conf. Intervals (One-Sample)		Competence				
Sample Size		30				
Sample Mean of Means		26.86				
Sample Std Dev		1.87				
Confidence Level(Samples)		90%				
Lower Limit		23.81				
Upper Limit		29.49				
Confidence Level(Samples Mean)		90%				
Degrees of Freedom		29				
Lower Limit		26.28				
Upper Limit		27.44				
Overall Research Mean		27.36				

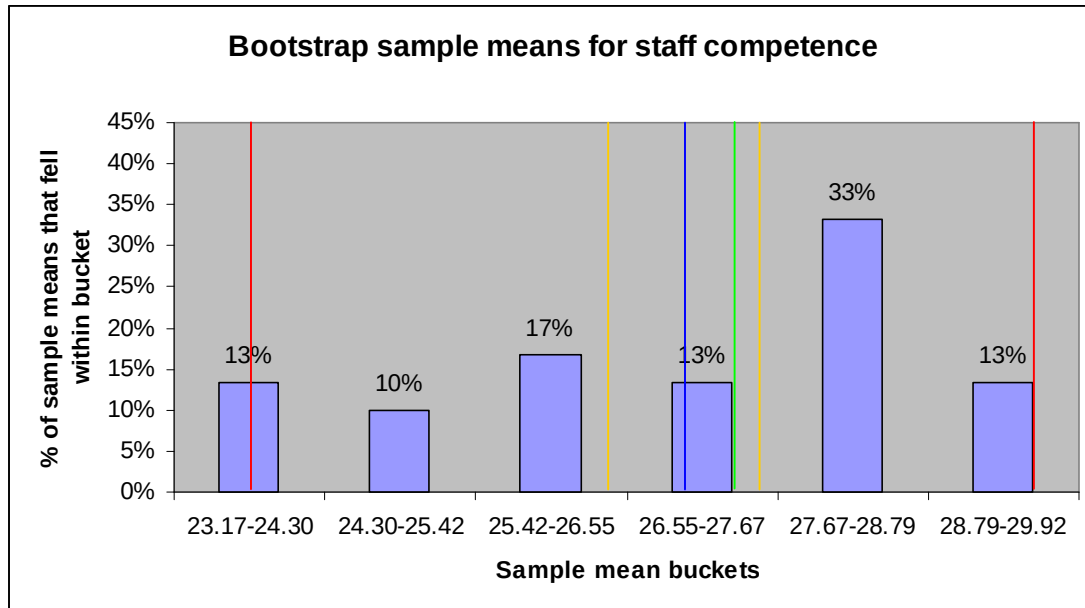
90% confidence interval for sample means

90% confidence interval for sample mean of

Sample mean of means

Overall data mean

—	90% confidence interval for sample means
—	90% confidence interval for sample mean of means
—	Sample mean of means
—	Overall data mean

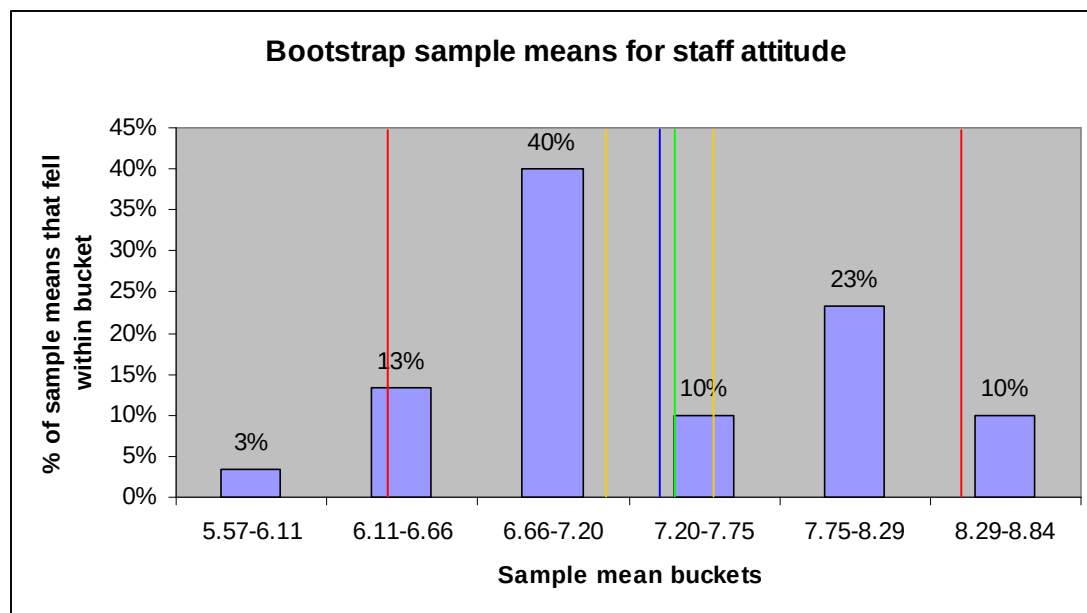


There does not graphically appear to be any major distortion in the bootstrap sample means, with the overall mean corresponding closely with the bootstrap sample mean of means and staying within all confidence intervals.

4.6.6. Staff Attitude

Histogram	Bin Min	Bin Max	Staff attitude Bin Midpoint	Freq	Rel. Freq.	Prb. Density
Bin #1	5.57	6.11	5.84	1	0.03	0.06
Bin #2	6.11	6.66	6.38	4	0.13	0.24
Bin #3	6.66	7.20	6.93	12	0.40	0.73
Bin #4	7.20	7.75	7.47	3	0.10	0.18
Bin #5	7.75	8.29	8.02	7	0.23	0.43
Bin #6	8.29	8.84	8.57	3	0.10	0.18
Conf. Intervals (One-Sample)						
Service						
Sample Size	30					
Sample Mean of Means	7.27					
Sample Std Dev	0.72					
Confidence Level(Samples)	90%					
Lower Limit	6.37					
Upper Limit	8.36					
Confidence Level(Samples Mean)	90%					
Degrees of Freedom	29					
Lower Limit	7.05					
Upper Limit	7.50					
Overall Research Mean	7.36					

—	90% confidence interval for sample means
—	90% confidence interval for sample mean of means
—	Sample mean of means
—	Overall data mean



The spread of sample means appears to cluster around the middle ranges, in a normal-appearing distribution. The sample mean of means and the overall data mean correspond closely and the overall mean was within all confidence intervals.

4.6.7. Brand

Histogram	Bin Min	Bin Max	Brand Bin Midpoint	Freq .	Rel. Freq.	Prb. Density
Bin #1	9.97	10.47	10.22	4	0.13	0.27
Bin #2	10.47	10.97	10.72	8	0.27	0.53
Bin #3	10.97	11.47	11.22	5	0.17	0.33
Bin #4	11.47	11.98	11.73	4	0.13	0.27
Bin #5	11.98	12.48	12.23	5	0.17	0.33
Bin #6	12.48	12.98	12.73	4	0.13	0.27
Conf. Intervals (One-Sample)		Brand				
Sample Size		30				
Sample Mean of Means		11.41				
Sample Std Dev		0.83				
Confidence Level(Samples)		90%				
Lower Limit		10.14				
Upper Limit		12.75				
Confidence Level(Samples Mean)		90%				
Degrees of Freedom		29				
Lower Limit		11.15				
Upper Limit		11.67				
Overall Research Mean		11.25				

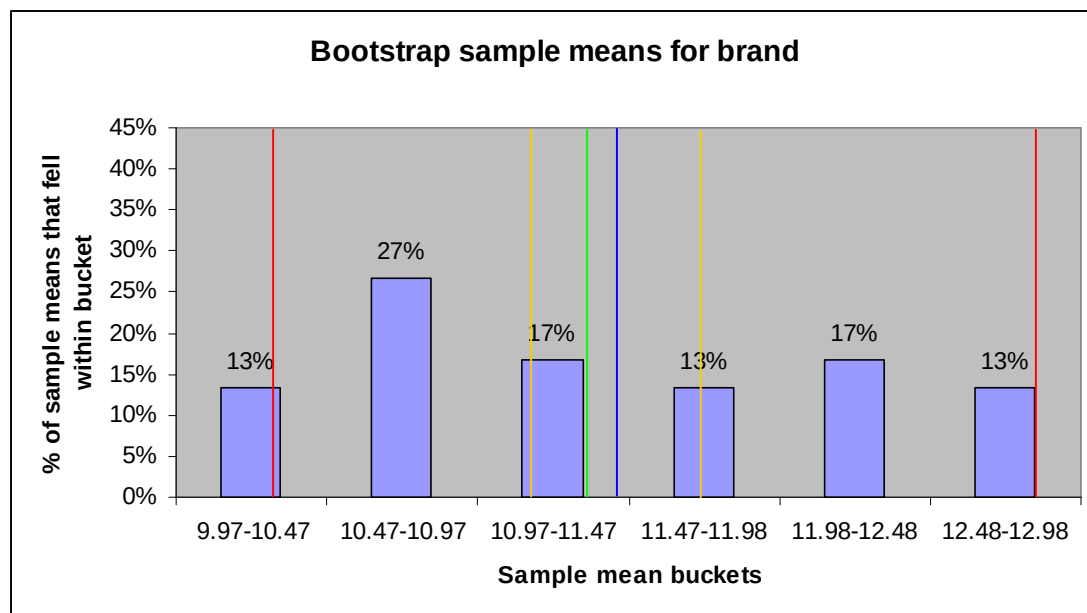
90% confidence interval for sample means

90% confidence interval for sample mean of means

Sample mean of means

Overall data mean

—	90% confidence interval for sample means
—	90% confidence interval for sample mean of means
—	Sample mean of means
—	Overall data mean



The spread appears graphically to be fairly homogenous, with the bootstrap sample mean of means corresponding closely with the overall sample mean. The overall samples mean was within all confidence intervals.

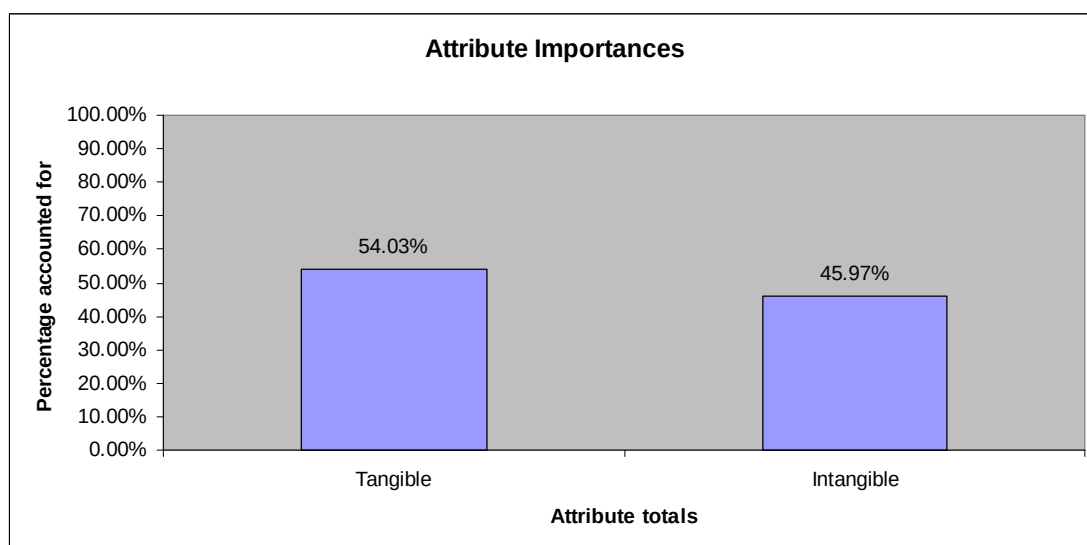
4.6.8. Conclusions of bootstrap analysis

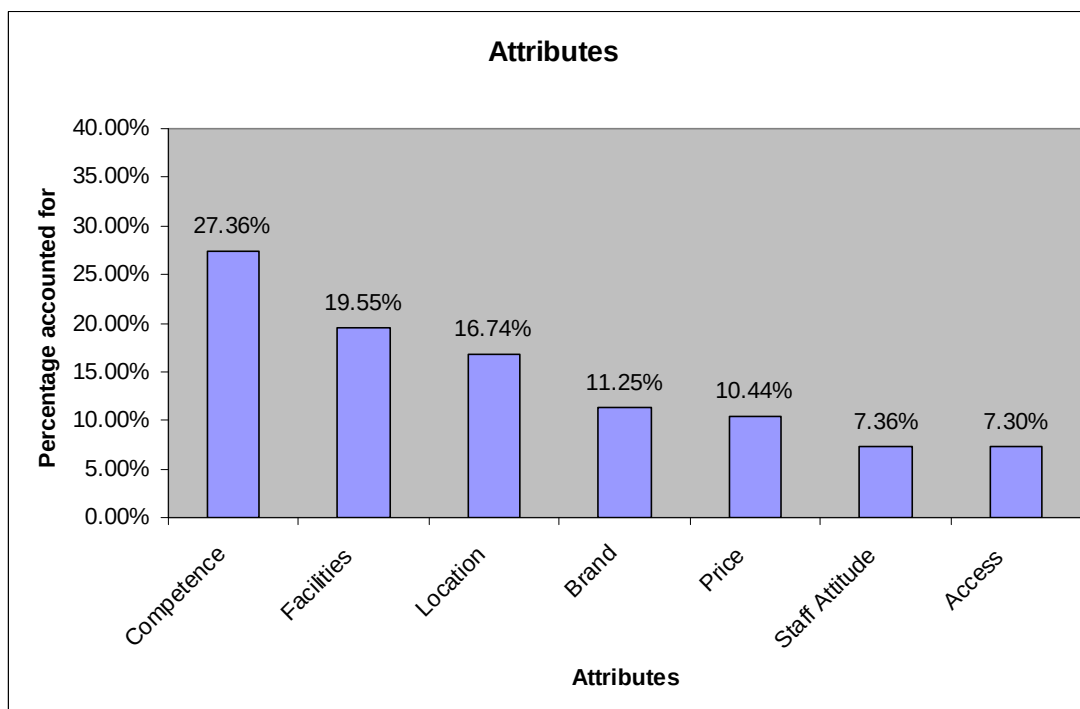
The bootstrap analysis validates the data across all attributes, with good correspondence between the overall data and the bootstrap data. There were slight concerns about some excessively negative attribute importances impacting the overall price importance score and the converse being the case for location. However, the bootstrap analysis validated the original data and these only points to some highly opinionated demographics as highlighted earlier in this chapter.

4.7. SUMMARY OF THE RESULTS

Since there were both tangible and intangible attributes in the survey that the respondents had to simultaneously factor in, it is useful to look at a broad overview for the tangible versus the intangible importance levels.

Thus we can see that both tangible and intangible attributes play a role in the respondent decision making, with 54% of the decision making process using tangible attributes and 46% using intangible attributes. If we look at the importances of all of the measured attributes, the following picture emerges:





As shown in the graph above, competence accounted for over a quarter of the total variance in decision making, and is ranked by this study as the most important attribute of those researched. The quality of facilities follows this and between these two accounted for almost half of the total variance in decision making. Location came in third, although it must be remembered that there is a cross over between location and waiting time (Ryan et al, 2000), and this may in fact have been lower had waiting time been included. The cross over between location and waiting time in health care, in effect the total time from decision to service, is a whole research topic in itself. Brand and price together still account for approximately 1/5 of the decision making process, with staff attitude and access shown in this research as being the least important when choosing a private hospital facility.

Furthermore, a summary of the results presented in results sections may be found in the following table. The blocks highlighted in red are those with statistically significant differences across the demographics and will be discussed in more detail in the next chapter.

Table 2: Summary of Importance Results

Key:

	Highest importance per individual demographic bracket (rank 1 for that demographic); ranks 2 – 7 in brackets
	Demographics across which there was a statistically significant difference

Demographic	Percentage that attribute affects decision (rank for demographic in brackets)							
	Competency	Facilities	Location	Brand	Price	Staff	Access	
Overall	27.3%(1)	19.5%(2)	16.7%(3)	11.2%(4)	10.4%(5)	7.3%(6)	7.3%(7)	100%

Age	Competency	Facilities	Location	Brand	Price	Staff	Access	
18-30	18.9%(3)	19.0%(2)	19.7%(1)	14.4%(4)	12.7%(5)	7.7%(6)	7.4%(7)	100%
30-45	31.1%(1)	18.6%(2)	16.2%(3)	9.9%(4)	9.2%(5)	7.7%(6)	6.9%(7)	100%
45-60	28.5%(1)	21.7%(2)	15.4%(3)	10.3%(4)	10.1%(5)	6.1%(7)	7.6%(6)	100%
>60	27.0%(1)	25.6%(2)	4.4%(7)	11.8%(4)	14.9%(3)	4.9%(6)	11.2%(5)	100%

Gender	Competency	Facilities	Location	Brand	Price	Staff	Access	
Female	24.8%(1)	21.4%(2)	15.1%(3)	11.4%(4)	11.4%(4)	7.7%(7)	7.8%(6)	100%
Male	29.9%(1)	17.5%(3)	18.3%(2)	11.0%(4)	9.3%(5)	6.9%(6)	6.7%(7)	100%

Income bracket	Competency	Facilities	Location	Brand	Price	Staff	Access	
<R10k	19.1%(2)	22.7%(1)	13.1%(5)	15.1%(3)	13.4%(4)	7.4%(7)	8.8%(6)	100%
R10k-R20k	16.3%(3)	18.0%(2)	24.0%(1)	14.7%(4)	13.0%(5)	7.0%(6)	6.7%(7)	100%
R20k-R40k	27.1%(1)	19.9%(2)	16.5%(3)	10.9%(4)	9.8%(5)	8.1%(6)	7.4%(7)	100%
>R40k	34.2%(1)	18.2%(2)	14.8%(3)	9.2%(5)	9.6%(4)	6.6%(7)	7.0%(6)	100%

Medical Cover	Competency	Facilities	Location	Brand	Price	Staff	Access	
Comprehensive	27.9%(1)	19.0%(2)	17.4%(3)	10.7%(4)	10.0%(5)	7.4%(6)	7.3%(7)	100%
Limited	23.4%(1)	22.3%(2)	14.4%(3)	13.7%(4)	11.8%(5)	6.8%(7)	7.2%(6)	100%
None	38.5%(1)	16.2%(2)	8.1%(6)	9.2%(4)	13.5%(3)	8.5%(5)	5.6%(7)	100%

Dependants?	Competency	Facilities	Location	Brand	Price	Staff	Access	
No Dependants	24.7%(1)	18.7%(2)	17.6%(3)	12.3%(4)	11.1%(5)	8.0%(6)	7.4%(7)	100%
Dependants	30.2%(1)	20.3%(2)	15.3%(3)	10.1%(4)	9.8%(5)	6.6%(7)	7.2%(6)	100%

The table on the previous page shows the percentage importance that each demographic places on each attribute when making a decision on private hospital facilities. Obviously these vary between demographics, for instance, the lowest income bracket actually rated facility quality the highest, but nevertheless are remarkably consistent across the demographic brackets. Obviously all the importances must add up to 100%, depicting 100% of the choice made. It is important to note that these values are therefore relative to one another, adding or removing an attribute will by necessity change the values of the other attributes.

CHAPTER 5: DISCUSSION OF THE RESULTS

5.1. INTRODUCTION

This chapter discusses the results found in chapter 4, specifically focussing on those areas in chapter 4 that were found to have statistically significant differences across demographics. This will enable a clearer understanding of the underlying drivers that may have caused these significant findings. Also, this chapter will look more in depth at the different levels in each attribute, which levels were more preferable to the respondents and differences within demographics across these levels.

5.2. DEMOGRAPHIC PROFILE OF RESPONDENTS

The demographic profile of the respondents allowed for certain robust statistics, but also had some flaws as anticipated in the methodology. Due to the snowball convenience sampling technique used, certain demographics were very poorly represented and this in turn made statistical findings very difficult to obtain. This does not mean that these results are not there to find, but rather that more data would be needed in order to find a statistically meaningful difference. All of the demographics would be best used in conjunction with studies by each individual private hospital facility or group as to their target demographics.

5.2.1. Gender

There was an almost even split between male and female respondents, allowing for some robust statistical analysis between these demographic groups.

5.2.2. Age

The demographics of the age brackets were lacking at the upper and lower age brackets, relative to the middle two. This means that the age results were difficult to obtain, and the fact that statistically significant results were found at the extremes of age only indicates the strength of these findings. For a robust assessment, however, more complete data especially in the age bracket over 60 would be essential, allowing more robust conclusions to be drawn in relation to this age demographic. The private hospital management may want to correlate these age groups with a demographic profile of money spent at the institution to gain a clearer understanding of which age groups to target in any future research.

5.2.3. Income

Another flaw in the sampling methodology, as stated, was the tendency for higher earning respondents. This proved to be the case in the research and meant that meaningful results for lower income brackets were limited. The higher earning potential of the respondents also means that this research is practically useful only for assessing the preferences of the higher earning brackets. Again, if further research or strategies include the lower income brackets, this research may be extended to focus sampling more on the lower income bracket.

5.2.4. Medical Insurance Cover

There was a huge bias towards comprehensive medical insurance cover, again anticipated in the methodology chapter. This means that results of this study should be interpreted cautiously when applying to possible consumers with limited or no medical insurance cover. This also made it difficult to come to any meaningful conclusions in these demographic groups, especially with the very limited respondents who had no medical insurance cover at all. Data from the private hospital facilities may be of benefit in ascertaining whether

these limited and no cover demographics are of any substance in the earnings profile of private hospital facilities.

5.2.5. *Dependants*

There was almost an even split between decision makers for dependants and those who were not. This allowed for some interesting insights.

5.3. RESULTS TO RESEARCH QUESTION 1

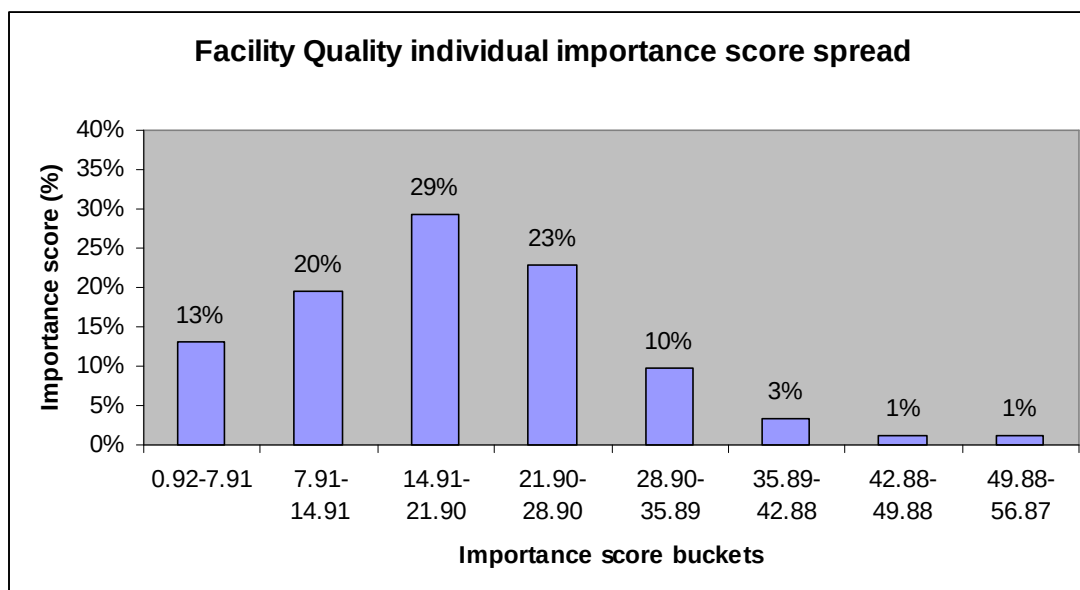
5.3.1. *Introduction*

The tangible attributes accounted for 54% of the overall variance in respondent decision making, with facility quality ranking highest amongst these and second overall. This was followed by location (third overall), price (fifth overall) and access (sixth overall).

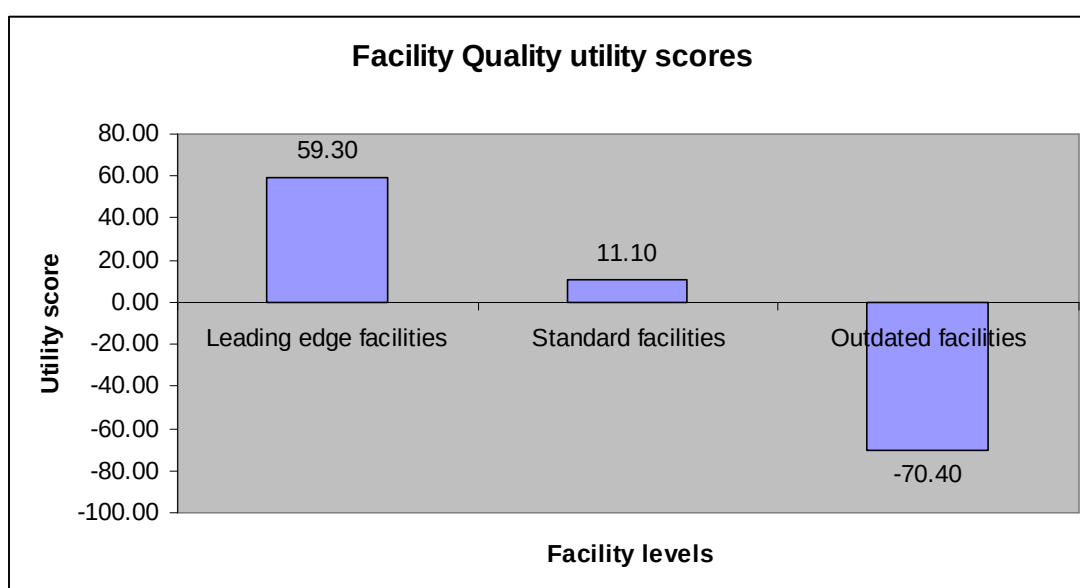
This section will look at the spread of responses to ascertain if there were any excessively large or small importances which may have distorted the data in its overall form. This section will further break these attributes down into their component levels for further analysis, focussing on the areas that showed significant differences in the results analysis.

5.3.2. *Facilities*

As stated in the previous section, the quality of the facilities came across as the second most important factor in choosing a private hospital facility. The spread of responses across respondents evidenced a mild positive skewness, as shown by the graph that follows:

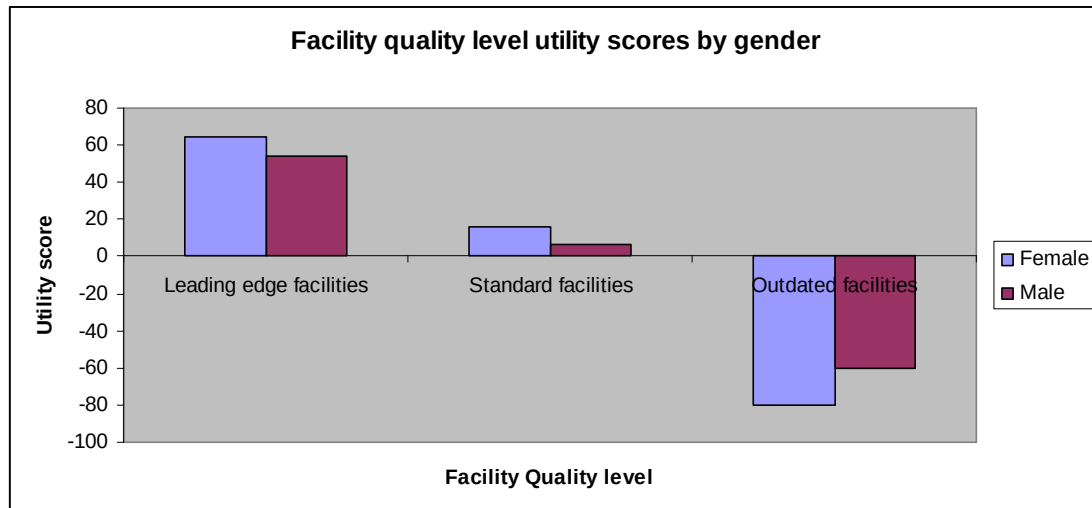


It is possible to further analyse these importances by looking at the actual facility utility scores. The total facility quality scores when viewed across the three levels are as follows:



This is a fairly intuitive and obvious finding, with respondents slightly positive about the standard facilities, whilst showing negative sentiment towards the outdated facilities and positive towards the leading edge facilities.

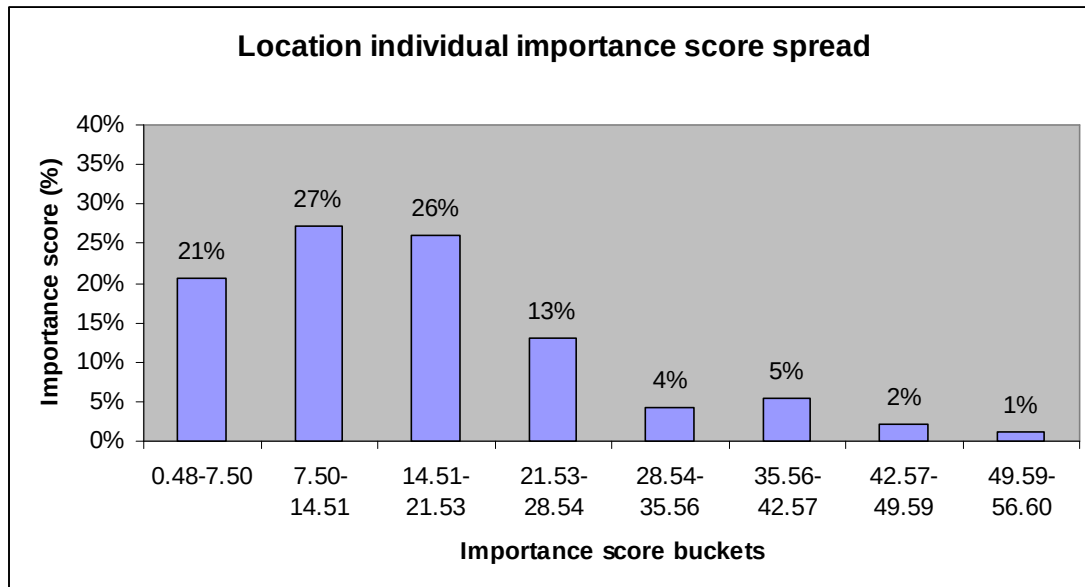
The only significant finding in the area of facilities came when analysing the importances for this attribute across genders. To explore this further, the facility quality level were also analysed across genders, and the following results obtained:



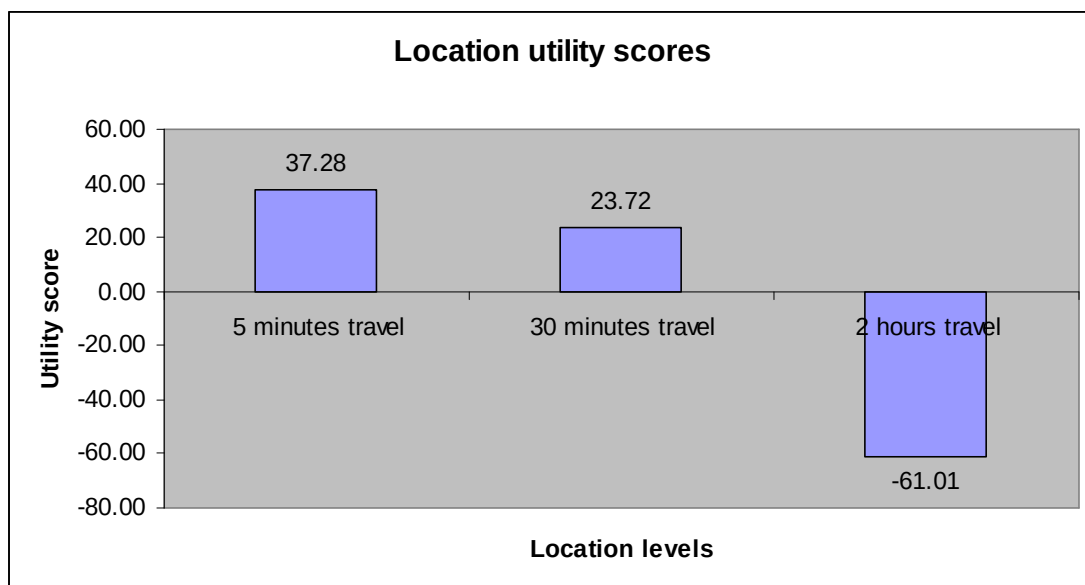
As shown here graphically, the female gender feels more negatively about the outdated facilities in relation to the other two levels than their male counterparts. This in turn implies that outdated facilities are more likely to deter females than males.

5.3.3. Location

Location has also emerged as one of the most important decision criteria for the choosing of private hospital facilities, ranking third with almost 17% of the decision catered for by this attribute. The spread of responses showed a slightly more marked positive skewness, meaning that the top 11% were responsible for inflating the overall importance mean above that at which the majority of respondents placed it. Whilst this should be taken in context, the data has been shown to be valid and this points to certain extreme opinions and not, in fact, any outlying data.

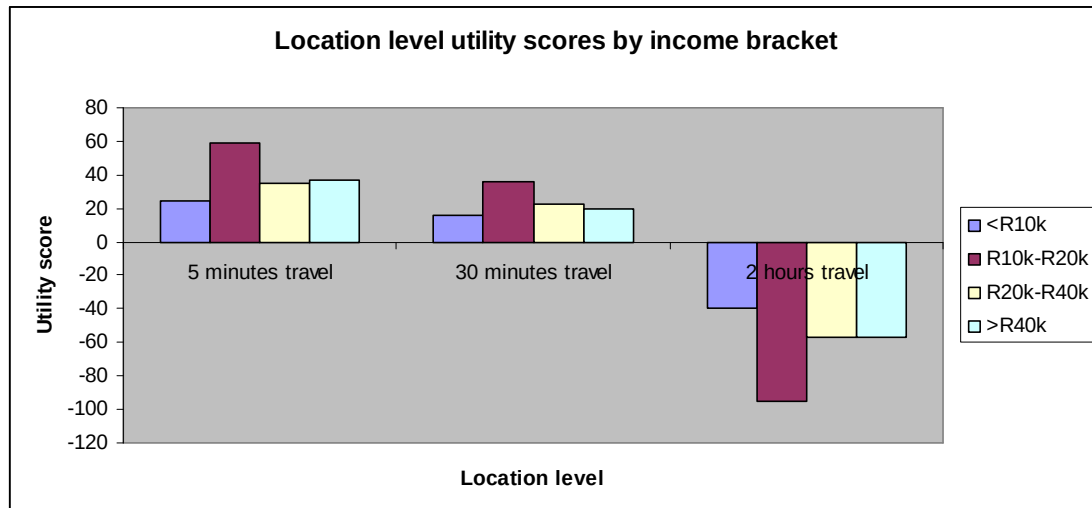


If we look at the individual utility scores for location we see the following:



This trend shows that there is positive sentiment towards private hospital facilities that are both 5 minutes and 30 minutes away, although large negative sentiment towards the private hospital facility that is 2 hours away. This does not negate the importance of location in deciding upon a private hospital facility, but rather shows that there is a gap for future research towards the importance of location between the 30 minutes away and 2 hours away levels.

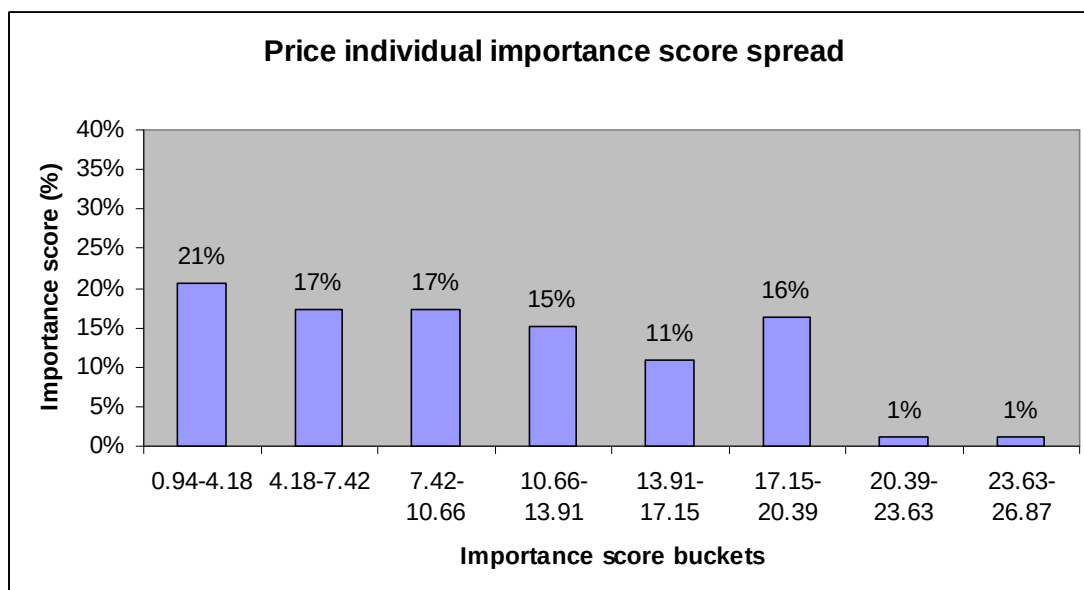
The only significant finding for location was a difference according to income bracket as to the importance of location in coming to a decision. This can be further explored by analysing the utility scores for each level across the income brackets:



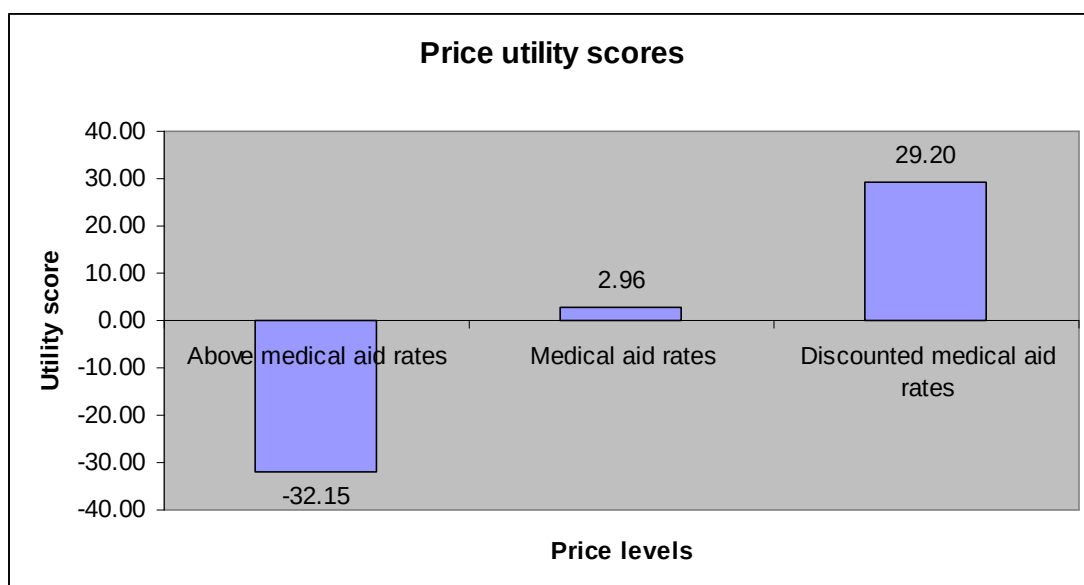
Graphically this graph identifies the culprit for the statistical findings, as those earning between R10 000 and R20 000 per month have a much higher negative sentiment towards travelling 2 hours in comparison to the other income brackets. This may be artefact as there is no intuitive reason why this may be the case, although a qualitative study on this may be of benefit in ascertaining the answer.

5.3.4. Price

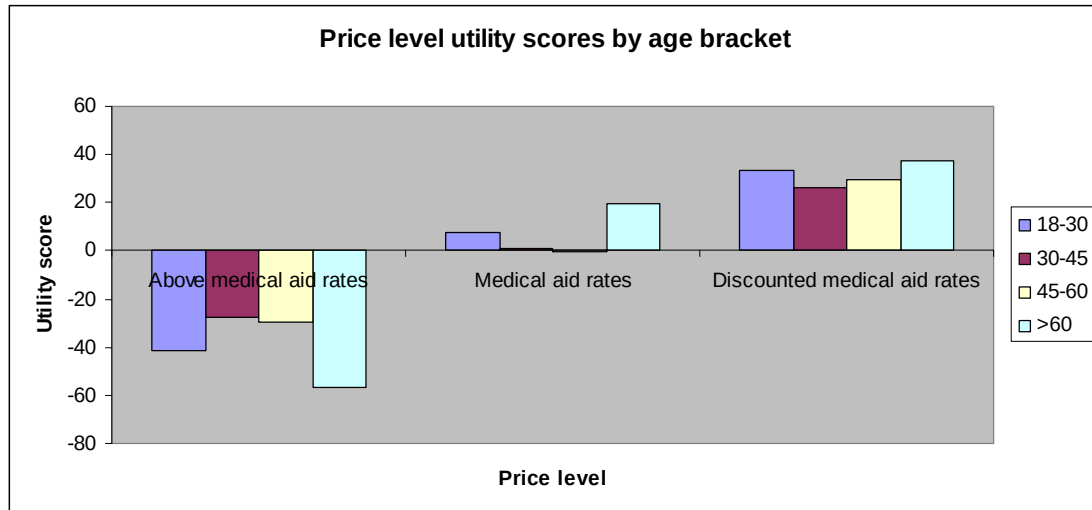
Price only ranked fifth overall in importance, yet showed some interesting statistical trends, mainly in the age and gender demographical splits. The spread of importances per respondent was remarkably consistent, meaning a wide range of views on this attribute with no seeming consensus.



The individual attribute level utility scores looked as follows:

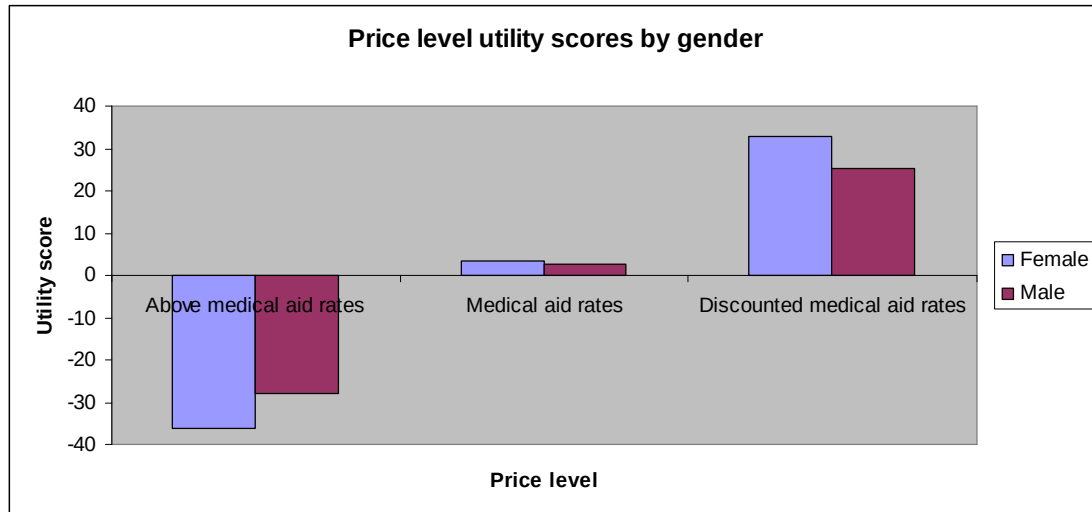


The overall utility scores are intuitive, with a fairly neutral middle or “average” rate, and a negative sentiment towards the highly priced services.



Here evidence is seen of the variances at the extremes of the age demographics as seen in the importance scores in the previous chapter. The sentiment towards high medical aid rates is appreciably more negative in the extremes of the age demographic clusters, with resultant relatively more positive sentiments towards those private hospital facilities that charge at or below medical aid rates.

Whilst these results should be taken in context with regards to the price attribute's low overall importance in decision making, they do point to price being a more important factor when trying to attract the extreme age demographics. This may be due to limited financial capabilities, or a conservation of resources, intuitively common in those just starting or ending their respective career paths.

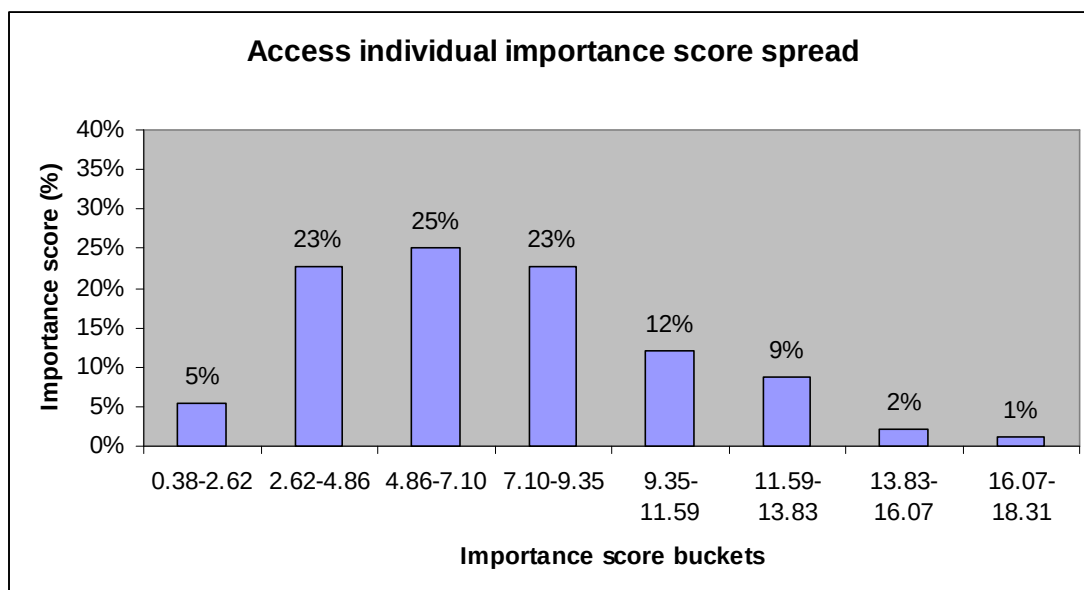


The major discrepancy between the genders in the issue of price appears to be a relatively more negative sentiment towards above average medical aid rates from females; with a corresponding more positive sentiment towards those private hospital facilities that charge discounted medical aid rates. This means that more expensive institutions will be frowned upon more by females than males.

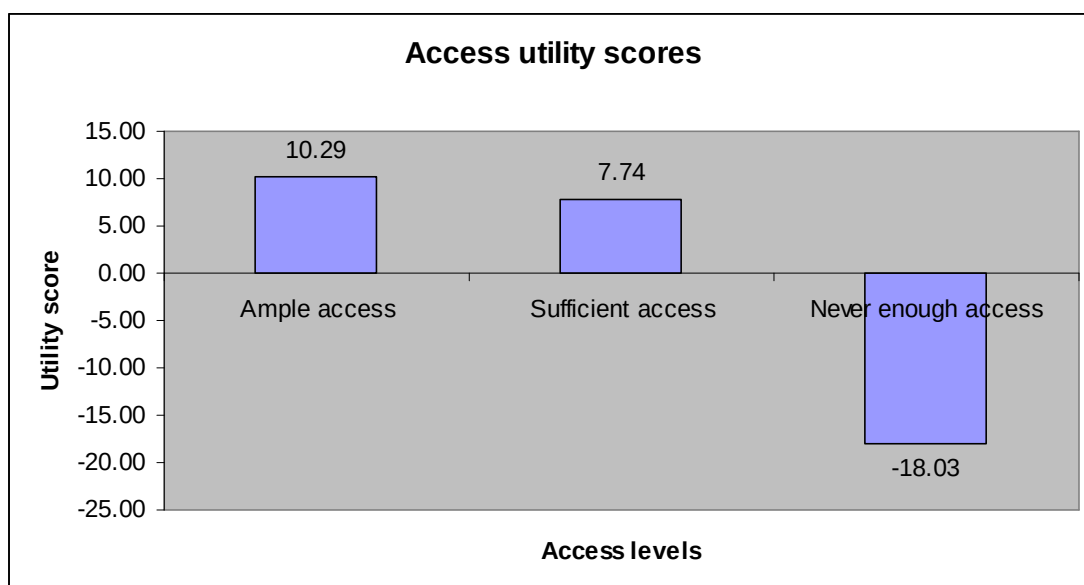
5.3.5. Access

It must be remembered when analysing the access importance and levels that this attribute ranked lowest in importance when making decisions regarding private hospital facilities, accounting for only 7% of the decision making variance.

The access importance scores spread across respondents showed a nice central tendency around the eventual mean, although with slight positive skewness. This bodes well for the validity of the end findings.



When the access attribute level utility data is analysed, we see the following:



The graph shows a sharply negative sentiment towards never having enough access, with the sufficient access and ample access levels both having more equivalent utility scores. This may indicate a problem with the phrasing of the questionnaire, or a large gap between the “sufficient” and the “never enough” levels. Further research into this area could prove beneficial if deemed relevant.

5.4. RESULTS TO RESEARCH QUESTION 2

5.4.1. Introduction

As illustrated in the previous chapter, the intangible attributes accounted for 46% of the variance in the respondents' decision making, with staff competency ranking as the most important attribute overall, brand as the fourth most important attribute and staff attitude ranking second last overall in importance.

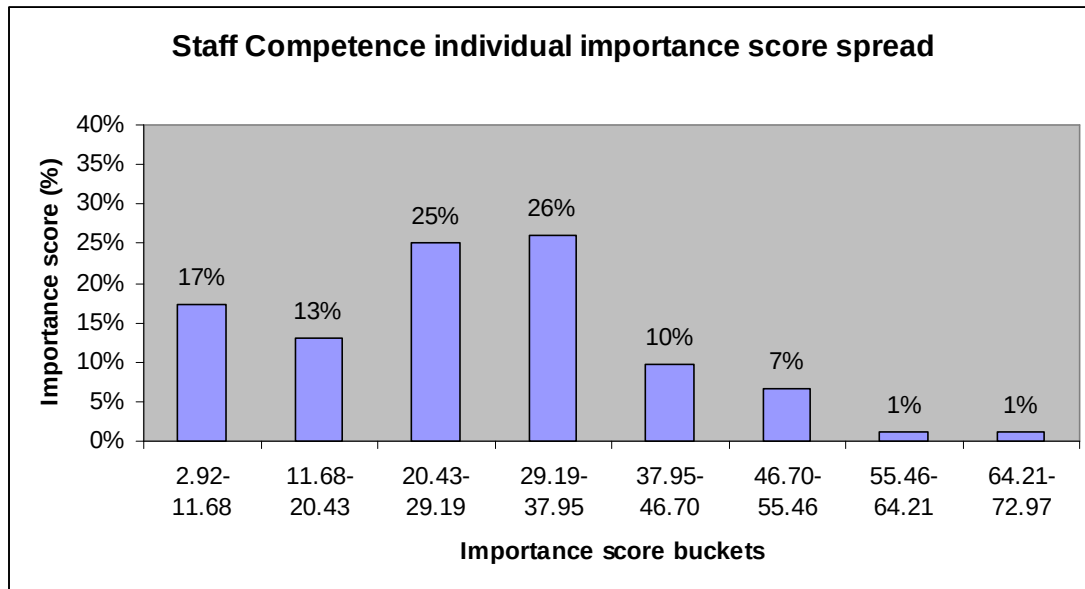
This section will look in more detail at the spread of individual importance scores for each respondent for the intangible attributes to get a sense of the grouping or consensus of opinion regarding the influence these attributes have when coming to a decision.

This section will further explore these three attributes in more detail, specifically looking at the areas wherein these attributes showed significant differences across demographic brackets.

5.4.2. Competence

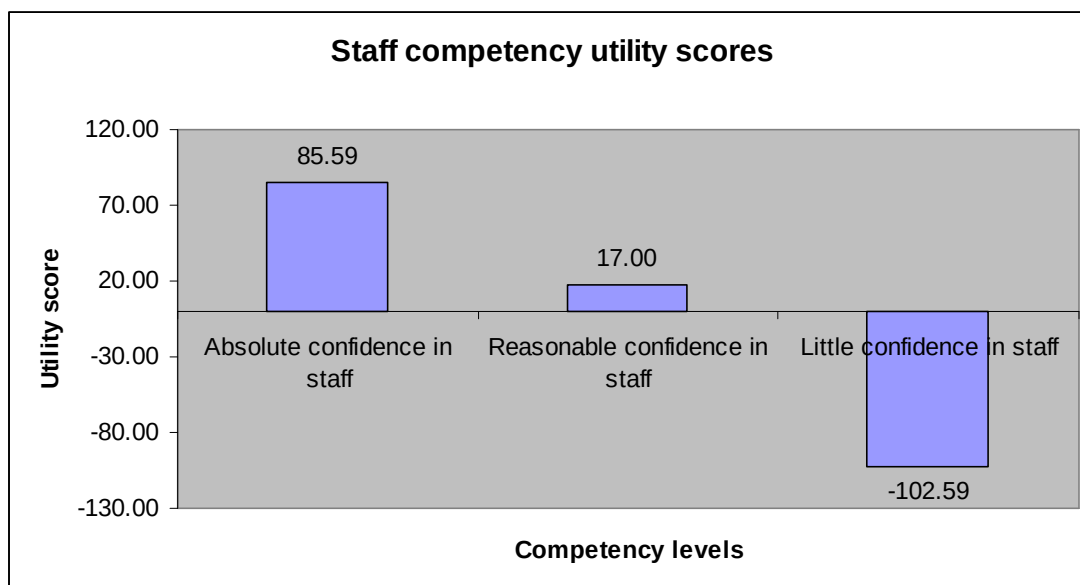
Staff competency was clearly the most important attribute used by the respondents when making a decision on private hospital facilities, with over 27% of the variance accounted for by this attribute.

The spread of individual respondent's importance scores for this attribute showed a weighting near the lower end, with some very high scores possibly elevating the overall importance score slightly. The data was shown to be valid, however, and it is the opinion of the researcher that this reflects strong opinions and not outlying data.

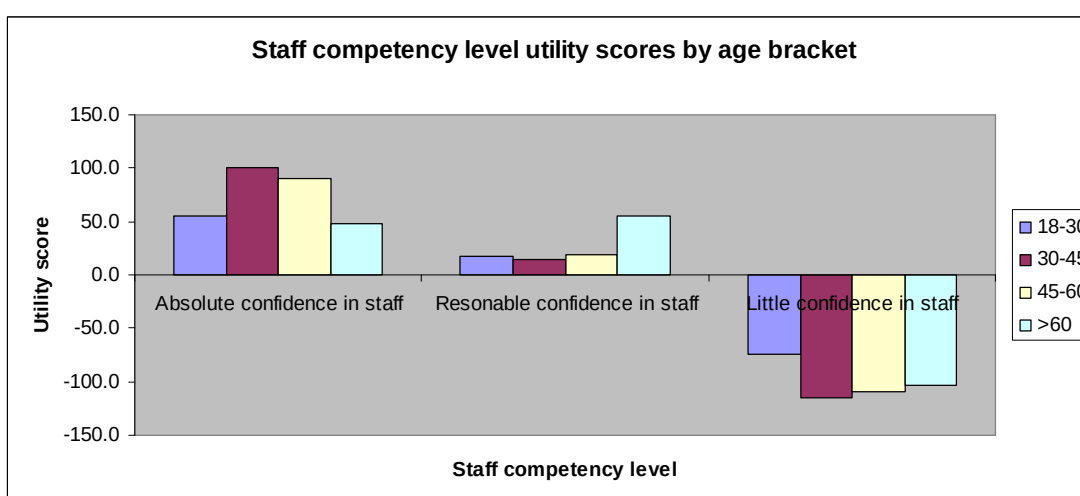


There were three levels within this attribute, and closer analysis shows that there was a massive negative sentiment towards the “little confidence” attribute, with intuitively corresponding slightly and strongly positive sentiments for “reasonable confidence” and “absolute confidence” respectively.

This means that the qualifications and competency of the staff is the paramount importance for private hospital facility managers. Since this study is based purely on end consumers’ perceptions, it is also crucial that private hospital managers advertise the fact that they have the most competent staff at their facility.



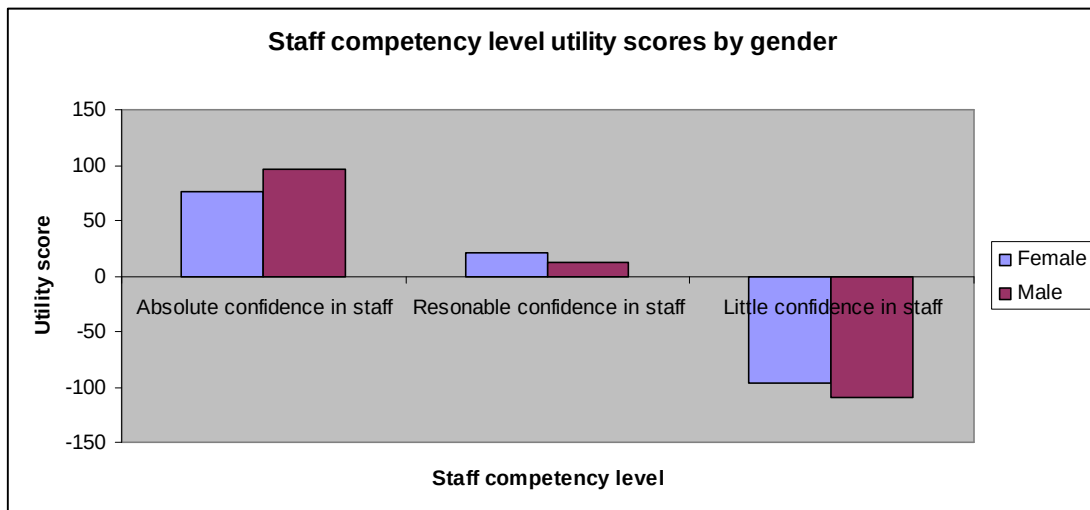
If the levels are analysed according to the demographics that showed significant findings in Chapter 4, there are some interesting trends that emerge:



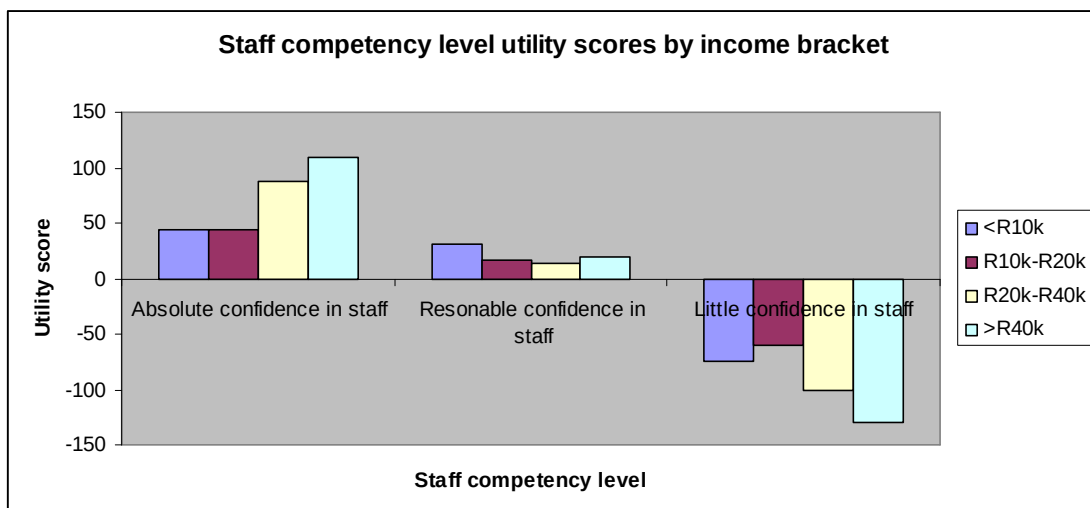
With regards to the staff competency levels according to age brackets:

- The above 60 age bracket does not seem to differentiate between absolute and reasonable confidence. This may be due to a misunderstanding of the phrasing, or a disinterest as long as there is reasonable staff competency (in other words a relaxing of the stringency for staff competency).

- There is also a less opinionated stance by the 18-30 year old demographic, where the sentiments for “absolute confidence” in staff competency and “little confidence” in staff competency are not as pronounced. This indicates less stringent criteria amongst younger patrons regarding the competency of staff.

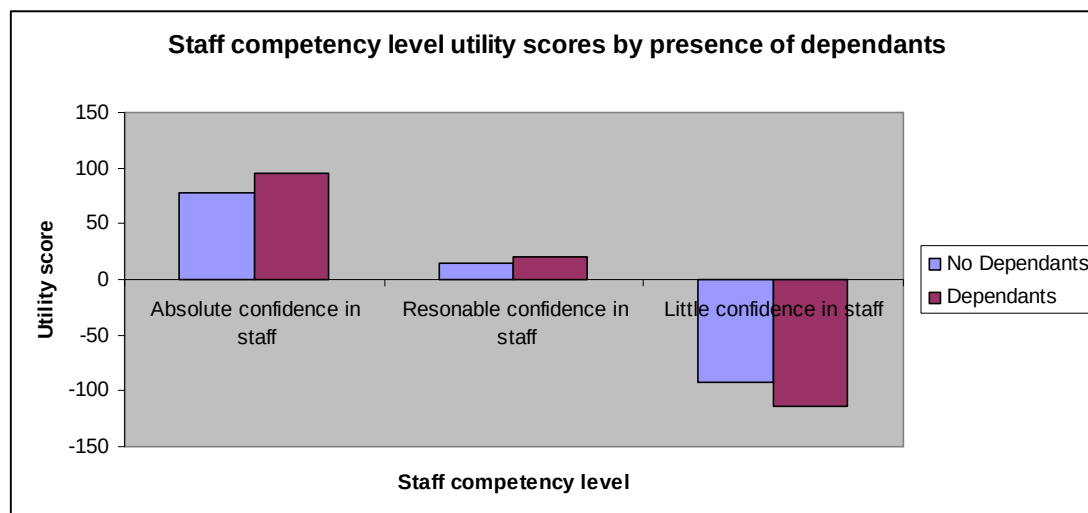


The disparity amongst gender classes is not as readily apparent, although it is still statistically significant. These results essentially indicate that males are more stringent in their requirements for staff competence than females.



Looking at the utility levels for staff competency according to income brackets, one can see that the stringency requirements increase as the

respondents earning power increases. This effectively means that in the higher income brackets a larger positive sentiment is placed upon “absolute confidence” and a proportionally larger negative sentiment towards “little confidence”. The lower tow income brackets do not have such large discrepancies down the spectrum of staff competency.

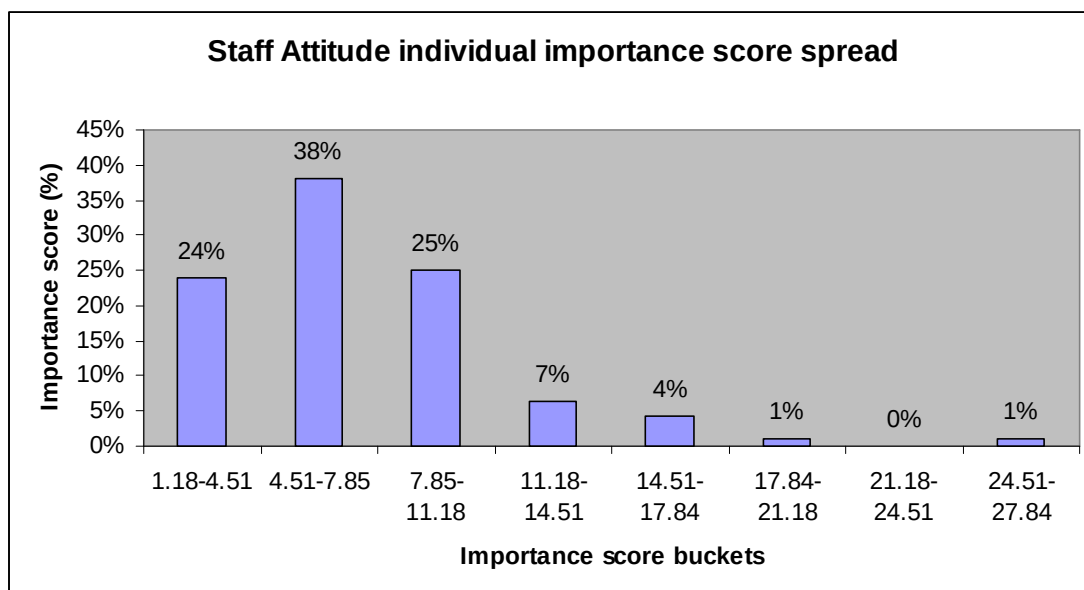


Whilst not as pronounced graphically as some of the previous illustrations, the statistical evidence clearly backs up the graphical in indicating that those with dependants are more stringent in their requirements for staff competency, with an increase in the positive sentiment towards “absolute confidence” counteracted by a corresponding increase in the negative sentiment towards “little confidence”. This makes intuitive sense as when looking after dependants one would expect a higher stringency on the quality of care.

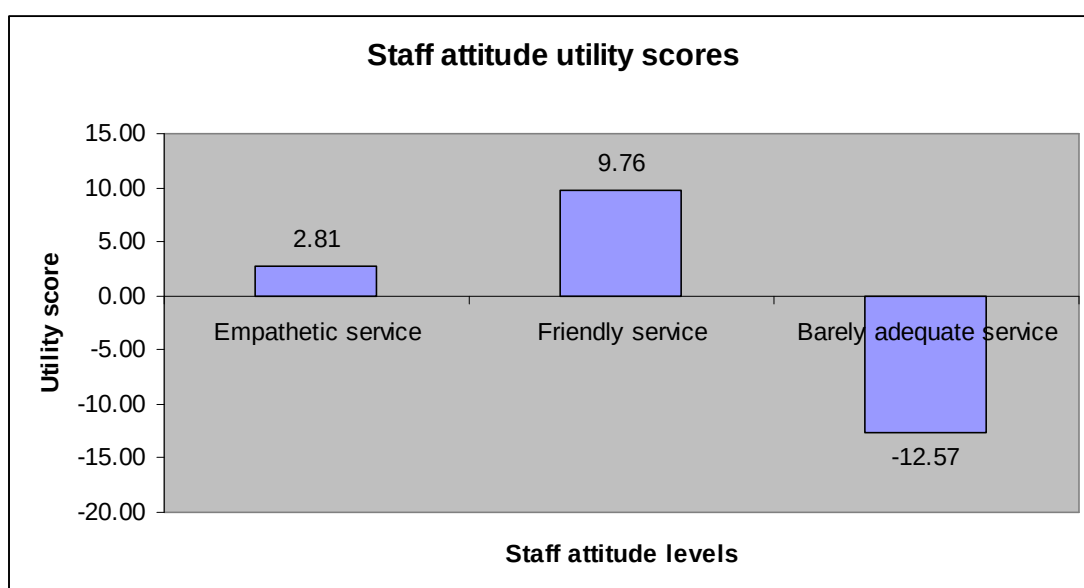
5.4.3. Staff attitude

Staff attitude was the least important intangible attribute according to the respondents, and only accounted for 7% of the variance in the answers.

The spread of individual attribute importance scores across respondents was positively skewed, with one response well above the rest. This response did not overly affect the overall outcome, however, and was left in by the researcher to constitute a particularly strong opinion.



There were also no statistically significant findings in this attribute. A closer look at the total level utility scores however yields an interesting finding:



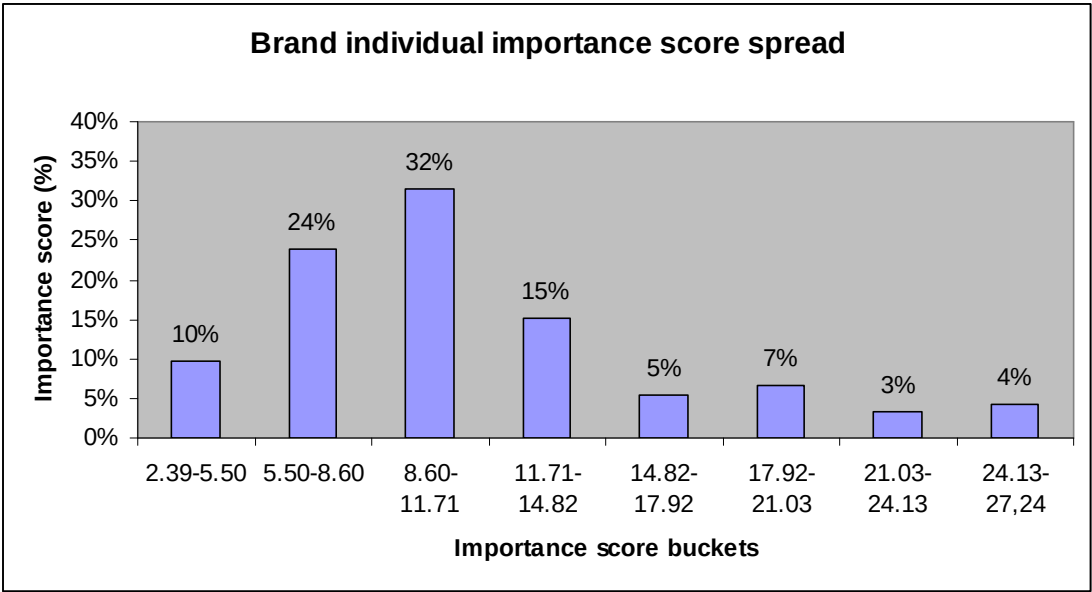
The research then indicates that respondents have a more positive sentiment towards friendly service than empathetic service. This may be an error in the wording of the questionnaire, although it might also represent respondents' belief that empathetic staff may, for example, be too intrusive. It is also possible that this result is an artefact and that respondents were in fact choosing on other criteria and just happened to appear choose friendly

service over empathetic service. This is a methodology flaw that is explained and accepted in the methodology chapter.

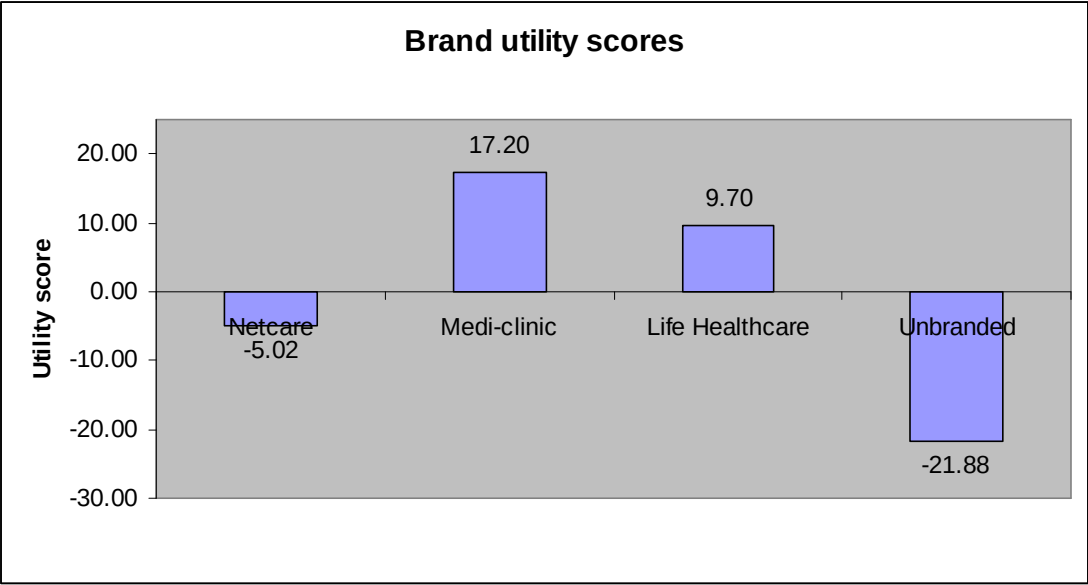
5.4.4. Brand

Brand appeared as the fourth most important attribute when deciding upon a private healthcare facility, perhaps somewhat surprisingly for some ranking above price, staff attitude and access.

The spread of individual importance scores across respondents further show that this is not due to outlying data, but is a consistent view held by the majority of respondents. There is a slight positive skewness to the distribution curve, with a fattening of the upper tail, possibly pointing to a group of individuals who hold this attribute in higher regard, which will be covered in the following paragraphs.

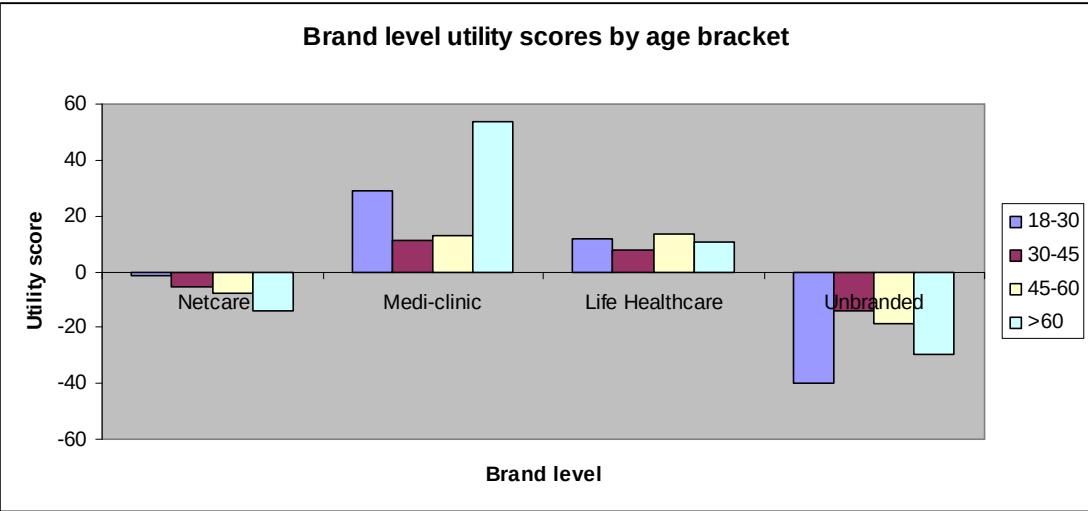


The breakdown of the brand level utility scores looks as follows:

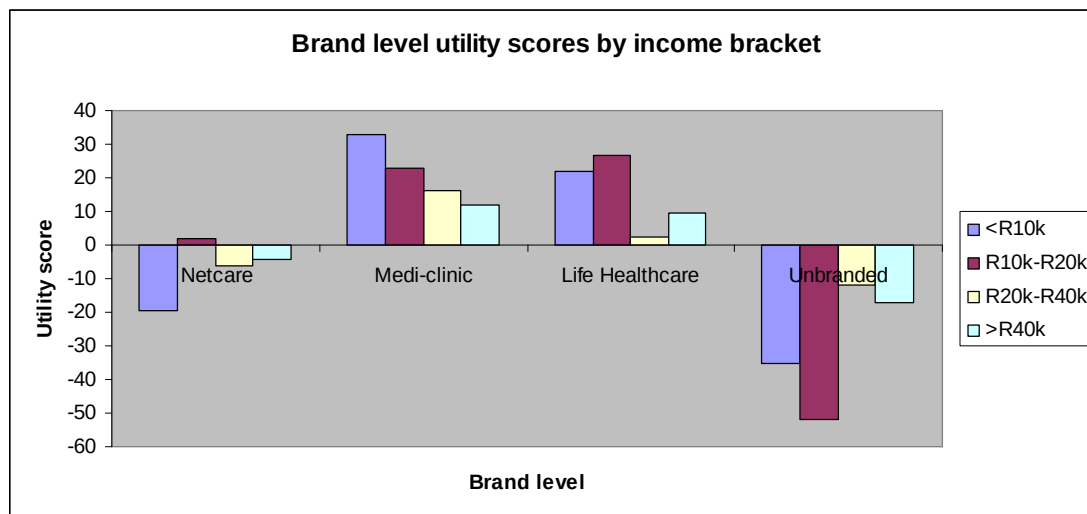


Here it can be seen that Medi-Clinic garnered the most positive sentiment, followed by Life Healthcare, Netcare and finally by an appreciable negative sentiment towards an unbranded private hospital facility. This talks to the respondents brand association with varying levels of expectations, trust and service.

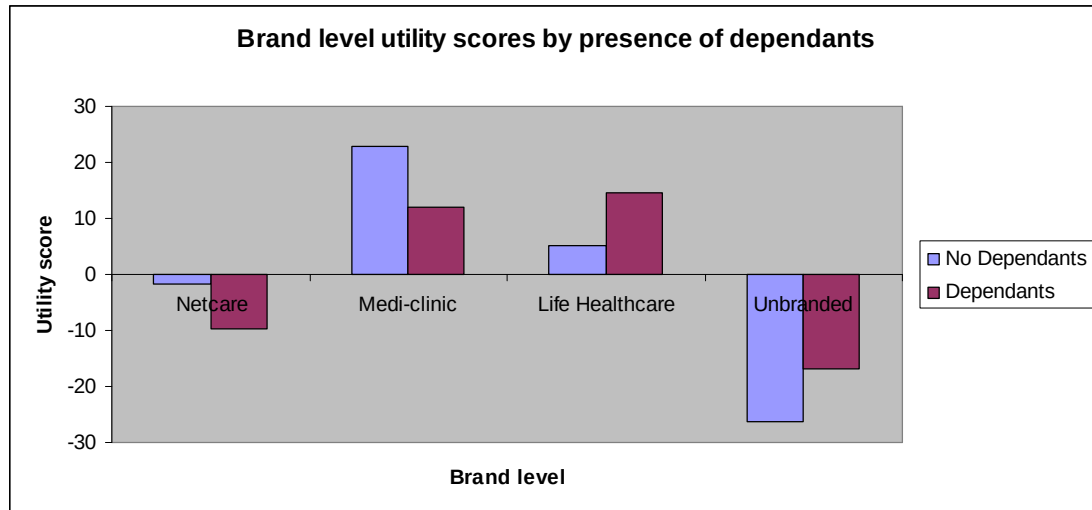
There were also significant findings across certain demographics with regards to the brand importance:



It is immediately apparent from the graph that the extremes of age differ from the middle two brackets once more. Both the youngest and the eldest age demographics felt most strongly negative about an unbranded facility and most strongly about Medi-Clinic. All age brackets felt more positively about Life Healthcare institutions than Netcare, although all age brackets would rather go to any of the branded hospital institutions than an unbranded institution.



This graph has some interesting graphical findings, showing the lower income brackets perhaps somewhat surprisingly feeling most negative about an unbranded facility, and most strongly about the Medi-Clinic and Life Healthcare branded institutions. This may point towards a specific target market although it is difficult to say with no supporting evidence. Further research into this phenomenon may prove insightful.



Again, this may be an issue related to a specific target market, or simply an artefact, but the respondents with no dependants displayed the most negative sentiment towards an unbranded institution, and the most positive sentiment towards a Medi-clinic institution. Those with dependants actually preferred Life Healthcare marginally to Medi-clinic, although still preferred both to the Netcare institution, and any branded versus an unbranded institution.

5.5. CONCLUSION

Here various attributes studied in this research will be covered, along with a brief summary of the importance and attribute level scores that were elicited.

5.5.1. Staff Competence

Staff competence was the most important attribute overall, yet did not rank number 1 across all demographics. This finding is consistent with previous studies (Ryan et al, 2000 & Jan et al, 2000). Specifically those in the 18-30 year age bracket only ranked competence third and the lower two income brackets also ranked staff competence second and third respectively.

Within the staff competence attribute, there is a large negative sentiment towards those private hospital facilities where there is a perceived “little

confidence” in the staff competence. There were also some interesting findings here:

- Those aged between 30 and 60 also had stronger views than those on the extremes of the age brackets with regards to staff competence;
- Males are more opinionated and have a higher importance score for this attribute than females;
- Those with higher earning power demand better staff competency than those in the lower income brackets;
- Those with dependants also demand a higher level of staff competency.

5.5.2. Facility Quality

Facility quality emerged as the second most important attribute overall, and was ranked as the most important by those with the lowest earning potential. Males ranked this attribute third most important behind staff competence and location, and were significantly different in the importance of this attribute from females.

When analysed within the levels of the attribute, there was a large negative sentiment towards outdated facilities, with a fairly neutral outlook on standard facilities and positive towards leading edge facilities.

Females were in fact more opinionated than males in regards to this attribute and also had a higher importance score.

5.5.3. Location

Location ranked third in importance overall and across most demographics, although those aged between 18 and 30 years, as well as those who earn

between 10 and 20 thousand rand per month, ranked this attribute as the most important.

Within the attribute there were positive sentiments towards both the facilities that were 5 minutes travelling time away and those that were 30 minutes travelling time away, with a corresponding massive negative sentiment towards those facilities that were 2 hours travelling time away.

These results confirm that location is an important attribute although further research may be done in the gulf in perception between the 30 minutes and 2 hours levels.

5.5.4. Brand

Brand came out in the middle of the attribute rankings, with an importance score overall that came in fourth out of the seven attributes examined. This attribute was particularly important for the youngest age demographic (18-30 years of age) and also showed a declining trend as the earning power of respondents increased. Both these were statistically significant findings. Lastly, it was shown that those respondents without dependants felt stronger about the brand of a hospital than those with dependants. There is no intuitive reason for this last result that the researcher could conclude, and as such perhaps some further qualitative research may be of benefit here.

When analysed from the levels of the attributes, overall Medi-Clinic had the most positive sentiment, and this was largely driven by the lower income brackets and the extremes of age demographics. These same demographics felt similar strongly negative about unbranded facilities. Life healthcare facilities emerged as the second strongest brand, also benefiting from positive sentiment from the lower income brackets.

Netcare, however, emerged in third place, only ahead of an unbranded facility and was particularly negative in the lowest income bracket and the elderly.

5.5.5. Price

Price was the fifth most important attribute overall, accounting for just over 10% of the decision making by respondents. The extremes of the age brackets felt most strongly about this attribute, and it was also a significantly more important decision making attribute for females than males.

There were no major surprises when sub-analysing the attribute levels, with medical aid rates seen as neutral, discounted medical aid rates seen in a positive light and charges above medical aid rates viewed as negative.

This study did not find any statistical evidence indicating that the importance of price was altered by income.

5.5.6. Staff Attitude

The staff attitude was second last on the overall importance scores, accounting for only just over 7% of the decision making by respondents. In a very interesting twist, respondents actually viewed friendly staff in a more positive light than those who were empathetic. This may indicate a view by respondents that empathetic staff may be more intrusive, although further qualitative research may shed more light on this interesting finding.

Staff whose service was barely adequate received the only negative sentiment in this attribute relative to the other two, however, with both friendly and empathetic staff viewed in a positive light.

5.5.7. Access

Access was viewed by respondents as the least important attribute, although only marginally lower than staff attitude with also just over 7% of decision making accounted for by this attribute. There were no significant differences across demographics within this attribute.

Sentiment was highest for ample access features, although also positive for sufficient access. Never enough access received a strongly negative sentiment, therefore leading to the conclusion that this attribute, whilst not a major positive decision making attribute, has the influence to negatively affect potential consumers in a private hospital facility.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1. INTRODUCTION

This chapter serves to relate the results gleaned in the previous two chapters into a meaningful conclusion that will assist private hospital facility managers in their relationships and understanding with their end consumers.

As such there are subjective interpretations and recommendations from the researcher on matters concerning future business strategies, marketing plans and staff requirements based on the findings of this study.

6.2. CONCLUSIONS OF THE STUDY

The main research problem was to analyse consumer preferences in the choice of private hospital institutions in South Africa, with both tangible and intangible attributes that contribute to consumer decision making being explored.

Both tangible and intangible attributes were important in the decision making of respondents, with the four tangible attributes accounting for 54% of the variance, and intangible accounting for the other 46%.

Of the attributes investigated, the staff competence was easily the most important attribute to consider. This then follows that employing well trained, efficient staff is critical to the success of any private hospital facility. It is also important to portray this to the public, as this study focussed on the perceptions of end consumers. The strongly negative sentiment towards staff that inspire little confidence in their competency show just how crucial this is to acquiring walk in consumers in a private hospital facility. This attribute was also more important to those in the middle age brackets and to males over

females. Those with higher earning power also demanded a higher level of staff competence.

Next to staff competency, facility quality was the next most important attribute used by respondents. This highlights the need for private hospital facilities to budget in appropriate outlays to keep facilities up to date. Again the outdated facilities showed strongly negative sentiment, and this was most pronounced in the female demographic.

Next on the list of importances was location. This came out strongly as an attribute, although the sentiment was positive for facilities within 30 minutes travelling time and sharply negative for those 2 hours travelling time away. This indicates that there is a limit that end consumers are willing to travel, although further research would be required to ascertain the exact limit. A meaningful interpretation for the private healthcare manager would be that private hospital facility managers cannot be static and new facilities in high growth areas may be very beneficial. It also means that the end consumer for a private hospital facility will for the most part come from a limited distance around the facility, and research into the surrounding demographics would be wise.

Between the three top attributes, almost 2/3 of the variance in respondent decision making was dealt with, meaning the bottom four between them only account for 1/3 of the decision making process.

Next on the rankings of attribute importances was the brand recognition of the private hospital facility. Respondents reacted sharply negatively to an unbranded facility, meaning all new and current facilities benefit greatly from the added comfort their brand offers to the end consumer. Medi-clinic appears to be winning the brand race amongst the respondents, especially among the young and old, and also amongst the lower income bracket. Netcare did not fare as well, and might think about doing some market research into their brand strength.

Price did feature on the importance rankings, although only came in a lowly fifth. This most likely indicates the high proportion of respondents who had comprehensive medical insurance and not too much should be read into this result. If demographic data for certain private hospital facilities indicate large amounts of end consumers who do not have comprehensive medical insurance, then further research with an adequately representative sample may indeed be necessary.

The last two attributes were both very lowly in importance rankings, and were the staff attitude and access features of the private hospital facility. Whilst both of these did play a role in decision making and may very well swing decisions all other attributes being equal, they were not of great importance in this study. Of interesting note was the finding that respondents preferred friendly to empathetic staff, and this should be taken into account when defining the level of interaction of staff in staff-end consumer dealings.

It should also again be stressed that the researcher intentionally did not take waiting time into account in this research, and this has been shown to be an important attribute for end consumers (Jan et al, 2000). However, this is not specific to the healthcare industry nor does it apply to strategic, marketing or expansionary decision making, being of an operational nature, and therefore fell outside the scope of this research.

6.3. RECOMMENDATIONS

The author has certain recommendations that come out of this research. Firstly, opinions have statistically been shown to vary across demographics, and as such the demographics of end consumers attending a private hospital facility are clearly of paramount importance. For this research to have any practical benefit for the private hospital facility manager, the demographics of the target market must be identified.

The research also shows that there is no single defining criterion or attribute that end consumers will use in making their decision of which private hospital facility to attend. It is a multi-factorial decision making process and many aspects must be considered. The private hospital manager therefore needs to attempt to encompass as many of these factors as possible when looking to attract end consumers on a walk in basis.

Whilst competence had the highest importance score for decision making by respondents in this study, it also had significant differences across many demographics; namely age, gender, income brackets and decision makers. This should be taken in context, as it scored the number 1 rank for every demographic except for those between 18 and 30 years of age, and those earning under R20 000 per month. It was in the top 3 across every demographic, as was facility quality. These two attributes are where private hospital facility managers need to pay most attention.

The facility quality aspect may be solved by budgeting appropriate amounts to upgrading the facilities, but with highly trained and skilled staff necessary to attract end consumers, private hospital facility managers need to look at unique ways of attracting and retaining talent. What will drive health professional retention is a matter for another study.

Certain factors are seen as being hugely negative, such as a facility that is 2 hours away or that is unbranded. These factors must be addressed if the private hospital facility manager is looking to attract any walk in end consumers.

The attribute levels in this study were not always in line with what the respondents were looking for. The example of this is the fact that respondents looked more favourably on friendly staff than empathetic staff. This response showcases the error of assuming respondents or end consumers will have the same criteria as those making the decisions. This did not affect the results of this study in any way, yet remains a warning for private hospital facility

managers to make sure they are addressing the end consumers' and not their own needs.

The aspect of location came across strongly, yet there remains scope to examine the relationship between distance and the willingness to attend a private hospital facility. In summary, private hospital facility managers must be prepared to expand into new growth areas, or they may lose any competitive advantage for the residents in that new area to a competitor who moved before they did. The lack of willingness to travel long distances to attend private hospital facilities also means that private hospital facility managers must be aware of the residents around their facilities and be able to cater for their specific needs.

This research study applies to walk in, non-emergency cases, and any private hospital facility manager must take these results in context. There may be a differing scale for patients who require admission, and those who have emergency conditions. The percentages that walk in consumers contribute directly and indirectly through word of mouth across health disciplines needs to be factored in and considered.

These criteria are for the end consumer, yet there also exists the mechanism for health professionals to refer end consumers to a private hospital facility. In this way all the referring health professionals can also be viewed as a target market for private hospital facility managers. This can and should be researched and explored.

The direct recommendations of the author arising from this research for private healthcare managers would therefore be the following:

- Hire the best trained and most competent staff members; this is the most critical aspect of a successful private hospital facility.
- Innovative staff retention strategies need to be looked at in order to attract and retain the highest calibre of staff possible. Incentive

schemes, training programmes and work-life balance initiatives may all be considered.

- Make sure to budget adequate amounts to keep the facilities up to date. Whilst it may not be necessary to have the most leading edge facilities, depending on your target market, if the facilities degrade to the point of being out-dated this will chase end consumers away.
- Make sure to know the demographics of people who live or work in the region around your facility. These will most likely be the people who frequent your facility, and different demographics may require different approaches.
- If there is decentralization or new high growth residential areas emerging, these provide an opportunity to place a private hospital facility in their midst. This will give a competitive advantage over those existing facilities further away.
- Know and work on your brand strength. Conversely if you do not work for a recognised brand, link yourself to a trusted name when starting your facility. The market reacts badly to an unbranded facility.
- Price is not hugely important, but does play a factor with end consumers who have comprehensive medical insurance. Make sure you know the earning, and more importantly, the medical insurance cover for your target market. If there is little or no medical insurance cover presented by the end consumers of your facility, this research does not hold sway for the financial aspect.
- Staff attitude plays a limited role in the decision making, but this research bears little or no mention of repeat visits. This aspect should not be totally ignored, but may move down the priority list. Some qualitative research with the end consumers in your facility may help define the exact level of interaction wanted by the end consumers.

- Access is a limiting factor. If there is never enough access people react negatively, although as long as there is mostly sufficient access the end consumer does not see this as a major decision factor. Make sure you have enough access, but it is not necessary, based on this research, to invest hugely in this aspect.

6.4. SUGGESTIONS FOR FURTHER RESEARCH

- The most obvious further research that can be done in conjunction with this research is an historical demographic study of all end consumers attending private hospital facilities. This would greatly help in focussing on relevant aspects of this research and may also turn up areas where the demographic profile in this study may not be sufficient.
- A more in depth study of the limits for location and access may yield more exact and useful information.
- A qualitative study into the amount of staff-patient interaction that is deemed most favourable by the end consumer.
- A less biased sample with regards to the elderly, as this forms a medical field all apart. This study repeated with a focus on the elderly may assist private healthcare managers in regions that have large amounts of elderly end consumers/retirement villages.
- A more in depth look at pricing, making sure to have a balanced sample from across the earning brackets as well as medical insurance cover.
- A similar study conducted in the public sector, although this will most likely by necessity have to be done with a manual sampling technique, with a comparative analysis thereafter.
- A qualitative study into the retention criteria for health professionals.

- A similar study dealing with patients that require admission and those that necessitate emergency treatment.
- A study into what decision criteria health professionals use when deciding to refer patients to a private hospital facility or to a specialist at that facility.

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CHAPTER 8: APPENDICES

8.1. APPENDIX A – INTERVIEW PROCESS AND QUESTIONNAIRE

Interviews were done via an electronic survey, with IP addresses instead of names stored and a snowball, convenience methodology used. The online survey consisted of multiple pages, shown in full below, this is the post-pilot phase survey:



Welcome

Thank you for taking the time to help complete this survey.

Please click on "next" to advance to some demographic questions, which you will be asked to complete before beginning the survey.

Instructions on how the survey is structured and what will be required of you will follow after the demographic questions have been completed.

Thank you in advance for your time.

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Demographics (statistical purposes only, absolutely anonymous, * are compulsory questions)

*** 1. Age**

- ☐ <18
- ☐ 18-30
- ☐ 30-45
- ☐ 45-60
- ☐ >60

*** 2. Gender**

- ☐ Male
- ☐ Female

3. Income bracket(per month)

- ☐ <R2,500
- ☐ R2,501-R5,000
- ☐ R5,001-R10,000
- ☐ R10,001-R20,000
- ☐ R20,001-R40,000
- ☐ >R40,000

*** 4. Are you covered by any sort of medical insurance?**

- ☐ Yes, I have comprehensive medical insurance.
- ☐ Yes, I have limited medical insurance.
- ☐ No, I have no medical insurance.

5. Are you the decision-maker for any dependants?

- ☐ Yes
- ☐ No

*** 6. Do you exclusively use South African private healthcare facilities?**

- ☐ Yes, I exclusively use South African private healthcare facilities.
- ☐ No, I use South African government-funded healthcare facilities for certain services.

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Instructions

For the purposes of this survey please pretend that you require NON-URGENT medical attention that necessitates you to attend a private hospital facility. This should be on a WALK-IN BASIS and not by referral or appointment.

On the following pages you will be given TWO OPTIONS of hypothetical hospitals, each having specific attributes. ALL of the attributes on one side belong to that hospital, you cannot mix and match between the right and left sets. Your job is to DECIDE WHICH OF THE TWO HOSPITALS YOU WOULD RATHER GO TO. If you would MUCH rather prefer to go to the hospital on the left, vote strongly to the left. If you would MUCH rather prefer the hospital on the right, vote strongly to the right. If only SLIGHTLY preferring one option set, vote closer to the middle. A vote of '5' means you absolutely cannot decide which of the two hospitals you would choose. Here is an example.....

Which of the following would you prefer?

-A well known reliable hospital -Right next door -Excellent service and treatment	or	-An unknown hospital -Miles away -Terrible service and treatment
---	----	--

*** 1. Preference:**

1-Strongly prefer left	2	3-Somewhat prefer left	4	5-Indifferent	6	7-Somewhat prefer right	8	9-Strongly prefer right
Preference								

In this example if you strongly preferred the option set on the left (in the dark blue box) you would vote a '2' or '1'; if you strongly preferred the option set on the right (in the light blue box) you would choose an '8' or '9'. If you really didn't care which of the two hypothetical hospitals you went to, you would choose '5'.

After that simply click on the 'next' button and a different option set will open for you. There are 32 option sets in total, numbered at the top of the page.

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There were then 32 option sets, shown to the respondent one after the other, and the respondents were asked to click on a number from 1 to 9...

Option Set 1 of 32

Which of the following would you prefer?

-A Netcare hospital -30 minutes away -Never enough parking and access -Leading edge modern facilities -You have absolute confidence in the staff competency -The staff are friendly enough -They charge exactly medical aid rates	or	-A Medi-clinic hospital -2 hours away -Mostly sufficient parking and access -Outdated medical facilities -You have little or no confidence in the staff competency -Staff-patient interaction is barely adequate -They charge discounted medical aid rates
---	----	--

*** 1. Preference:**

1-Strongly prefer left	2	3-Somewhat prefer left	4	5-Indifferent	6	7-Somewhat prefer right	8	9-Strongly prefer right
Preference								

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Option Set 2 of 32

Which of the following would you prefer?

-A Medi-clinic hospital -5 minutes away -Mostly sufficient parking and access -Leading edge modern facilities -You have absolute confidence in the staff competency -Staff-patient interaction is barely adequate -They charge discounted medical aid rates	or	-A Life Healthcare hospital -2 hours away -Ample parking and access -Standard but not out-dated medical facilities -You have reasonable confidence in the staff competency -The staff are friendly enough -They charge above medical aid
---	----	--

* 1. Preference:

1-Strongly prefer left 2 3-Somewhat prefer left 4 5-Indifferent 6 7-Somewhat prefer right 8 9-Strongly prefer right

Preference

Prev Next

The only thing that then changed between the options sets were the choices offered in the two boxes, as according to the Sawtooth™ software's pre-defined format. These various option sets are listed below:

Option Set 3 of 32

Which of the following would you prefer?

-A Medi-clinic hospital -2 hours away -Ample parking and access -Outdated medical facilities -You have reasonable confidence in the staff competency -The staff are truly empathetic -They charge exactly medical aid rates	or	-A Life Healthcare hospital -5 minutes away -Mostly sufficient parking and access -Standard but not out-dated medical facilities -You have absolute confidence in the staff competency -Staff-patient interaction is barely adequate -They charge above medical aid
---	----	---

* 1. Preference:

1-Strongly prefer left 2 3-Somewhat prefer left 4 5-Indifferent 6 7-Somewhat prefer right 8 9-Strongly prefer right

Preference

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Option Set 4 of 32

Which of the following would you prefer?

-A Netcare hospital -5 minutes away -Never enough parking and access -Outdated medical facilities -You have absolute confidence in the staff competency -Staff-patient interaction is barely adequate -They charge above medical aid rates	or	-An unbranded hospital -2 hours away -Mostly sufficient parking and access -Standard but not out-dated medical facilities -You have little or no confidence in the staff competency -The staff are truly empathetic -They charge exactly medical aid rates
--	----	--

* 1. Preference:

	1-Strongly prefer left	2	3-Somewhat prefer left	4	5-Indifferent	6	7-Somewhat prefer right	8	9-Strongly prefer right
Preference	☐	☐	☐	☐	☐	☐	☐	☐	☐

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Option Set 5 of 32

Which of the following would you prefer?

-A Life Healthcare hospital -30 minutes away -Never enough parking and access -Leading edge modern facilities -You have reasonable confidence in the staff competency -Staff-patient interaction is barely adequate -They charge discounted medical aid rates	or	-A Netcare hospital -5 minutes away -Ample parking and access -Standard but not out-dated medical facilities -You have little or no confidence in the staff competency -The staff are friendly enough -They charge above medical aid
---	----	--

* 1. Preference:

	1-Strongly prefer left	2	3-Somewhat prefer left	4	5-Indifferent	6	7-Somewhat prefer right	8	9-Strongly prefer right
Preference	☐	☐	☐	☐	☐	☐	☐	☐	☐

Prev

Next

Which of the following would you prefer?

-An unbranded hospital -5 minutes away -Mostly sufficient parking and access -Standard but not out-dated medical facilities -You have reasonable confidence in the staff competency -The staff are truly empathetic -They charge exactly medical aid rates	or	-A Medi-clinic hospital -2 hours away -Ample parking and access -Outdated medical facilities -You have little or no confidence in the staff competency -The staff are friendly enough -They charge above medical aid
--	----	--

*1. Preference:

	1-Strongly prefer left	2	3-Somewhat prefer left	4	5-Indifferent	6	7-Somewhat prefer right	8	9-Strongly prefer right
Preference	☐	☐	☐	☐	☐	☐	☐	☐	☐

Prev
Next

Which of the following would you prefer?

-A Life Healthcare hospital -5 minutes away -Never enough parking and access -Outdated medical facilities -You have reasonable confidence in the staff competency -The staff are friendly enough -They charge above medical aid	or	-A Netcare hospital -30 minutes away -Mostly sufficient parking and access -Standard but not out-dated medical facilities -You have absolute confidence in the staff competency -Staff-patient interaction is barely adequate -They charge exactly medical aid rates
---	----	--

*1. Preference:

	1-Strongly prefer left	2	3-Somewhat prefer left	4	5-Indifferent	6	7-Somewhat prefer right	8	9-Strongly prefer right
Preference	☐	☐	☐	☐	☐	☐	☐	☐	☐

Prev
Next

Which of the following would you prefer?

-An unbranded hospital -5 minutes away -Mostly sufficient parking and access -Standard but not out-dated medical facilities -You have reasonable confidence in the staff competency -The staff are friendly enough -They charge above medical aid	or	-A Netcare hospital -30 minutes away -Ample parking and access -Leading edge modern facilities -You have absolute confidence in the staff competency -Staff-patient interaction is barely adequate -They charge discounted medical aid rates
---	----	--

* 1. Preference:

	1-Strongly prefer left	2	3-Somewhat prefer left	4	5-Indifferent	6	7-Somewhat prefer right	8	9-Strongly prefer right
Preference	☐	☐	☐	☐	☐	☐	☐	☐	☐

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Which of the following would you prefer?

-An unbranded hospital -2 hours away -Ample parking and access -Leading edge modern facilities -You have reasonable confidence in the staff competency -Staff-patient interaction is barely adequate -They charge discounted medical aid rates	or	-A Medi-clinic hospital -30 minutes away -Mostly sufficient parking and access -Standard but not out-dated medical facilities -You have little or no confidence in the staff competency -The staff are truly empathetic -They charge exactly medical aid rates
--	----	--

* 1. Preference:

	1-Strongly prefer left	2	3-Somewhat prefer left	4	5-Indifferent	6	7-Somewhat prefer right	8	9-Strongly prefer right
Preference	☐	☐	☐	☐	☐	☐	☐	☐	☐

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Which of the following would you prefer?

-A Netcare hospital -2 hours away -Ample parking and access -Standard but not out-dated medical facilities -You have little or no confidence in the staff competency -Staff-patient interaction is barely adequate -They charge exactly medical aid rates	or	-A Life Healthcare hospital -30 minutes away -Never enough parking and access -Leading edge modern facilities -You have absolute confidence in the staff competency -The staff are truly empathetic -They charge discounted medical aid rates
---	----	---

* 1. Preference:

	1-Strongly prefer left	2	3-Somewhat prefer left	4	5-Indifferent	6	7-Somewhat prefer right	8	9-Strongly prefer right
Preference	☐	☐	☐	☐	☐	☐	☐	☐	☐

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Which of the following would you prefer?

-A Life Healthcare hospital -30 minutes away -Ample parking and access -Standard but not out-dated medical facilities -You have absolute confidence in the staff competency -The staff are friendly enough -They charge discounted medical aid rates	or	-An unbranded hospital -2 hours away -Never enough parking and access -Leading edge modern facilities -You have reasonable confidence in the staff competency -Staff-patient interaction is barely adequate -They charge exactly medical aid rates
--	----	--

* 1. Preference:

	1-Strongly prefer left	2	3-Somewhat prefer left	4	5-Indifferent	6	7-Somewhat prefer right	8	9-Strongly prefer right
Preference	☐	☐	☐	☐	☐	☐	☐	☐	☐

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Which of the following would you prefer?

-A Netcare hospital	or	-An unbranded hospital
-2 hours away		-30 minutes away
-Mostly sufficient parking and access		-Ample parking and access
-Standard but not out-dated medical facilities		-Outdated medical facilities
-You have reasonable confidence in the staff competency		-You have little or no confidence in the staff competency
-The staff are friendly enough		-The staff are truly empathetic
-They charge above medical aid		-They charge exactly medical aid rates

*1. Preference:

	1-Strongly prefer left	2	3-Somewhat prefer left	4	5-Indifferent	6	7-Somewhat prefer right	8	9-Strongly prefer right
Preference	☐	☐	☐	☐	☐	☐	☐	☐	☐

Which of the following would you prefer?

-A Life Healthcare hospital	or	-An unbranded hospital
-2 hours away		-5 minutes away
-Ample parking and access		-Mostly sufficient parking and access
-Leading edge modern facilities		-Outdated medical facilities
-You have little or no confidence in the staff competency		-You have reasonable confidence in the staff competency
-The staff are truly empathetic		-Staff-patient interaction is barely adequate
-They charge exactly medical aid rates		-They charge discounted medical aid rates

*1. Preference:

	1-Strongly prefer left	2	3-Somewhat prefer left	4	5-Indifferent	6	7-Somewhat prefer right	8	9-Strongly prefer right
Preference	☐	☐	☐	☐	☐	☐	☐	☐	☐

Which of the following would you prefer?

-A Medi-clinic hospital -30 minutes away -Mostly sufficient parking and access -Leading edge modern facilities -You have reasonable confidence in the staff competency -The staff are friendly enough -They charge discounted medical aid rates	or	-An unbranded hospital -5 minutes away -Ample parking and access -Outdated medical facilities -You have absolute confidence in the staff competency -The staff are truly empathetic -They charge exactly medical aid rates
---	----	--

*1. Preference:

1-Strongly prefer left 2 3-Somewhat prefer left 4 5-Indifferent 6 7-Somewhat prefer right 8 9-Strongly prefer right

Preference

Prev Next

Which of the following would you prefer?

-A Medi-clinic hospital -2 hours away -Never enough parking and access -Standard but not out-dated medical facilities -You have little or no confidence in the staff competency -The staff are friendly enough -They charge exactly medical aid rates	or	-A Netcare hospital -5 minutes away -Ample parking and access -Outdated medical facilities -You have absolute confidence in the staff competency -The staff are truly empathetic -They charge above medical aid
---	----	---

*1. Preference:

1-Strongly prefer left 2 3-Somewhat prefer left 4 5-Indifferent 6 7-Somewhat prefer right 8 9-Strongly prefer right

Preference

Prev Next

Which of the following would you prefer?

-A Medi-clinic hospital -2 hours away -Mostly sufficient parking and access -Outdated medical facilities -You have absolute confidence in the staff competency -The staff are truly empathetic -They charge above medical aid	or	-An unbranded hospital -5 minutes away -Ample parking and access -Leading edge modern facilities -You have reasonable confidence in the staff competency -The staff are friendly enough -They charge discounted medical aid rates
---	----	---

*1. Preference:

	1-Strongly prefer left	2	3-Somewhat prefer left	4	5-Indifferent	6	7-Somewhat prefer right	8	9-Strongly prefer right
Preference	☐	☐	☐	☐	☐	☐	☐	☐	☐

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Which of the following would you prefer?

-An unbranded hospital -2 hours away -Never enough parking and access -Outdated medical facilities -You have absolute confidence in the staff competency -The staff are friendly enough -They charge discounted medical aid rates	or	-A Life Healthcare hospital -5 minutes away -Ample parking and access -Leading edge modern facilities -You have little or no confidence in the staff competency -Staff-patient interaction is barely adequate -They charge above medical aid
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*1. Preference:

	1-Strongly prefer left	2	3-Somewhat prefer left	4	5-Indifferent	6	7-Somewhat prefer right	8	9-Strongly prefer right
Preference	☐	☐	☐	☐	☐	☐	☐	☐	☐

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Which of the following would you prefer?

-A Medi-clinic hospital -5 minutes away -Ample parking and access -Leading edge modern facilities -You have reasonable confidence in the staff competency -The staff are truly empathetic -They charge exactly medical aid rates	or	-A Netcare hospital -2 hours away -Mostly sufficient parking and access -Outdated medical facilities -You have little or no confidence in the staff competency -The staff are friendly enough -They charge discounted medical aid rates
--	----	---

* 1. Preference:

	1-Strongly prefer left	2	3-Somewhat prefer left	4	5-Indifferent	6	7-Somewhat prefer right	8	9-Strongly prefer right
Preference	☐	☐	☐	☐	☐	☐	☐	☐	☐

Which of the following would you prefer?

-A Netcare hospital -5 minutes away -Never enough parking and access -Outdated medical facilities -You have little or no confidence in the staff competency -Staff-patient interaction is barely adequate -They charge discounted medical aid rates	or	-A Medi-clinic hospital -30 minutes away -Ample parking and access -Standard but not out-dated medical facilities -You have absolute confidence in the staff competency -The staff are friendly enough -They charge above medical aid
---	----	---

* 1. Preference:

	1-Strongly prefer left	2	3-Somewhat prefer left	4	5-Indifferent	6	7-Somewhat prefer right	8	9-Strongly prefer right
Preference	☐	☐	☐	☐	☐	☐	☐	☐	☐

Which of the following would you prefer?

-A Life Healthcare hospital -2 hours away -Ample parking and access -Standard but not out-dated medical facilities -You have reasonable confidence in the staff competency -The staff are truly empathetic -They charge above medical aid	or	-A Medi-clinic hospital -5 minutes away -Never enough parking and access -Leading edge modern facilities -You have little or no confidence in the staff competency -The staff are friendly enough -They charge exactly medical aid rates
---	----	--

* 1. Preference:



Prev Next

Which of the following would you prefer?

-A Netcare hospital -5 minutes away -Mostly sufficient parking and access -Leading edge modern facilities -You have little or no confidence in the staff competency -The staff are truly empathetic -They charge discounted medical aid rates	or	-An unbranded hospital -30 minutes away -Never enough parking and access -Outdated medical facilities -You have absolute confidence in the staff competency -Staff-patient interaction is barely adequate -They charge above medical aid
---	----	--

* 1. Preference:



Prev Next

Which of the following would you prefer?

-A Life Healthcare hospital -30 minutes away -Mostly sufficient parking and access -Outdated medical facilities -You have little or no confidence in the staff competency -The staff are friendly enough -They charge exactly medical aid rates	or	-A Medi-clinic hospital -2 hours away -Never enough parking and access -Standard but not out-dated medical facilities -You have reasonable confidence in the staff competency -Staff-patient interaction is barely adequate -They charge above medical aid
---	----	--

* 1. Preference:

	1-Strongly prefer left	2	3-Somewhat prefer left	4	5-Indifferent	6	7-Somewhat prefer right	8	9-Strongly prefer right
Preference	☐	☐	☐	☐	☐	☐	☐	☐	☐

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Which of the following would you prefer?

-A Netcare hospital -2 hours away -Never enough parking and access -Standard but not out-dated medical facilities -You have absolute confidence in the staff competency -Staff-patient interaction is barely adequate -They charge discounted medical aid rates	or	-A Medi-clinic hospital -30 minutes away -Mostly sufficient parking and access -Leading edge modern facilities -You have reasonable confidence in the staff competency -The staff are friendly enough -They charge above medical aid
---	----	--

* 1. Preference:

	1-Strongly prefer left	2	3-Somewhat prefer left	4	5-Indifferent	6	7-Somewhat prefer right	8	9-Strongly prefer right
Preference	☐	☐	☐	☐	☐	☐	☐	☐	☐

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Which of the following would you prefer?

-An unbranded hospital	or	-A Life Healthcare hospital
-5 minutes away		-30 minutes away
-Mostly sufficient parking and access		-Never enough parking and access
-Outdated medical facilities		-Standard but not out-dated medical facilities
-You have absolute confidence in the staff competency		-You have reasonable confidence in the staff competency
-The staff are truly empathetic		-Staff-patient interaction is barely adequate
-They charge above medical aid rates		-They charge exactly medical aid rates

* 1. Preference:

1-Strongly prefer left 2 3-Somewhat prefer left 4 5-Indifferent 6 7-Somewhat prefer right 8 9-Strongly prefer right

Preference

Prev Next

Which of the following would you prefer?

-An unbranded hospital	or	-A Netcare hospital
-30 minutes away		-5 minutes away
-Never enough parking and access		-Mostly sufficient parking and access
-Standard but not out-dated medical facilities		-Leading edge modern facilities
-You have little or no confidence in the staff competency		-You have reasonable confidence in the staff competency
-The staff are truly empathetic		-Staff-patient interaction is barely adequate
-They charge discounted medical aid rates		-They charge exactly medical aid rates

* 1. Preference:

1-Strongly prefer left 2 3-Somewhat prefer left 4 5-Indifferent 6 7-Somewhat prefer right 8 9-Strongly prefer right

Preference

Prev Next

Which of the following would you prefer?

-A Life Healthcare hospital -5 minutes away -Never enough parking and access -Standard but not out-dated medical facilities -You have little or no confidence in the staff competency -Staff-patient interaction is barely adequate -They charge above medical aid	or	-An unbranded hospital -2 hours away -Mostly sufficient parking and access -Leading edge modern facilities -You have absolute confidence in the staff competency -The staff are truly empathetic -They charge discounted medical aid rates
--	----	--

* 1. Preference:

	1-Strongly prefer left	2	3-Somewhat prefer left	4	5-Indifferent	6	7-Somewhat prefer right	8	9-Strongly prefer right
Preference	☐	☐	☐	☐	☐	☐	☐	☐	☐

Which of the following would you prefer?

-A Netcare hospital -30 minutes away -Ample parking and access -Outdated medical facilities -You have reasonable confidence in the staff competency -The staff are friendly enough -They charge exactly medical aid rates	or	-A Medi-clinic hospital -2 hours away -Never enough parking and access -Leading edge modern facilities -You have absolute confidence in the staff competency -The staff are truly empathetic -They charge above medical aid
---	----	---

* 1. Preference:

	1-Strongly prefer left	2	3-Somewhat prefer left	4	5-Indifferent	6	7-Somewhat prefer right	8	9-Strongly prefer right
Preference	☐	☐	☐	☐	☐	☐	☐	☐	☐

Which of the following would you prefer?

-A Medi-clinic hospital -30 minutes away -Ample parking and access -Standard but not out-dated medical facilities -You have reasonable confidence in the staff competency -Staff-patient interaction is barely adequate -They charge discounted medical aid rates	or	-A Life Healthcare hospital -2 hours away -Never enough parking and access -Leading edge modern facilities -You have little or no confidence in the staff competency -The staff are friendly enough -They charge exactly medical aid rates
---	----	--

*1. Preference:

	1-Strongly prefer left	2	3-Somewhat prefer left	4	5-Indifferent	6	7-Somewhat prefer right	8	9-Strongly prefer right
Preference	☐	☐	☐	☐	☐	☐	☐	☐	☐

Prev
Next

Which of the following would you prefer?

-An unbranded hospital -30 minutes away -Mostly sufficient parking and access -Leading edge modern facilities -You have little or no confidence in the staff competency -The staff are truly empathetic -They charge above medical aid	or	-A Medi-clinic hospital -5 minutes away -Never enough parking and access -Outdated medical facilities -You have absolute confidence in the staff competency -The staff are friendly enough -They charge exactly medical aid rates
--	----	---

*1. Preference:

	1-Strongly prefer left	2	3-Somewhat prefer left	4	5-Indifferent	6	7-Somewhat prefer right	8	9-Strongly prefer right
Preference	☐	☐	☐	☐	☐	☐	☐	☐	☐

Prev
Next

Which of the following would you prefer?

-A Life Healthcare hospital -2 hours away -Mostly sufficient parking and access -Outdated medical facilities -You have absolute confidence in the staff competency -Staff-patient interaction is barely adequate -They charge exactly medical aid rates	or	-A Netcare hospital -30 minutes away -Never enough parking and access -Standard but not out-dated medical facilities -You have little or no confidence in the staff competency -The staff are truly empathetic -They charge discounted medical aid rates
---	----	--

* 1. Preference:



Prev Next

Which of the following would you prefer?

-An unbranded hospital -30 minutes away -Ample parking and access -Leading edge modern facilities -You have little or no confidence in the staff competency -Staff-patient interaction is barely adequate -They charge above medical aid	or	-A Life Healthcare hospital -5 minutes away -Never enough parking and access -Outdated medical facilities -You have reasonable confidence in the staff competency -The staff are truly empathetic -They charge discounted medical aid rates
--	----	---

* 1. Preference:



Prev Next

Which of the following would you prefer?

-A Life Healthcare hospital -5 minutes away -Ample parking and access -Standard but not out-dated medical facilities -You have absolute confidence in the staff competency -The staff are friendly enough -They charge discounted medical aid rates	or	-A Netcare hospital -30 minutes away -Never enough parking and access -Outdated medical facilities -You have reasonable confidence in the staff competency -The staff are truly empathetic -They charge above medical aid
---	----	---

* 1. Preference:

	1-Strongly prefer left	2	3-Somewhat prefer left	4	5-Indifferent	6	7-Somewhat prefer right	8	9-Strongly prefer right
Preference	☐	☐	☐	☐	☐	☐	☐	☐	☐

Thank You

Thank you for taking the time to complete this survey, your assistance is greatly appreciated.

8.2. APPENDIX B – CONSISTENCY MATRIX

Table 3: Consistency Matrix

The main problem is to analyse consumer preferences in the choice of private hospital institutions in South Africa.					
Sub-problem 1	Research proposition 1	Source of theory	Source of data	Type of data	Analysis
<u>The first sub-problem</u> is analysing the tangible attributes that contribute to consumer decision making.	Consumer preferences in the choice of hospital facilities are influenced by tangible factors. As such the location, access and price play a role in consumer decision making with regard to hospital facility choice.	Kotler and Keller, 2003 Adcock et al, 1993 Douglas, 1973 Ettenson & Turner, 1997 Razzouk et al, 2004 Tontini & Silveira, 2007 Acito, 1978 Koo et al, 1999	- Electronic choice based conjoint survey - Pilot phase interview	Ordinal rating data	Conjoint analysis, Sawtooth™ Cluster analysis

Sub-problem 2	Research proposition 2	Source of theory	Source of data	Type of data	Analysis
<u>The second sub-problem</u> is defining the intangible attributes that contribute to consumer decision making.	Consumer preferences will be influenced by the intangible attributes affecting perceptions at a private hospital facility. As such, the perceived staff competence; as well as the perceptions of staff attitude at that institution and brand association will play a role in consumer decision making.	Parasuraman et al, 1985, 1994 Shahin, 2003 Cronin et al, 1992,1994 Rust et al, 1993 Shemwell & Yavas, 1999 Brady & Cronin, 2001 Oppewal et al, 2000 Babakus et al, 1992 Penchansky & Thomas, 1981 Carman, 2000 Choi et al, 2005 Belen del Rio et al, 2001 Kim et al, 2003 Bhat et al, 2003	- Electronic choice based conjoint survey - Pilot phase interview	Ordinal rating data	Conjoint analysis, Sawtooth™ Cluster Analysis

8.3. APPENDIX C – ATTRIBUTE IMPORTANCE DATA

8.3.1. Facilities

Facilities by Age

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Age	3	207.4421	69.14737	0.65	0.587721
S(A)	89	9531.61	107.0967		
Total (Adjusted)	92	9739.053			
Total	93				

Group Detail

Group	Count	Sum of	Mean		
		Ranks	Rank	Z-Value	Median
18-30	24	1134.00	47.25	0.0527	19.34
30-45	48	2166.00	45.13	-0.6919	18.15
45-60	19	947.00	49.84	0.5146	19.16
>60	2	124.00	62.00	0.7945	25.61

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	93	19.55462		21.2722
A: Age				
18-30	24	19.03125	2.112431	-2.240948
30-45	48	18.69333	1.493714	-2.578865
45-60	19	21.75421	2.374167	0.4820121
>60	2	25.61	7.317676	4.337801

Facilities by Gender

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Gender	1	338.1222	338.1222	3.27	0.073731
S(A)	91	9400.931	103.3069		
Total (Adjusted)	92	9739.053			
Total	93				

Group Detail

Group	Count	Sum of	Mean		
		Ranks	Rank	Z-Value	Median
Female	48	2532.00	52.75	2.1218	20.35
Male	45	1839.00	40.87	-2.1218	16.8

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	93	19.55462		19.49308
A: Gender				
Female	48	21.40083	1.467047	1.90775
Male	45	17.58533	1.51516	-1.90775

Facilities by Income

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Income	3	162.2663	54.08877	0.49	0.688805
S(A)	86	9455.697	109.95		
Total (Adjusted)	89	9617.963			
Total	90				

Group Detail

Group	Count	Sum of Ranks	Mean Rank	Z-Value	Median
-10k	8	451.00	56.38	1.2335	21.11
10.1-20k	12	529.00	44.08	-0.2018	18.725
20.1-40k	39	1847.00	47.36	0.5903	19.6
40k+	31	1268.00	40.90	-1.2100	16.28

Means and Effects Section

Term	Count	Mean	Standard Error	Effect
All	90	19.38533		19.77536
A: Income				
-10k	8	22.77	3.707256	2.994644
10.1-20k	12	18.07667	3.026962	-1.698689
20.1-40k	39	19.96282	1.679056	0.1874648
40k+	31	18.29193	1.883288	-1.48342

Facilities by Medical Cover

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Medical_Cover	2	160.7506	80.37531	0.76	0.472859
S(A)	90	9578.302	106.4256		
Total (Adjusted)	92	9739.053			
Total	93				

Group Detail

Group	Count	Sum of Ranks	Mean Rank	Z-Value	Median
Comprehensive	75	3386.00	45.15	-1.3517	17.85
Limited	16	900.00	56.25	1.5065	23.705
None	2	85.00	42.50	-0.2384	16.29

Means and Effects Section

Term	Count	Mean	Standard Error	Effect
All	93	19.55462		19.21582
A: Medical_Cover				
Comprehensive	75	19.0556	1.191221	-0.160225
Limited	16	22.30187	2.579069	3.08605
None	2	16.29	7.29471	-2.925825

Facilities by Decision Makers

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Decision_Maker	1	63.70625	63.70625	0.59	0.443433
S(A)	90	9675.339	107.5038		
Total (Adjusted)	91	9739.045			
Total	92				

Group Detail

Group	Count	Sum of	Mean		
		Ranks	Rank	Z-Value	Median
No	45	2048.00	45.51	-0.3476	19.8
Yes	47	2230.00	47.45	0.3476	17.85

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	92	19.55554		19.53745
A: Decision_Maker				
No	45	18.70511	1.54563	-0.832338
Yes	47	20.36979	1.512387	0.832338

8.3.2. Location

Location by Age

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Age	3	567.4036	189.1345	1.57	0.202986
S(A)	89	10742.34	120.7004		
Total (Adjusted)	92	11309.74			
Total	93				

Group Detail

Group	Count	Sum of	Mean		
		Ranks	Rank	Z-Value	Median
18-30	24	1305.50	54.40	1.5585	17.66
30-45	48	2235.50	46.57	-0.1576	14.58
45-60	19	813.00	42.79	-0.7623	11.88
>60	2	17.00	8.50	-2.0393	4.405

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	93	16.73667		13.96027
A: Age				
18-30	24	19.75917	2.242584	5.798895
30-45	48	16.26271	1.585746	2.302437
45-60	19	15.41421	2.520447	1.453939
>60	2	4.405	7.768539	-9.555271

Location by Gender

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Gender	1	235.0718	235.0718	1.93	0.167977
S(A)	91	11074.67	121.6996		
Total (Adjusted)	92	11309.74			
Total	93				

Group Detail

Group	Count	Sum of	Mean		
		Ranks	Rank	Z-Value	Median
Female	48	2142.00	44.63	-0.8764	14.955
Male	45	2229.00	49.53	0.8764	14.87

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	93	16.73667		16.78798
A: Gender				
Female	48	15.19729	1.592297	-1.590688
Male	45	18.37867	1.644517	1.590688

Location by Income

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Income	3	851.5722	283.8574	2.53	0.062199*
		0.726305			
S(A)	86	9634.117	112.0246		
Total (Adjusted)	89	10485.69			
Total	90				

Group Detail

Group	Count	Sum of	Mean		
		Ranks	Rank	Z-Value	Median
-10k	8	316.50	39.56	-0.6735	14.38
10.1-20k	12	682.00	56.83	1.6143	22.675
20.1-40k	39	1747.00	44.79	-0.2239	15.07
40k+	31	1349.50	43.53	-0.5180	14.84

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	90	16.64833		17.14725
A: Income				
-10k	8	13.19125	3.742069	-3.955995
10.1-20k	12	24.03417	3.055386	6.886921
20.1-40k	39	16.51744	1.694823	-0.6298095
40k+	31	14.84613	1.900973	-2.301116

Location by Medical Cover

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Medical_Cover	2	267.8506	133.9253	1.09	0.340083
S(A)	90	11041.89	122.6877		
Total (Adjusted)	92	11309.74			
Total	93				

Group Detail

Group	Count	Sum of	Mean		
		Ranks	Rank	Z-Value	Median
Comprehensive	75	3699.00	49.32	1.6920	15.34
Limited	16	629.00	39.31	-1.2521	10.4
None	2	43.00	21.50	-1.3507	8.12

Means and Effects Section

Term	Count	Mean	Error	Standard
				Effect
All	93	16.73667		13.34945
A: Medical_Cover				
Comprehensive	75	17.44773	1.278998	4.09828
Limited	16	14.48063	2.769111	1.131172
None	2	8.12	7.83223	-5.229453

Location by Decision Makers

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Decision_Maker	1	121.9212	121.9212	1.04	0.310898
S(A)	90	10565.93	117.3992		
Total (Adjusted)	91	10687.85			
Total	92				

Group Detail

Group	Count	Sum of	Mean		
		Ranks	Rank	Z-Value	Median
No	45	2274.00	50.53	1.4177	16.58
Yes	47	2004.00	42.64	-1.4177	13.35

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	92	16.46707		16.4921
A: Decision_Maker				
No	45	17.64355	1.6152	1.151459
Yes	47	15.34064	1.58046	-1.151459

8.3.3. Price

Price by Age

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Age	3	236.2889	78.76297	2.40	0.073022
S(A)	89	2919.509	32.80347		
Total (Adjusted)	92	3155.798			
Total	93				

Group Detail

Group	Count	Sum of Ranks	Mean Rank	Z-Value	Median
18-30	24	1353.50	56.40	1.9799	11.555
30-45	48	2016.50	42.01	-1.8412	8.945
45-60	19	866.00	45.58	-0.2573	9.54
>60	2	135.00	67.50	1.0859	14.915

Means and Effects Section

Term	Count	Mean	Standard Error	Effect
All	93	10.43753		11.75016
A: Age				
18-30	24	12.715	1.169107	0.964841
30-45	48	9.229584	0.8266835	-2.520576
45-60	19	10.14105	1.313963	-1.609106
>60	2	14.915	4.049906	3.164841

Price by Gender

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Gender	1	105.9608	105.9608	3.16	0.078728
S(A)	91	3049.837	33.51469		
Total (Adjusted)	92	3155.798			
Total	93				

Group Detail

Group	Count	Sum of Ranks	Mean Rank	Z-Value	Median
Female	48	2463.00	51.31	1.5914	10.67
Male	45	1908.00	42.40	-1.5914	9.86

Means and Effects Section

Term	Count	Mean	Standard Error	Effect
All	93	10.43753		10.40308
A: Gender				
Female	48	11.47104	0.8355973	1.067965
Male	45	9.335111	0.8630012	-1.067965

Price by Income

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Income	3	177.4306	59.14352	1.75	0.162047
S(A)	86	2899.773	33.7183		
Total (Adjusted)	89	3077.204			
Total	90				

Group Detail

Group	Count	Sum of	Mean		
		Ranks	Rank	Z-Value	Median
-10k	8	471.00	58.88	1.5171	15.12
10.1-20k	12	647.00	53.92	1.1988	11.555
20.1-40k	39	1663.00	42.64	-0.9079	8.98
40k+	31	1314.00	42.39	-0.8194	10.41

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	90	10.55367		11.50243
A: Income				
-10k	8	13.4125	2.052994	1.910072
10.1-20k	12	13.0075	1.676263	1.505072
20.1-40k	39	9.894872	0.9298235	-1.607556
40k+	31	9.694839	1.042922	-1.807589

Price by Medical Cover

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Medical_Cover	2	64.5109	32.25545	0.94	0.394781
S(A)	90	3091.287	34.34763		
Total (Adjusted)	92	3155.798			
Total	93				

Group Detail

Group	Count	Sum of	Mean		
		Ranks	Rank	Z-Value	Median
Comprehensive	75	3419.00	45.59	-1.0308	10.4
Limited	16	829.00	51.81	0.7838	10.245
None	2	123.00	61.50	0.7680	13.565

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	93	10.43753		11.83129
A: Medical_Cover				
Comprehensive	75	10.04573	0.6767337	-1.785553
Limited	16	11.88313	1.465171	5.183889E-02
None	2	13.565	4.14413	1.733714

Price by Decision Makers

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Decision_Maker	1	38.14132	38.14132	1.13	0.291584
S(A)	90	3050.058	33.88953		
Total (Adjusted)	91	3088.199			
Total	92				

Group Detail

Group	Count	Sum of	Mean	Z-Value	Median
		Ranks	Rank		
No	45	2209.50	49.10	0.9139	10.63
Yes	47	2068.50	44.01	-0.9139	10.02

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	92	10.52641		10.54041
A: Decision_Maker				
No	45	11.18444	0.8678138	0.6440307
Yes	47	9.896383	0.8678138	-0.6440307

8.3.4. Access

Access by Age

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Age	3	39.33665	13.11222	1.15	0.333160
S(A)	89	1014.067	11.39401		
Total (Adjusted)	92	1053.403			
Total	95				

Group Detail

Group	Count	Sum of	Mean	Z-Value	Median
		Ranks	Rank		
18-30	24	1162.50	48.44	0.3029	6.985
30-45	48	2137.50	44.53	-0.9110	6.995
45-60	19	959.00	50.47	0.6289	7
>60	2	112.00	56.00	0.4767	11.22

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	93	7.297635		8.302969
A: Age				
18-30	24	7.420833	0.6890212	-0.8821354
30-45	48	6.941041	0.4872116	-1.361927
45-60	19	7.63	0.774393	-0.6729687
>60	2	11.22	2.38684	2.917031

Access by Gender

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Gender	1	26.80981	26.80981	2.38	0.126644
S(A)	91	1026.594	11.28125		
Total (Adjusted)	92	1053.403			
Total	93				

Group Detail

Group	Count	Sum of	Mean		
		Ranks	Rank	Z-Value	Median
Female	48	2445.00	50.94	1.4530	7.565
Male	45	1926.00	42.80	-1.4530	6.34

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	93	7.297635		7.280305
A: Gender				
Female	48	7.8175	0.4847948	0.5371944
Male	45	6.743111	0.5006939	-0.5371944

Access by Income

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Income	3	23.63837	7.879456	0.68	0.569156
S(A)	86	1002.588	11.658		
Total (Adjusted)	89	1026.226			
Total	90				

Group Detail

Group	Count	Sum of	Mean		
		Ranks	Rank	Z-Value	Median
-10k	8	428.00	53.50	0.9074	8.11
10.1-20k	12	503.50	41.96	-0.5045	7.035
20.1-40k	39	1799.00	46.13	0.1995	7.02
40k+	31	1364.50	44.02	-0.3906	6.7

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	90	7.334		7.519919
A: Income				
-10k	8	8.8175	1.207166	1.297581
10.1-20k	12	6.783333	0.985647	-0.7365855
20.1-40k	39	7.409487	0.5467386	-0.1104317
40k+	31	7.069355	0.613241	-0.450564

Access by Medical Cover

Analysis of Variance Table

Source		Sum of	Mean		Prob
	Power				
Term	DF	Squares	Square	F-Ratio	Level
A: Medical_Cover	2	5.611736	2.805868	0.24	0.786339
S(A)	90	1047.792	11.64213		
Total (Adjusted)	92	1053.403			
Total	93				

Group Detail

Group	Count	Sum of Ranks	Mean Rank	Z-Value	Median
Comprehensive	75	3614.00	48.19	0.8655	7.02
Limited	16	692.00	43.25	-0.6108	6.45
None	2	65.00	32.50	-0.7680	5.65

Means and Effects Section

Term	Count	Mean	Standard Error	Effect
All	93	7.297635		6.757625
A: Medical_Cover				
Comprehensive	75	7.346	0.3939903	0.588375
Limited	16	7.276875	0.8530141	0.51925
None	2	5.65	2.412688	-1.107625

Access by Decision Makers

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Decision_Maker	1	0.5111107	0.5111107	0.04	0.834300
S(A)	90	1045.093	11.61215		
Total (Adjusted)	91	1045.604			
Total	92				

Group Detail

Group	Count	Sum of Ranks	Mean Rank	Z-Value	Median
No	45	2084.50	46.32	-0.0625	6.95
Yes	47	2193.50	46.67	0.0625	7.01

Means and Effects Section

Term	Count	Mean	Standard Error	Effect
All	92	7.327826		7.329447
A: Decision_Maker				
No	45	7.404	0.5079839	7.455319E-02
Yes	47	7.254894	0.4970583	-7.455319E-02

8.3.5. Competence

Competence by Age

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Age	3	2405.101	801.7004	4.58	0.004975*
S(A)	89	15577.33	175.0262		
Total (Adjusted)	92	17982.43			
Total	93				

Group Detail

Group	Count	Sum of Ranks	Mean Rank	Z-Value	Median
18-30	24	744.50	31.02	-3.3671	16.4
30-45	48	2594.50	54.05	2.6023	32.27
45-60	19	943.00	49.63	0.4764	29.01
>60	2	89.00	44.50	-0.1324	27.03

Means and Effects Section

Term	Count	Mean	Standard Error	Effect
All	93	27.35882		26.40493
A: Age				
18-30	24	18.94083	2.700511	-7.464093
30-45	48	31.11729	1.909549	4.712366
45-60	19	28.53158	3.035112	2.126653
>60	2	27.03	9.354843	0.625074

Competence by Gender

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Gender	1	601.6741	601.6741	3.15	0.079263*
S(A)	91	17380.76	190.9973		
Total (Adjusted)	92	17982.43			
Total	93				

Group Detail

Group	Count	Sum of Ranks	Mean Rank	Z-Value	Median
Female	48	2052.50	42.76	-1.5645	24.34
Male	45	2318.50	51.52	1.5645	28.64

Means and Effects Section

Term	Count	Mean	Standard Error	Effect
All	93	27.35882		27.44091
A: Gender				
Female	48	24.89604	1.994771	-2.544868
Male	45	29.98578	2.06019	2.544868

Competence by Income

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Income	3	3448.287	1149.429	7.00	0.000288*
S(A)	86	14123.46	164.2262		
Total (Adjusted)	89	17571.74			
Total	90				

Group Detail

Group	Count	Sum of	Mean		
		Ranks	Rank	Z-Value	Median
-10k	8	235.00	29.38	-1.8290	16.435
10.1-20k	12	302.00	25.17	-2.8962	11.885
20.1-40k	39	1767.50	45.32	-0.0570	27.6
40k+	31	1790.50	57.76	3.2266	35.82

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	90	27.44922		24.2357
A: Income				
-10k	8	19.16375	4.530815	-5.071953
10.1-20k	12	16.385	3.699395	-7.850703
20.1-40k	39	27.16051	2.052055	2.92481
40k+	31	34.23355	2.301656	9.997846

Competence by Medical Cover

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Medical_Cover	2	518.9106	259.4553	1.34	0.267764
S(A)	90	17463.52	194.0391		
Total (Adjusted)	92	17982.43			
Total	93				

Group Detail

Group	Count	Sum of	Mean		
		Ranks	Rank	Z-Value	Median
Comprehensive	75	3605.00	48.07	0.7779	28.06
Limited	16	641.00	40.06	-1.1299	21.84
None	2	125.00	62.50	0.8210	38.505

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	93	27.35882		29.94213
A: Medical_Cover				
Comprehensive	75	27.902	1.608474	-2.040125
Limited	16	23.41937	3.482448	-6.52275
None	2	38.505	9.849851	8.562875

Competence by Decision Makers

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Decision_Maker	1	705.6298	705.6298	3.75	0.055910*
S(A)	90	16930.13	188.1125		
Total (Adjusted)	91	17635.76			
Total	92				

Group Detail

Group	Count	Sum of	Mean	Z-Value	Median
		Ranks	Rank		
No	45	1803.00	40.07	-2.2612	22.05
Yes	47	2475.00	52.66	2.2612	32.48

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	92	27.56011		27.49989
A: Decision_Maker				
No	45	24.72978	2.044573	-2.770111
Yes	47	30.27	2.000598	2.770111

8.3.6. Staff attitude

Staff Attitude by Age

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Age	3	50.68842	16.89614	0.92	0.436912
S(A)	89	1642.854	18.45904		
Total (Adjusted)	92	1693.543			
Total	93				

Group Detail

Group	Count	Sum of	Mean	Z-Value	Median
		Ranks	Rank		
18-30	24	1198.00	49.92	0.6146	6.345
30-45	48	2393.50	49.86	1.0571	7.06
45-60	19	721.50	37.97	-1.6342	5.91
>60	2	58.00	29.00	-0.9534	4.94

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	93	7.35871		6.639616
A: Age				
18-30	24	7.71125	0.8769986	1.071634
30-45	48	7.764583	0.6201317	1.124967
45-60	19	6.142632	0.9856613	-0.4969847
>60	2	4.94	3.038012	-1.699616

Staff Attitude by Gender

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Gender	1	14.37468	14.37468	0.78	0.379768
S(A)	91	1679.168	18.45239		
Total (Adjusted)	92	1693.543			
Total	93				

Group Detail

Group	Count	Sum of	Mean	Z-Value	Median
		Ranks	Rank		
Female	48	2307.50	48.07	0.3959	6.78
Male	45	2063.50	45.86	-0.3959	6.1

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	93	7.35871		7.346021
A: Gender				
Female	48	7.739375	0.6200201	0.3933542
Male	45	6.952667	0.640354	-0.3933542

Staff Attitude by Income

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Income	3	42.34569	14.11523	0.74	0.529684
S(A)	86	1635.137	19.01322		
Total (Adjusted)	89	1677.483			
Total	90				

Group Detail

Group	Count	Sum of	Mean	Z-Value	Median
		Ranks	Rank		
-10k	8	359.00	44.88	-0.0709	6.515
10.1-20k	12	538.00	44.83	-0.0950	6.345
20.1-40k	39	1875.50	48.09	0.8224	6.84
40k+	31	1322.50	42.66	-0.7472	6.17

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	90	7.408111		7.310771
A: Income				
-10k	8	7.4725	1.54164	0.1617292
10.1-20k	12	7.005	1.258744	-0.3057708
20.1-40k	39	8.144615	0.6982253	0.8338446
40k+	31	6.620968	0.7831537	-0.6898031

Staff Attitude by Medical Cover

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Medical_Cover	2	7.497873	3.748937	0.20	0.818999
S(A)	90	1686.045	18.73383		
Total (Adjusted)	92	1693.543			
Total	93				

Group Detail

Group	Count	Sum of	Mean		
		Ranks	Rank	Z-Value	Median
Comprehensive	75	3498.00	46.64	-0.2626	6.35
Limited	16	750.00	46.88	-0.0204	6.45
None	2	123.00	61.50	0.7680	8.585

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	93	7.35871		7.624325
A: Medical_Cover				
Comprehensive	75	7.4336	0.4997844	-0.190725
Limited	16	6.854375	1.082065	-0.76995
None	2	8.585	3.060542	0.960675

Staff Attitude by Decision Makers

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Decision_Maker	1	40.72477	40.72477	2.22	0.139824
S(A)	90	1651.804	18.35338		
Total (Adjusted)	91	1692.529			
Total	92				

Group Detail

Group	Count	Sum of	Mean		
		Ranks	Rank	Z-Value	Median
No	45	2239.00	49.76	1.1443	6.35
Yes	47	2039.00	43.38	-1.1443	6.17

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	92	7.347826		7.362293
A: Decision_Maker				
No	45	8.027778	0.6386337	0.6654846
Yes	47	6.696808	0.624898	-0.6654846

8.3.7. Brand

Brand by Age

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Age	3	332.4146	110.8049	4.20	0.007949*
S(A)	89	2349.831	26.40259		
Total (Adjusted)	92	2682.245			
Total	93				

Group Detail

Group	Count	Sum of Ranks	Mean Rank	Z-Value	Median
18-30	24	1478.50	61.60	3.0774	13.94
30-45	48	1965.00	40.94	-2.2371	9.545
45-60	19	807.00	42.47	-0.8195	8.97
>60	2	120.50	60.25	0.7018	11.875

Means and Effects Section

Term	Count	Mean	Standard Error	Effect
All	93	11.25452		11.66722
A: Age				
18-30	24	14.42042	1.04886	2.753196
30-45	48	9.990833	0.7416562	-1.676387
45-60	19	10.38263	1.178817	-1.284589
>60	2	11.875	3.633359	0.2077796

Brand by Gender

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Gender	1	4.895606	4.895606	0.17	0.684293
S(A)	91	2677.35	29.42142		
Total (Adjusted)	92	2682.245			
Total	93				

Group Detail

Group	Count	Sum of Ranks	Mean Rank	Z-Value	Median
Female	48	2362.50	49.22	0.8187	10.77
Male	45	2008.50	44.63	-0.8187	9.68

Means and Effects Section

Term	Count	Mean	Standard Error	Effect
All	93	11.25452		11.24711
A: Gender				
Female	48	11.47667	0.7829089	0.2295556
Male	45	11.01756	0.8085849	-0.2295556

Brand by Income

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Income	3	395.7458	131.9153	5.00	0.003033*
S(A)	86	2268.455	26.37738		
Total (Adjusted)	89	2664.2			
Total	90				

Group Detail

Group	Count	Sum of	Mean	Z-Value	Median
		Ranks	Rank		
-10k	8	534.50	66.81	2.4174	13.415
10.1-20k	12	788.00	65.67	2.8724	14.64
20.1-40k	39	1671.00	42.85	-0.8427	9.73
40k+	31	1101.50	35.53	-2.6237	8.8

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	90	11.21956		12.50654
A: Income				
-10k	8	15.17	1.815812	2.663459
10.1-20k	12	14.70583	1.482604	2.199292
20.1-40k	39	10.90872	0.8224007	-1.597823
40k+	31	9.241612	0.9224333	-3.264928

Brand by Medical Cover

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level
A: Medical_Cover	2	127.8413	63.92067	2.25	0.111071
S(A)	90	2554.404	28.38227		
Total (Adjusted)	92	2682.245			
Total	93				

Group Detail

Group	Count	Sum of	Mean	Z-Value	Median
		Ranks	Rank		
Comprehensive	75	3380.00	45.07	-1.4100	9.69
Limited	16	912.00	57.00	1.6287	11.27
None	2	79.00	39.50	-0.3973	9.285

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	93	11.25452		11.27857
A: Medical_Cover				
Comprehensive	75	10.7676	0.6151668	-0.510975
Limited	16	13.78312	1.331875	2.50455
None	2	9.285	3.767112	-1.993575

Brand by Decision Makers

Analysis of Variance Table

Source		Sum of	Mean		Prob
Term	DF	Squares	Square	F-Ratio	Level (
A: Decision_Maker	1	104.4346	104.4346	3.67	0.058691*
S(A)	90	2563.478	28.48309		
Total (Adjusted)	91	2667.912			
Total	92				

Group Detail

Group	Count	Sum of	Mean		
		Ranks	Rank	Z-Value	Median
No	45	2305.50	51.23	1.6637	10.81
Yes	47	1972.50	41.97	-1.6637	9.68

Means and Effects Section

Term	Count	Mean	Standard	Effect
			Error	
All	92	11.21359		11.23675
A: Decision_Maker				
No	45	12.30244	0.7955862	1.06569
Yes	47	10.17106	0.7784749	-1.06569