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Brand Equity in the Mauritian Internet Service Provider Industry

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Brand Equity in the Mauritian Internet Service Provider Industry

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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 in Business Administration.

Mauritius, August 2005

ABSTRACT

Brands have been considered as an asset and a source of sustainable competitive advantage by marketing authors. A company that can leverage on a strong brand can maintain and gain market share and resist pressures on price. Competitive advantages resulting from building a strong brand have more often been discussed for products branding than for services branding.

The aim of this research was to determine the existence of brand equity in the service sector through a focus on the Internet access industry in Mauritius. Using the conjoint analysis technique, this research investigated the relative importance of the brand as compared to other service attributes on customer choice. The research also aimed at identifying the various antecedents of brand equity in the Internet Service Provider industry in Mauritius – brand awareness, brand loyalty and perceived quality.

The findings substantiated the claim that the brand is a major determinant of customer choice. The brand came out as the second most important attribute considered by respondents. Brand equity was found to exist in the Mauritian Internet access industry and a price premium can be applied by market leader brands.

The quality of service is a major concern for customers in the Internet access market. Service quality is the first determinant of customer choice. Furthermore perceived quality was found to be a major source of brand equity.

DECLARATION

I declare that this research is my own, unaided work. It is submitted in partial fulfilment of the requirements for the degree of Master in Business Administration at the University of Witwatersrand, Johannesburg, South Africa. It has not been submitted before for any degree or examination at this or another university.

Sandra Jean-Louis

August 2005

DEDICATION

In memory of my father

Gabriel Jean-Louis

(1939- 2004)

ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to the following persons:

- My research supervisor, Geoff Bick, for his support and encouragement during the whole research process.
- Antony Stacey from Wits Business School for his expert advice and the time taken to guide me on the statistical part of this research.
- Raj Gunness from DCDM Business School whose advice on the statistical part was very useful.
- All the respondents that took their time to answer the questionnaires.
- My family for their patience and support.
- My fellow MBA classmates, most particularly the members of my Syndicate, who were helpful and supportive during these three years.

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1 INTRODUCTION

1.1 Background information

Brands are considered to be one of the most valuable, long-term strategic assets a company has (Aaker, 1992; Wood, 2000 and Vedpuriswar, 2001). A brand is not only a source of identification but a source of sustainable competitive advantage (Vedpuriswar, 2001). Doyle (1998:165) argues that "brands are at the heart of marketing and business strategy". As price competition increases and the consumer choice set is ever increasing, a company leveraging on a strong brand can maintain and gain market share. It can even use its brand to command a price premium. "As Tom Peters puts it, 'in an increasingly crowded market place, fools will compete on price. Winners will find a way to create lasting value in the customers' mind'" (Aaker,1992: 56).

While there is a lot of literature and research on product branding, there is less research on services branding. Academic researchers and scholars have different viewpoints on services branding. Some argue that there are no significant differences between branding a product or a service. Levy (1996) argues that the same principles that are used for fast moving consumer goods (FMCG) branding can also be used for creating successful service brands. Others put forward the view that there are significant differences between a service and a physical good (Blankson & Kalafatis, 1999). The unique characteristics of services (intangibility, inseparability, variability, perishability, ownership) require different branding strategies. Keller (2003:13) argues that "marketers can benefit from branding whenever consumers are in a choice situation".

In our modern world characterised by globalisation and continuously evolving technologies, the services sector is continuously growing. This research will contribute to literature on services marketing through the study of the Mauritian Internet Access industry. The Internet in Mauritius is a relatively young industry and has been available to Mauritians since 1996. The estimated number of

Internet users today amounts to 250 000 from a population of 1.2 millions (Telecom Plus, 2004). The type of Internet access technology available to Mauritians comprises dial up (traditional connection via the telephone line), ADSL (Asymmetric Digital Subscriber Line) among others. Ninety-five percent of Internet subscribers connect via dial up (Telecom Plus, 2004).

1.2 Stating the research problem

The research problem is as follows:

"Does brand equity exist in the Mauritian Internet industry and what is its degree of influence on the customer's purchase behaviour?"

Defining the sub-problems

Sub-problems have been defined as follows:

1) What is the relative importance of the brand as compared to other service attributes?
2) What are the sources of brand equity?
3) Which source can be considered as most important in generating brand equity?
4) What is the role of marketing communications in building brand equity?

1.3 Assumptions

- The target population of the research comprises decision makers in the residential market. The assumption is that those respondents are competent to answer the questions and that the sample taken will be representative of the whole population.
- The research tools used during that research are the most appropriate ones.

1.4 Delimitations

- This study does not attempt to investigate the influences of other family members or of peer influences in the decision-making process and on the customer purchase behaviour.
- The degree of brand influences is investigated at one point in time: change in customer purchase behaviour over time will not be investigated.
- The importance of branding on the business market will not be investigated.
- This study will be focussed on the Dial up market. The importance of brand equity among residential users using other types of Internet access technology will not be investigated.

2 LITERATURE REVIEW

2.1 The origin and history of branding

Motameni & Shahrokhi (1998) go as far back as 5000 BC when identity marks were used on pottery to identify the owners (not the manufacturers) of the goods, and to the twelfth century, when craft guilds required that members mark their goods so that the quantity and quality of products could be controlled. Jones, Shears, Hillier & Clarke-Hill (2002) trace the origin of branding to pre-modern society, when a mark was burned into anything with a hot iron and was used to distinguish ownership and identity of slaves, cattle or commodities. Business historians agree that branding by businesses is over a century old (Rooney, 1995). Palmer (2001) suggests that branding became significant when economies of scale prevented producers from providing customers with personal reassurances about product quality. According to Kapferer (2003) the importance of branding was recognised as from the 1980s in the wake of a series of acquisitions and mergers by global corporations (Nestlé, Philip Morris, Seagram, Lever and Procter). Companies owning high value brands were acquired at a premium price even though they were losing money. The concept of brand equity began to emerge and its measurement by audit firms, bankers and through surveys started.

2.2 Definitions of a brand

As put forward by Wood (2000), there is a proliferation of brand definitions due to different philosophies. Ambler & Styles (1996) identify two broad philosophical approaches to defining a brand. The first is the product-plus approach. In this approach the brand is an identifier and one of the last elements in the new product development process. The second approach is the holistic one. In the holistic approach to branding, the focus is the brand itself and the marketing mix is used to tailor the brand to the needs and wants of a specific target group.

Other branding definitions originate from the stakeholder's perspective, the purpose of the brand, and the characteristics of the brand.

Kotler (2001:404) proposes the following company-oriented definition of the brand adapted from The American Marketing Association (1960) "A name, term, sign, symbol, or design, or a combination of them, intended to identify the goods or services of one seller or group of sellers and to differentiate them from those of competitors."

Dibb, Simkin, Pride & Ferrell (1997:264) use a variation of the definition which is: "A brand is a name, term, design, symbol or any other feature that identifies one seller's good or service as distinct from those of other sellers."

Ambler & Styles (1997:222) take a consumer-oriented approach in defining a brand as: "the promise of the bundles of attributes that someone buys and provide satisfaction. The attributes that make up a brand may be real or illusory, rational or emotional, tangible or invisible."

Other brand definitions and descriptions focus on the methods used to achieve differentiation and/or emphasise the benefits that the consumer obtains when he buys brands:

- Brands as an image in the consumers' minds (Keller, 1993),
- Brand personality (Alt & Griggs, 1988; Goodyear, 1993 and Aaker, 1996),
- Brands as value systems (Sheth, Newman & Gross, 1991),
- Brands as added value (Levitt, 1962; De Chernatony & McDonald, 1992; Murphy, 1992 and Doyle, 1998).

Wood (2000: 666) proposes an integrated definition that "A brand is a mechanism for achieving competitive advantage for firms, through differentiation (purpose). The attributes that differentiate a brand provide the customer with satisfaction and benefits for which they are willing to pay (mechanism)."

2.3 The advantages of branding

The benefits of having a strong brand cannot be denied today. Customers are faced with a proliferation of products and services. Their choice amidst such abundance is not easy. Branding simplifies their decision-making process by providing them with reassurance. The benefits of branding are as follows:

- Identification and differentiation

Brands are a means for identification and differentiation of a business's products and services from competitive offers (Dibb *et al*, 1997).

- Customer retention and customer loyalty

Rooney (1995) and Jackson (1999) view the brand as not only a means of attracting customers but also as a tool for customer retention through the promotion of value, image, prestige or lifestyle.

- Risk reduction for the consumer

Brands are also a means of reducing the consumers' risk when they face unknown products.

- Market awareness and market acceptance

Brand is a means of creating market awareness and increasing market acceptance of new products. A strong brand therefore provides the firm with a platform for product line extensions (Aaker, 1991; Keller, 2003)

- Resilience against competitive pressure

Brand perceptions affect consumers' buying decisions (Doyle, 1998). Strong brands help the business in resisting competitive pressures.

- Price Premium

Brand can also help in pricing as a loyal customer is willing to pay more (Lassar, Mittal & Sharma, 1995; Doyle, 1998 and Jackson, 1999). As Aaker (1991) suggests, a strong brand will provide the firm with a higher profit margin. Keller (2003) states that a brand with positive customer-based brand equity can not only command a price premium but also a fairly inelastic response to price increases and a fairly elastic response to price decreases or discounts for the brand over time.

- Access to distribution channels

Aaker (1991) is of the opinion that strong brands provide better access to distribution channels. From the perspective of trade, brand equity contributes to the overall image of the retail outlet. It builds store traffic, ensures consistent volume, and reduces risk in allocating shelf space. Keller (2003) also argues that strong brands result in greater trade cooperation and support.

- Confidence to staff

A strong brand also increases the staff confidence and alignment with the brand promise and values.

- Increased marketing communications effectiveness

Keller (2003) suggests that marketing communications are more effective for strong brands. A strong brand has already high brand awareness and strong positive brand associations that render the customer more prone to become aware of an ad, learn about the brand, develop favourable opinions and retain and act on these beliefs over time.

- Licensing opportunities

A firm can seize the opportunity of licensing the name and logo of its strong brand to other companies (Keller, 2003).

2.4 Disadvantages of branding

- Sell off complication

Sell off complication occurs when the brand strategy comprises brands and sub-brands. Selling one of those without impacting on the others may be difficult.

- Competitive targeting

Competitive targeting may occur since the brand promise and values are known and this may provoke retaliation from competitors.

- Continuous delivery expectations

A strong brand needs to deliver consistently to meet customers' expectations.

2.5 Brand equity

2.5.1 The meanings of brand equity

Brand equity is a terminology that has been developed in marketing literature in order to define the relationship between the brand and the customer (Wood, 2000). Brand equity has been assigned different definitions and meanings in marketing and accounting literature. While accountants define brand equity in terms of company orientations (the financial value of the brand to its owner), marketers adopt a more consumer-oriented definition (the focus is on the relationship between the customer and the brand) (Wood, 2000). Keller (1993, 2003) approaches brand equity from the perspective of the customer (customer-based brand equity) - whether the customer is an individual or an organisation. According to Keller (2003:59), "the power of the brand lies in what the customers have learned, felt, seen, and heard about the brand as a result of their experiences over time. In other words, the power of the brand lies in what resides in the minds of customers".

2.5.2 The financial approach

2.5.2.1 Brand valuation approaches

According to Abratt & Bick (2003) brand valuation approaches can be classified as follows:

- Cost-based approaches

In cost-based approaches the costs associated with the creation or the replacement of the brand is taken into account.

- Market-based approaches

In market-based approaches the amount for which the brand can be sold is taken into account.

- Economic use approaches

Economic use approaches take into account the valuation of future net earnings that are directly related to the brand.

- Formulary approaches

Formulary approaches take into account a series of criteria to determine the value of a brand.

- Special situation approaches

This approach recognises that brand valuation may be specific to certain circumstances (e.g. cases where a buyer may be willing for strategic reasons specific for that buyer to pay a price premium, in liquidation situations).

2.5.2.2 Market-value-based technique for Brand Equity

Simon & Sullivan (1993) have presented a market-value-based technique for estimating a firm's brand equity. The movements of stock prices are used to evaluate the value of the brand equities.

2.5.2.3 Global Brand Equity Valuation Model

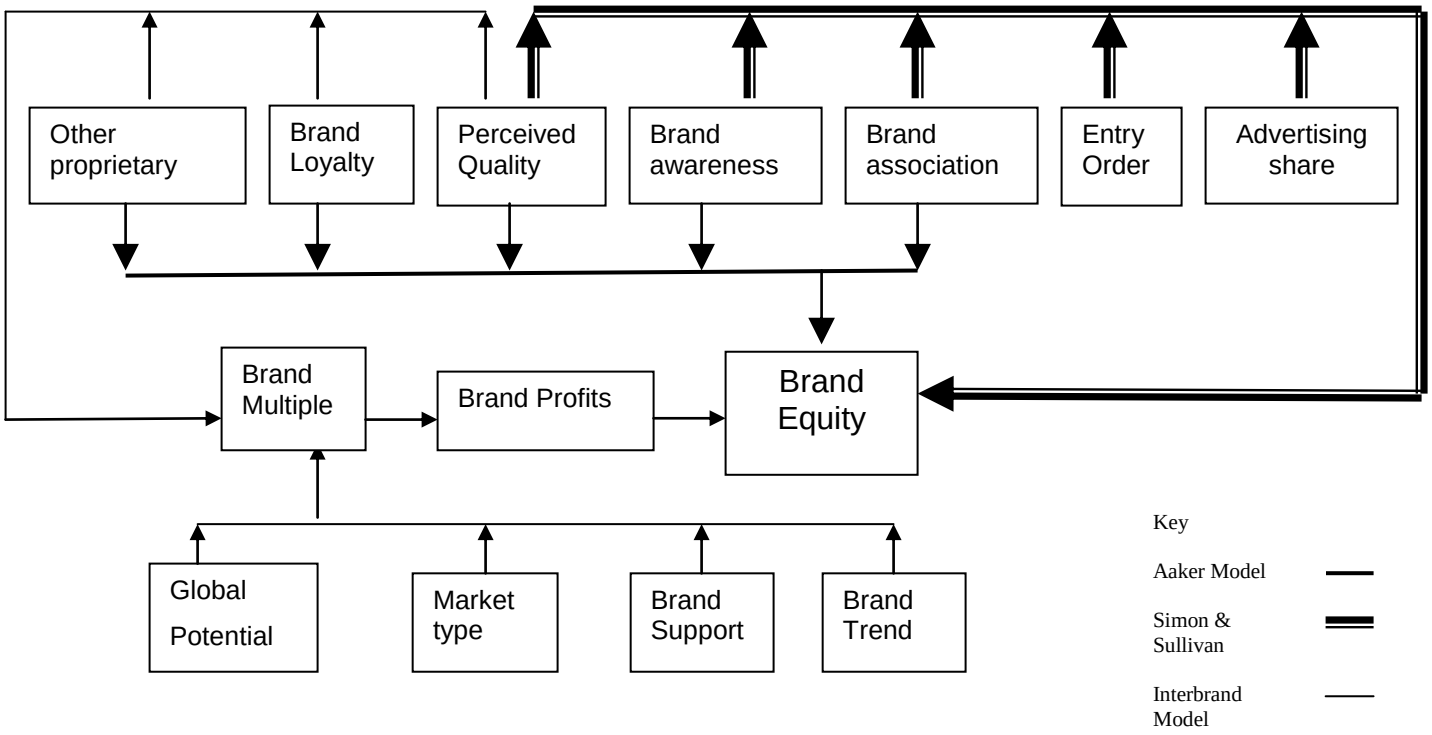
Motameni & Shahrokhi (1998) describe The *Financial World's* (now Business Week) and the Interbrand Group's approach. Their mode of valuation is made up of two components: the brand earnings and the brand strength multiple. The brand earnings are estimated by a two year weighted average and the brand strength takes into consideration seven factors - stability, current market prospect, brand extension possibilities, market leadership, international potential, brand support and legal protection and adaptation to time. A correlation is subsequently made between the brand strength and a multiple like the price earnings ratio. Then the brand multiple is applied to brand profit and this provides the value of the brand equity.

Interbrand's method was later modified. The specific risk linked to a brand is now evaluated through the assessment of the brand strength. Interbrand compares the brand against a theoretical ideal and scores it against the seven factors of brand strength (http://www.interbrand.com/best_brands_2005_FAQ.asp). The economic value of future brand earnings is inversely correlated with the brand's estimated risk. This risk is directly related to brand strength. The brand strength is transformed into brand risk via an S-curve (www.interbrand.nl/e/press/pdf/Interbrand_Brand _Valuation.pdf).

Motameni & Shahrokhi (1998) criticise the original approach as adopting a restricted view of the brand equity concept. They advocate a combined approach, which is based on the different components of Aaker (1996) model and which they argue, provides a more comprehensive and integrative conceptualisation of brand equity from a global perspective. The multiple advantages of a global brand (status and prestige combined with maximum market exposure and reduction of advertising costs) result in greater value for the global brand than one that will be merely a regional or local one. The value measured by expected profits is totally linked to the intentions of the future purchaser and the company's global strategic plans for the brand. Motameni & Shahrokhi (1998) do however emphasise the need for a middle-of-the road

approach to be adopted in evaluating brand equity for market differences that may exist. This is why, while standardisation may be desirable to a certain extent, local differences should not be overlooked.

Figure 1: Interrelationship among leading conceptual models of Brand Equity

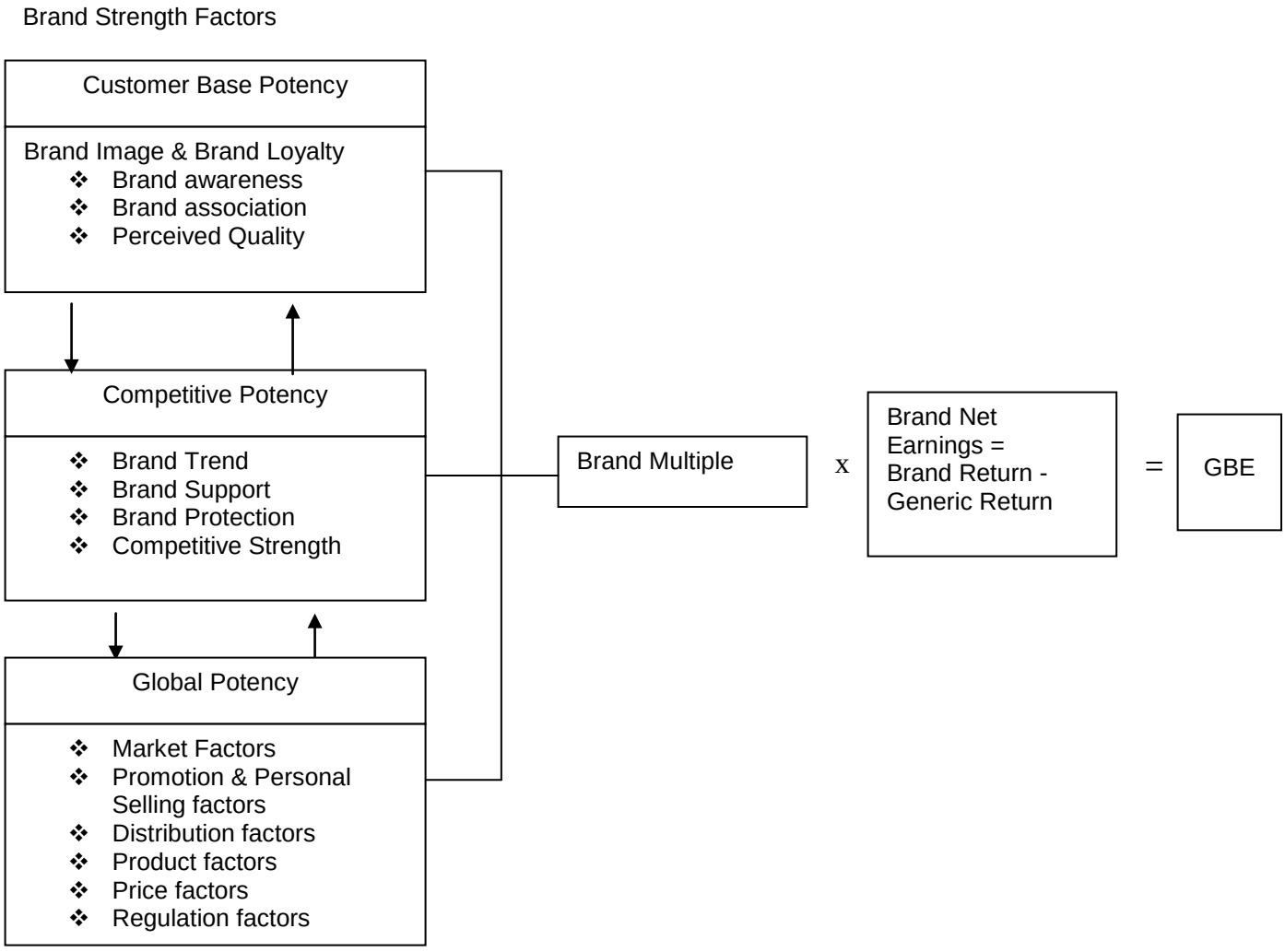


Source: Motameni & Shahrokhi (1998:277)

Motameni & Shahrokhi (1998) argue that marketers, unlike financial researchers, are more concerned with the sources, nature and process of brand equity valuation than with the actual valuation figure. Their model attempts to remedy this situation. "The Global brand equity model is the product of brand's net earnings and brand's multiple… The brand's net earnings is the differential earnings of a branded and an unbranded (generic) product." (Motameni & Shahrokhi,1998: 281). The multiple is derived from the brand strength (whose determinants are the brand's positioning, operating market, competition and past

performance). Brand – related earnings will be determined and adjusted by an amount equal to what would have been earned by a generic version of the product.

Figure 2: Global Brand Equity Valuation Model



Source: Motameni & Shahrokhi (1998:282)

2.5.3 The consumer approach

Aaker (1991) defines brand equity as a set of brand assets and liabilities linked to a brand, its name and its symbol that add to or subtract from the value provided by a product or service to a firm and/or to that firm's customers. Brand equity results from brand knowledge, which in turn depends on the marketing of the

brand. Aaker (1992) argues that a strong brand has got four dimensions: awareness (the effect of brand recognition on choice and market share), associations, perceived quality and brand loyalty (the extent to which people will purchase the product regularly).

Keller (1993) conceptualises brand equity as the differential effect of brand knowledge on the consumer response to the different elements of the marketing mix. Brand equity exists when customers are aware of, know the brand and recall positive, strong and unique associations. It is the knowledge that consumers associate with the brand that determines its value to its owner.

Lassar, Mittal & Sharma (1995) developed a scale to measure customer-based brand equity. They define brand equity as "the enhancement in the perceived utility and desirability a brand name confers on a product" (Lassar *et al*, 1995:13).

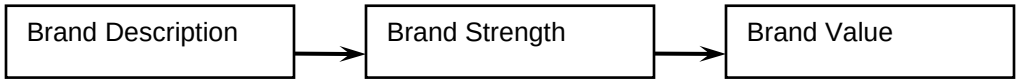
2.5.4 The reconciliation of the financial and consumer approach

Wood (2000) aims at the reconciliation of the marketing and the financial approaches. She views brand equity as having three components:

- Brand description – the associations that the consumer has about the brand (brand image).
- Brand strength – the strength of the attachment of the consumer to the brand (brand loyalty).
- Brand value – the value of the brand as an asset to a company, included on a balance sheet.

Wood (2000) asserts that brands are to be managed as long-term assets. For this management to be operational within the organisation, the relationship between brand value and brand loyalty needs to be recognised within the company's accounting system. This relationship can be viewed in the causal chain of Figure 3.

Figure 3: The Brand Equity Chain

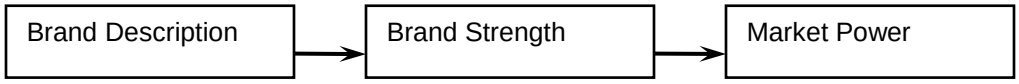


Source: Wood (2000:663)

Marketers tailor the marketing mix (product, price, promotion and place) to the needs and wants of their market. The degree of success of the marketing mix strategies determines the degree of brand strength (brand loyalty). This in turn impacts on the brand value as it is a source of guaranteed future cash flows. The work of managers can be assessed and reviewed by the measurement of brand strength and brand value and brand strategies modified accordingly.

According to Farquhar (1989) high brand equity yields market power as it enables a firm to aim at successful extensions, to be better able to meet competitors' promotional pressures, and creates barriers to entry. Wood (2000) summarises this relationship in Figure 4.

Figure 4: The relationship between brand equity and market power

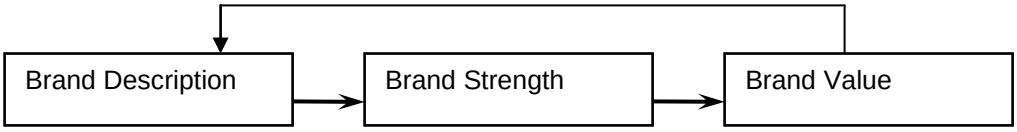


Source: Wood (2000:664)

Wood (2000) argues that brand value measurements can be used to determine market power. The measurement of brand strength and brand value provides information to the marketer that may determine how brand description should be managed. The measurement of brand value becomes more than an accounting exercise but helps in brand management. Brand value seeks to represent the

net present value of the future earnings stream of a brand. The job of managers of brands, therefore, is to maximise the long-term value of that earnings stream.

Figure 5: The management of brand equity



Source: Wood (2000:667)

2.5.5 Sources of brand equity

Most consumer-oriented approaches to brand equity encompass several components that are deemed to influence brand response and purchase behaviour. The management of brand equity involves investment in those components (defined as assets by Aaker, 1996).

2.5.5.1 Brand awareness

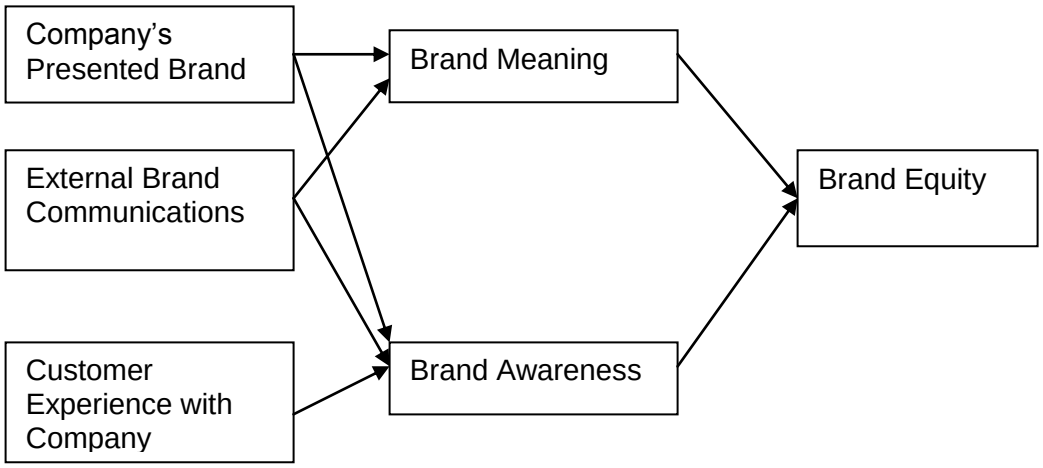
Brand awareness is one of the most commonly cited components of brand equity (Keller, 1993, 2003; Aaker, 1996). Aaker (1996:10) defines brand name awareness as "the strength of a brand's presence in the consumer's mind". Awareness can be measured by the ways in which the consumers remember a brand (brand recall, brand recognition, top of mind awareness). Brand recognition results from the familiarity obtained from past exposure to the brand (Aaker, 1996). It provides the brand with an edge over competing brands during the purchase decision and brand choice. A brand is said to have recall if it comes to the consumers' mind when its product category is mentioned (Aaker, 1996).

Brand awareness is one of the two dimensions of brand knowledge according to Keller (1993). Like Aaker (1996), Keller (1993) links brand awareness to brand recall and recognition performance by consumers. Brand name awareness relates to the likelihood and ease with which a brand name will come to the customer's mind. Brand recognition implies that consumers are able to confirm

that the brand has been seen or heard previously, when the brand is provided as a prompt. Brand recall relates to consumers' ability to remember the brand when given the product category, the needs fulfilled by the category, or some other cue. Brand awareness is important in the customer's decision making process. Brand awareness influences the creation and strength of brand associations in the customer's mind (Keller, 2003). Increasing brand awareness increases the likelihood that the brand will be a member of the consideration set. Moreover brand awareness affects decisions about brands in the consideration set. In low involvement situations brand awareness alone is enough for resulting in more favourable consumer response and product choice (Keller, 2003).

Berry (2000) researched service brand equity and analysed the strategies of 14 mature high-performance service companies to produce a Service-branding Model of service brand equity. One of his two elements of brand equity is brand awareness.

Figure 6: Berry's Service Branding Model



Source: Berry (2000)

Doyle (1998) also mentions the importance of awareness. Without a good product it is impossible to create a successful brand. However, unless there is

differentiation and awareness, a good product will not leave the supplier's premises.

2.5.5.2 Perceived quality

Perceived quality is a brand association that is given the status of a brand asset by Aaker (1996). Perceived quality drives financial performance and is often a business' major strategic thrust. Perceived quality is related to and even drives the perception of other attributes (Aaker, 1996). Perceived quality is considered by Aaker (1996) as a key positioning dimension for corporate brands and brands that range over product categories. Within those categories the perceived quality position is often the crucial point of differentiation (Aaker, 1996).

Perceived quality is not given an independent brand association status by Keller (2003). However Keller (2003) recognises the importance of the product itself (its features and specifications) in the development of a great brand and of brand equity. According to Keller (2003) consumer beliefs about the dimensions of performance, features, conformance quality, reliability, durability, serviceability, style and design of a product "underlie perceptions of the quality of the product that, in turn, can influence attitudes and behavior towards a brand."(Keller, 2003:238)

2.5.5.3 Brand loyalty

Brand loyalty refers to a "situation where a customer strongly prefers one brand over others" (Cant, Brink & Brijball, 2002: 222). Brand loyalty is considered by Aaker (1996) as a full fledged component of brand equity. According to Aaker (1996), the value of a brand is created by the customer loyalty it commands. An extremely loyal customer can be expected to generate a very predictable sales and profit stream and it costs less to retain customers than to attract new ones (Aaker, 1996). Furthermore, customer loyalty represents an entry barrier for competitors (Aaker,1996).

Wood (2000) also includes brand strength (brand loyalty) as one element of brand equity. Lassar *et al* (1995:13) argue that commitment, "the relative

strength of a consumer's positive feelings toward the brand", is one dimension of brand equity.

2.5.5.4 Brand associations

Brand associations are the associations consumers make with a brand (product attributes, a celebrity, a spokesperson, a symbol) (Aaker, 1996). Brand associations are the results of the brand identity – what the organisation wants the brand to stand for in the customer's mind. An important element in the brand building process is the development and implementation of a brand identity (Aaker, 1996). "Brand identity is a unique set of brand associations that the brand strategist aspires to create or maintain. These associations represent what the brand stands for and imply a promise to customers from the organisation members" (Aaker, 1996:68).

According to Keller (1993), brand associations contain the meaning of the brand for the consumers. The favourability, strength, and uniqueness of brand associations are the dimensions that distinguish brand knowledge. These dimensions have a very important role in influencing the differential response that makes up brand equity, particularly in high involvement decisions.

Brand associations can be categorised as attributes and benefits (Keller, 2003). Attributes are those descriptive features that typify a product or service - what a consumer thinks the product or service is or has and what is implied by its purchase or consumption. Benefits are the personal value and the meaning that the consumers attach to the product or service attributes - that is, what consumers think the product or service can do for them (Keller, 2003). Brand image is the perception about a brand that is mirrored by the brand associations that are held in the consumer memory (Keller, 1993).

Some of the brand equity dimensions mentioned by Lassar *et al* (1995) closely resemble the brand image and brand associations' elements. According to Lassar *et al* (1995) brand equity dimensions include performance, social image,

trustworthiness, value. Each of these brand equity components are defined as follows (Lassar e*t al,* 1995:13):

- Performance is “a consumer’s judgment about a brand’s fault-free and long-lasting physical operation and flawlessness in the product’s physical construction”.

- Social image is “the consumer’s perception of the esteem in which the consumer’s social group holds the brand. It includes the attributions a consumer makes and a consumer thinks that others make to the typical user of the brand”.

- Value is “the perceived brand utility relative to its costs, assessed by the consumer and based on simultaneous considerations of what is received and what is given up to receive it”.

- Trustworthiness is “the confidence a consumer places in the firm and the firm’s communications and as to whether the firm’s actions would be in the consumer’s interest”.

Berry (2000) also includes the meaning of the brand to the consumer (the brand image) in his brand equity model. According to him, brand meaning is mainly influenced by the customer’s experience with the company. Service businesses are labour-intensive, and human performance plays a critical role in building the brand (Berry, 2000).

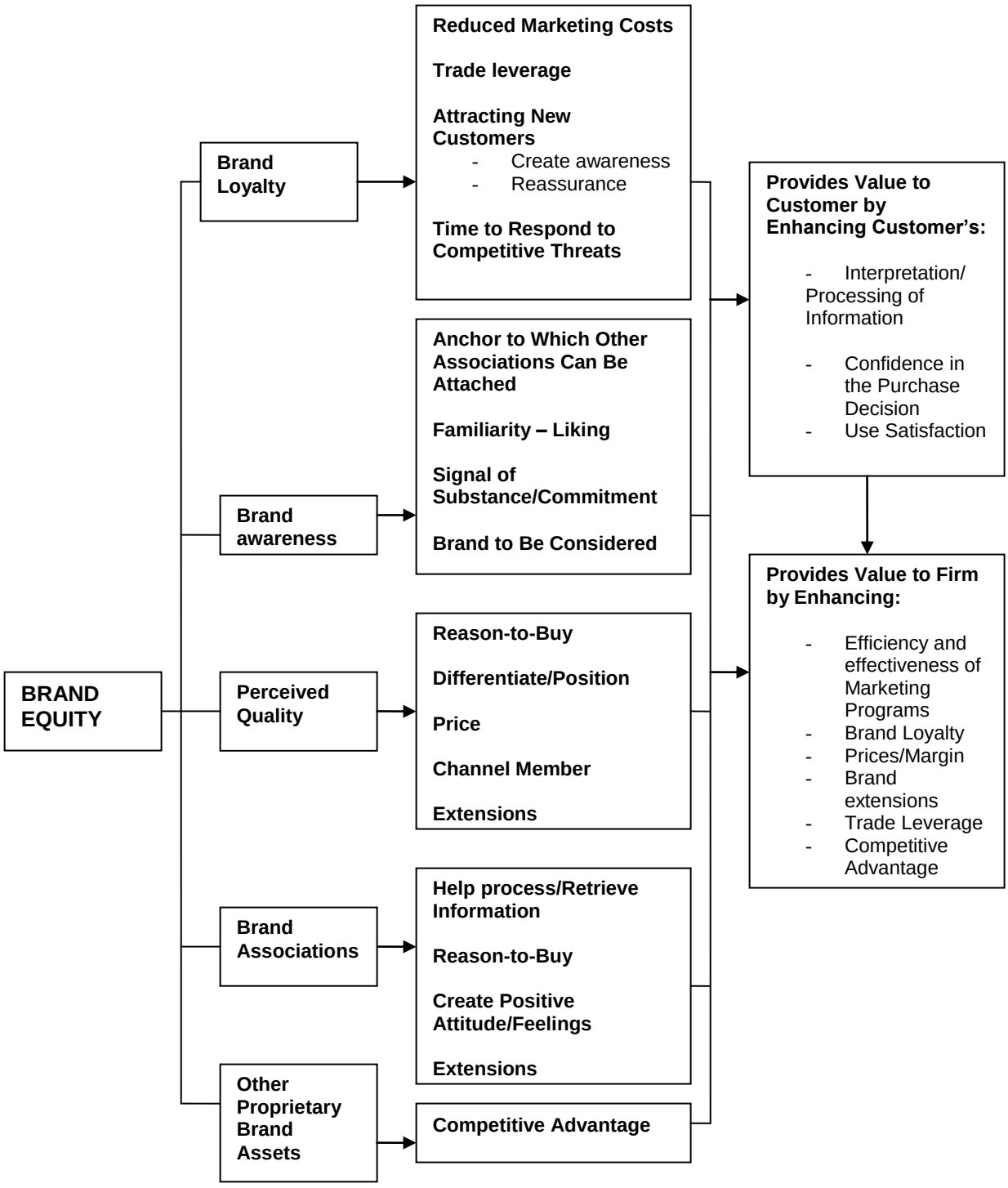
Doyle (1998) also mentions the beliefs held by the consumer about the brand and the brand identity. According to Doyle (1998) a strong brand is a combination of an effective product, a distinctive identity and added values. Added values are the subjective beliefs of customers and stem from the following:

- Experience of use
- User associations

- Belief in efficacy
- Brand appearance
- Manufacturers' name and reputation.

The first element of Wood (2000) brand equity chain is brand description (brand associations and brand image).

Figure 7: How Brand Equity Generates Value



Source: Aaker (1996:9)

2.5.6 Brand equity in the service industry

The services sector now accounts for a large part of the economy in many countries. Defining a service has traditionally been difficult (Lovelock, 2001). Lovelock (2001:3) provides two definitions of service:

"A service is an act or performance offered by one party to another. Although the process may be tied to a physical product, the performance is essentially intangible and does not normally result in ownership of any of the factors of production"

"Services are economic activities that create value and provide benefits for customers at specific times and places as a result of bringing about a desired change in – or on behalf of the recipient of the service"

Kotler (2001:428) defines a service as: "A service is any act or performance that one party can offer to another that is essentially intangible and does not result in the ownership of anything. Its production may or may not be tied to a physical product".

While there has been extensive research on branding for physical goods (Krishnan & Hartline, 2001) or on the 7Ps (Product, Price, Place, Promotion, Physical Evidence, Process, People) of the services marketing (Moorthi, 2002), there is a paucity of research on branding services. Some researchers think there are no great differences between the two.

Levy (1996) is of the opinion that successful service brands can be developed based on the principles (product definition, understandable product benefit identification, brand differentiation, consumer motivation and measurement of product strength) of fast moving consumer goods (FMCG) branding.

Levitt (1981) also argues against a focus on the differences between services marketing and goods marketing. One remedy to this is for companies to define services and goods in terms of tangibles and intangibles.

McDonald, De Chernatony & Harris (2001) acknowledge the similarities between the principles of branding for services and physical goods. However they are of the opinion that branding of services should go beyond the FMCG (fast moving consumer goods) model. The specific nature of services (e.g. their intangibility) requires that branding strategies be tailored. They advocate the use of the physical components of the service to make tangible the service offerings and emphasise the importance of corporate branding and the role played by consumers and employees in the development of a brand.

Other researchers (Onkvisit & Shaw, 1989; Bharadwaj, Varadarajan & Fahy, 1993) suggest that branding services may be more important than product marketing as it helps in reducing the risk factor. Onkvisit & Shaw (1989) differentiate between two levels of service offerings: the service form and the service brand. For each service form there are a number of service brands. Consumers evaluate each of them separately though their image may interact at times.

Keller (2003) is of the opinion that the level of sophistication and pervasiveness in the branding of services has accelerated in recent years. Branding is important to service firms and enables them to address potential intangibility and variability problems. Furthermore brand symbols are very important as they help in making the abstract nature of services more concrete (Keller, 2003).

All products, whether goods or services, have a continuum of evaluation (search, experience, and credence attributes). Search qualities are characteristics the buyer can evaluate before purchase; experience qualities are characteristics the buyer can evaluate after purchase; credence qualities are characteristics the buyer cannot evaluate even after consumption (Lovelock, 2001). Most goods are high on search and experience attributes; most services are high on experience and credence attributes. Those attributes of services make the evaluation tasks for the service consumer more difficult. One argument put forward is that the

importance of brand equity for services will depend on whether the service is dominated by search, experience, or credence attributes.

Bharadwaj *et al* (1993) propose that brand equity is more important for services that are dominated by experience and credence attributes. The absence of search attributes makes the purchase process more complex and increases the risk of potential financial loss for the consumer. Krishnan & Hartline (2001) disprove this theory during a research done with undergraduates students. The results show that consumers do not perceive and understand the differences implied by the search, experience and credence attributes of services. Hence knowledge of the product category has no effect on the relative differences in brand equity indices.

2.5.7 Building brand equity

According to Keller (1993, 2003), building brand equity depends on three main factors:

(1) The initial choices for the brand elements or identities making up the brand The most common brand elements are the brand names, Uniform Resource Locators (URLs), logos, symbols, characters, packaging, slogans, and jingles (Keller, 2003). These brand elements should be chosen to increase brand awareness and create strong, favourable and unique brand associations. Their choice should be governed by the following criteria: memorability, meaningfulness, likeability, transferability, adaptability and legally protectable (Keller, 2003).

(2) The way the brand is integrated into the supporting marketing program,
The objective of marketing programs is to increase brand awareness and create positive, strong, and unique brand associations in memory so that consumers buy the product or service. An appropriate marketing strategy causes the consumer to "experience" or be exposed to the brand. Associations can be created in diverse ways. One primary approach is through the product or service specifications. These determine a consumer's understanding of what the product

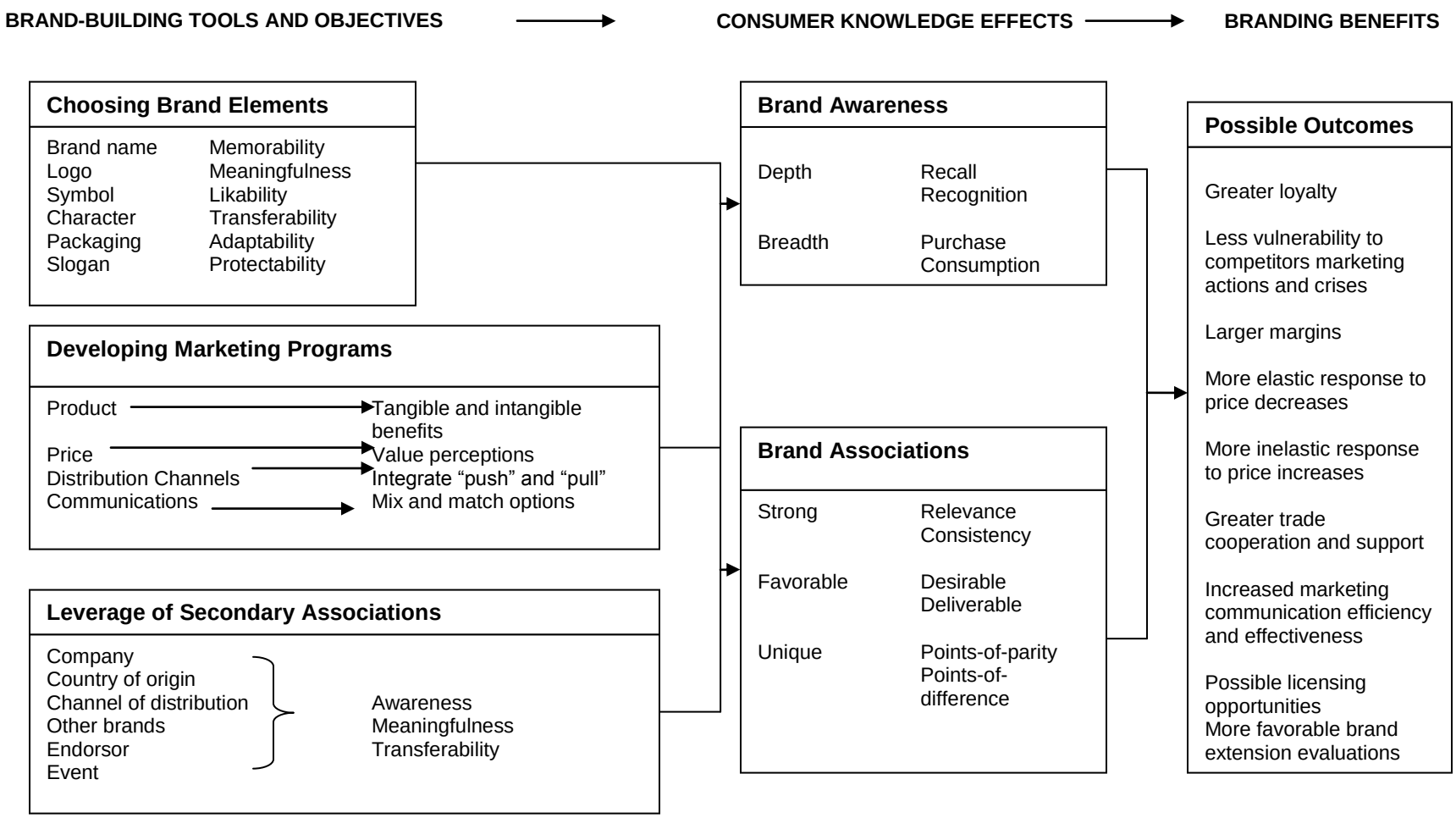
or service means (Keller, 1993). “At the heart of a great brand is invariably a great product” (Keller, 2003:237).

Another way is through the marketing communication efforts of the firm which shape consumer perceptions of the product or service. The strength of brand associations from communication effects depends on how the brand identities are integrated into the supporting marketing program (Keller, 1993).

3) The associations indirectly transferred to the brand by linking the brand to other entity (e.g. the company, country of origin, channel of distribution, or another brand).

Building brand equity is also done through the leveraging of secondary associations (Keller, 2003). Brand associations may be connected to other entities that have their own associations, thus creating secondary associations. The brand may be linked to certain factors such as the company, countries or other geographical regions (through product origin), channels of distribution, other brands, spokespeople, characters or third party sources (Keller, 2003).

Figure 8: Building Customer-Based Brand Equity



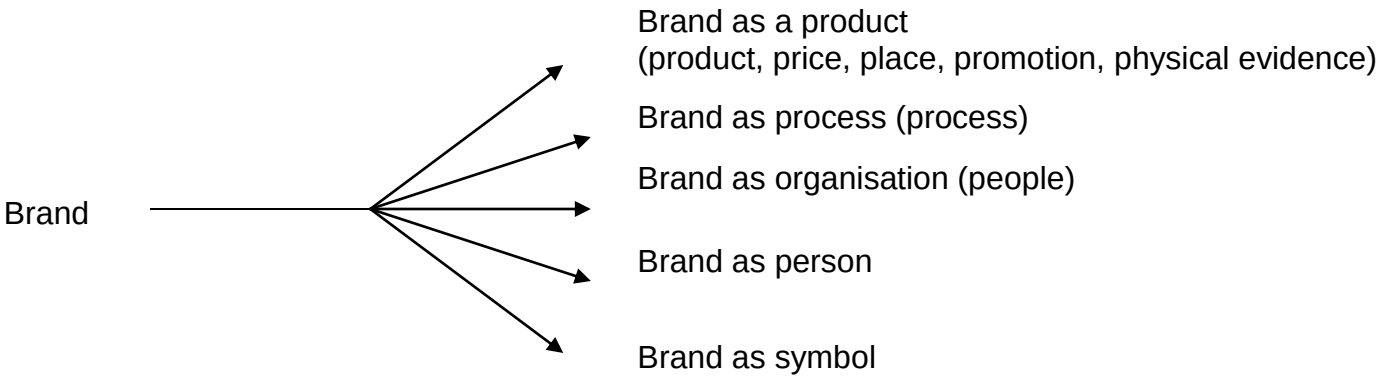
Source: Keller (2003:46)

Moorthi (2002) proposes a comprehensive approach to the branding of services. By so doing, he applies Aaker's (1996) brand identity framework to the economic classification of three types of goods and the 7Ps of services marketing.

Aaker's (1996) brand identity framework proposes four elements under which an identity is typically developed for a brand. These are:
(1) Brand as product (tangible and intangible aspect of the product as well as the way the customer relates to the product);
(2) Brand as organisation (the organisation's innovation, consumer concern);
(3) Brand as person (the personification of the brand);
(4) Brand as symbol (symbolism in the form of visual imagery, logo etc).

The 7Ps of services marketing (product, price, place, promotion, physical evidence, process and people) are blended with Aaker's (1996) brand identity framework as shown in the figure below.

Figure 9: Proposed Services Branding Model



Source: Moorthi (2002:261)

Then the modified Aaker (1996) model is related to the classification of goods into search, experience and credence categories. Products have more search properties, while services have more experience and credence properties. Therefore most services are either experience goods or credence goods.

Table 1 summarises the results of applying this framework.

Table 1: Application of Services branding model to three types of goods

		Type of goods	
Branding	**Search Good**	**Experience good**	**Credence Good**
Brand as product			
Product			
Typical example	Scooter Washing machine	Airline Restaurant	Doctor Consultant
Inseparability	Low	Medium	High
Perceived risk	Low/medium	Medium	High
Price			
Price estimation	Easy	Relatively easy	Difficult
Ability to price premium	Difficult	Difficult	Easier
Place			
Physical Location	Close to the customer	Reasonable distance	Distance not an issue
Risk in relying on channels	Relatively low	High	Very high
Promotion			
Nature of advertising desirable	Provide information	Word – of- mouth from satisfied customers	General word-of-mouth
Advertising message	Direct	Indirect	Indirect
Physical Evidence			
Physical evidence needed	High	Medium	Low
Physical infrastructure (machines)	Important	Very important	Less important
Core vs. supplementary components of service	Core important so is supplementary service	Both equally important	Core more important
Brand as process			
Process of interaction	Standardised	Fairly standardized: exceptions customised	Customised
Degree of customer involvement	Medium	Medium to high	High
Content of interaction with customer	Clear	Somewhat nebulous	Ambiguous
Brand as organisation			
Organisational culture	Product driven	Innovation driven	Knowledge driven
Skill set required	Basic	Basic but tuned to	Advanced skills

		delight the customer	
Employee compensation	Not high	Not high	High
Type of person needed	Specialist with slightly narrow focus	Specialist with slightly broad focus	Specialist with very broad comprehension
Brand as person			
Role	Problem solver	Entertainer	Advisor
Role expectation	Doer	Doer and talker	Doer and thinker
Personification	Friend	Spellbinder	Teacher
Typical person	Friday (Crusoe)/Watson (Holmes)	Charlie Chaplin/Merlin	Archimedes
Attitude	Trouble shooting	Delighting	Confidence-inspiring
Age	Young man	Middle aged	Graying
Relationship with customer	Fraternal	Avuncular	Father-figure
Brand as symbol			
Adjectives for the brand	Useful, convenient	Lively, vibrant	Deep, wise
Typical slogan	"Non-stop performance"	"Come discover"/"At your service	""Complete solution"/Your search ends here
Typical sponsorship	Chat show	World tour/food carnival	College debate/Chess

Source: Moorthi (2002:262)

2.5.8 The role of advertising in building brand equity

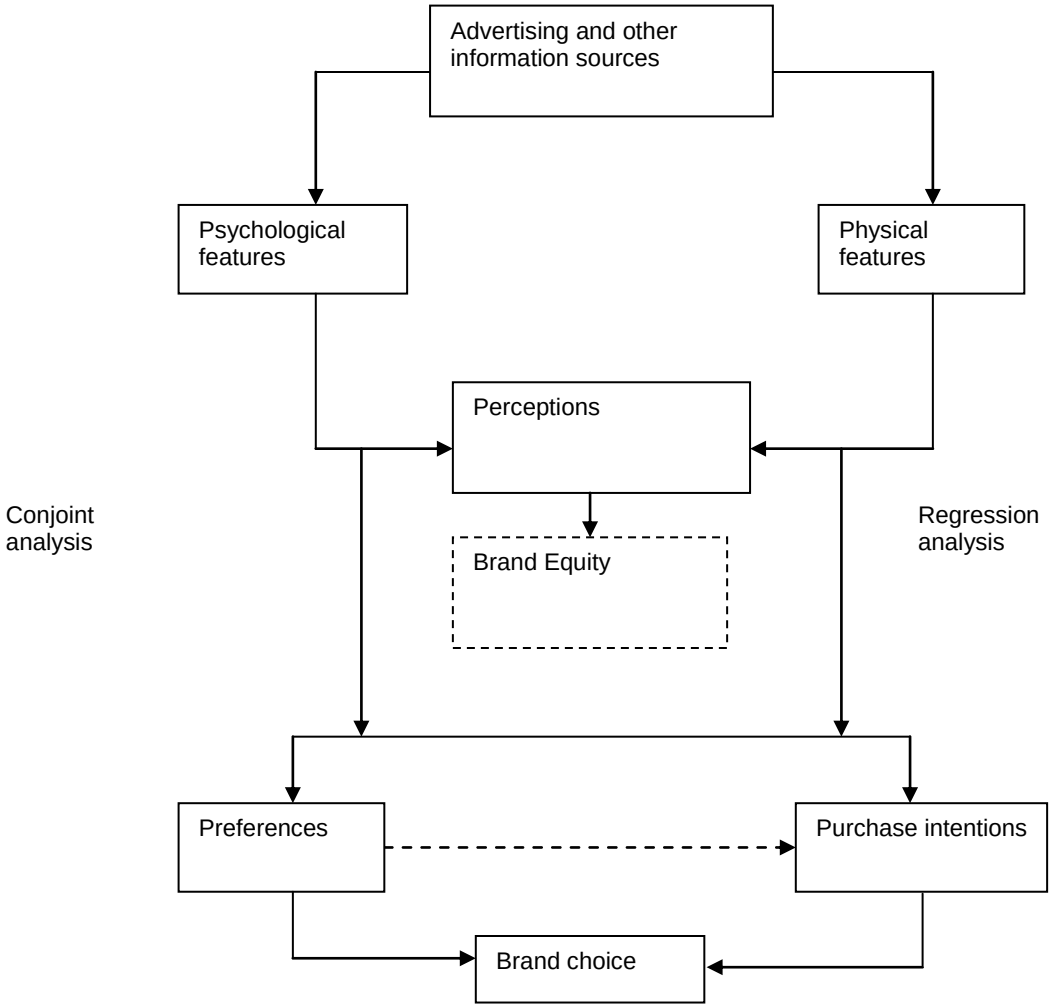
Marketing Communications play a very important role in the brand building process. "Marketing communications are the means by which firms attempt to inform, persuade, and remind consumers- either directly or indirectly – about the brands that they sell" (Keller, 2003:283). Marketing communications contribute to brand equity by creating "awareness of the brand; linking strong, favorable, and unique associations to the brand in consumers' memory; eliciting positive brand judgments or feelings; and facilitating a stronger consumer-brand connection and brand resonance" (Keller, 2003:284).

One element that helps in the building up of brand equity is advertising. Advertising is defined by Keller (2003:286) as "any paid form of nonpersonal presentation and promotion of ideas, goods, or services by an identified sponsor". Advertising is recognised by Keller (2003) as one key element, though not the only one, of marketing communications. According to Keller (2003) the

importance of advertising in the creation of strong, positive and unique brand associations and positive judgments and feelings is generally accepted.

Advertising increases brand awareness, one of the components of brand equity. According to Berry (2000), the primary source of brand awareness is the company's presented brand, i.e. the company's controlled communications (that is advertising, service facilities, company name, and logo). External brand communications, that is, information customers receive about the service via word-of-mouth communications and public relations is of secondary importance (Berry, 2000). Through advertising it becomes more likely that the consumer includes the brand in his choice set. Advertising also contributes to building up the brand associations and it influences the perception of the consumer regarding the quality of the brand. According to Cobb–Walgren, Ruble & Donthu (1995), information sources like advertising, personal experience or objective information sources help consumers in forming perceptions about the physical and psychological features of a brand. These perceptions contribute to the meaning or value that the brand adds to the consumer i.e. brand equity. Brand equity then influences consumer preferences and purchase intentions and ultimately brand choice. This is summarised in Figure 10.

Figure 10: Antecedents and Consequences of Brand Equity



Source: Cobb – Walgren *et al* (1995:29)

Cobb-Walgren *et al* (1995) undertook a research on two sets of brands, one from a service category characterised by high financial and functional risk and one from a low risk product category. They used the perceptual components of Aaker (1991) definition of brand equity: awareness, brand associations and perceived quality. They used conjoint analysis and regression analysis to determine brand preference and the importance of brand name relative to other attributes. The results revealed that the brand with the greater level of advertising budget yielded substantially higher levels of brand equity, the brand with the higher equity

generated significantly greater preference and purchase intentions. Therefore the following equation holds true.

Equation 1

Advertising = knowledge = liking

According to Farr (1996), the role of advertising in putting a new brand on the map is very important. The successful creation of brand awareness is one of the first steps required for a successful launch. Consumers are unlikely to buy a brand they know nothing about - except in the case of low risk products. Farr (1996) further states that, for established brands, increased brand presence is a true leading indicator of sales growth. Advertising influences perceived product performance in two ways. First, advertising guides the expectations about the product experience (product enhancement). Second, advertising creates a halo of superiority around the brand (interest-status).

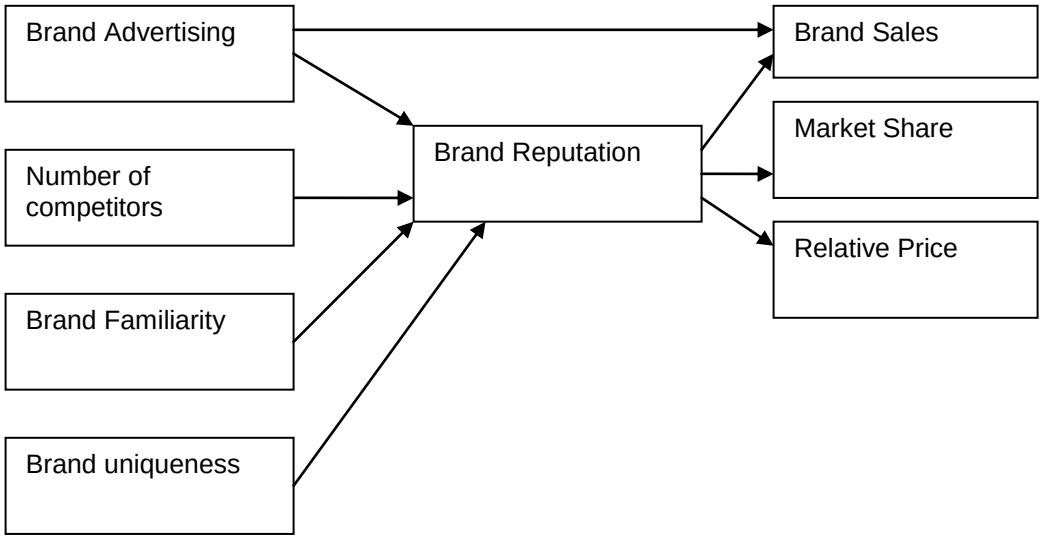
Chaudhuri (2002) explored, through a study, the relationships between consumer-level variables (brand reputation) and firm-level brand equity outcomes (market share and relative price). His study aimed at determining the effects (if any) of brand advertising, brand familiarity, and brand uniqueness on brand reputation and the effects (if any) of brand reputation on market share and relative price. Brand equity outcomes are a function of influences at the consumer level such as brand reputation and also have influence at the market level of the brand, that is, the amount of advertising dollars spent in promoting the brand.

Chaudhuri's model (2002) suggests that the consumer-level variables of brand familiarity and brand uniqueness are related through brand reputation to brand equity outcomes at the market level such as market share and relative price. It is also suggested that brand advertising is indirectly related to brand equity outcomes, through the construct of brand reputation. Chaudhuri (2002) defines brand reputation as the overall value, esteem and character of a brand as seen

or judged by people in general. Brand reputation results in greater company profitability.

Hence different routes lead to brand equity. Brand uniqueness and brand familiarity lead to greater brand reputation and to greater market share, relative price, and sales for the brand. Another route is through a brand's advertising that creates a greater reputation for the brand leading to a higher market share, relative price, and sales for the brand. The effects of consumer-level variables (familiarity, uniqueness) and market-level variables (advertising, number of competitors, brand age) influence brand equity outcomes through the construct of brand reputation. The results of Chaudhuri's (2002) study indicate that there is strong evidence for the model he postulated.

Figure 11: Chaudhuri's Final Model



Source: Chaudhuri, 2002

2.5.9 Measuring customer-based brand equity

Ten measures regrouped into five categories were developed by Aaker (1996) to determine brand equity:

- Loyalty measures

    1. Price premium
    2. Satisfaction/Loyalty

- Perceived quality/Leadership measures

    3. Perceived quality
    4. Leadership/popularity

- Associations/Differentiation measures

    5. Perceived value
    6. Brand personality
    7. Organisational associations

- Awareness measures

    8. Brand awareness

- Market behaviours measures

    9. Market share
    10. Market price and distribution coverage

The first four categories correspond to customer perceptions of the brands along the four dimensions of brand equity – loyalty, perceived quality, associations and awareness. The fifth category includes two sets of market behaviour information that is obtained from the market.

Customer-based brand equity is defined by Keller (1993, 2003) as the differential effect that knowledge about the brand has on customer response to the marketing of the brand. It follows, according to Keller (1993, 2003), that there are

two basic approaches to measuring customer-based brand equity. The "indirect" approach assesses potential sources of customer-based brand equity through the measurement of brand knowledge (i.e. brand awareness and brand image). The "direct" approach measures customer-based brand equity by assessing the impact that brand knowledge has on the consumer reaction to the diverse elements of the marketing program. Keller (1993, 2003) proposes that these two approaches are complementary and should be used by marketers.

Keller (2003:389) proposes the development of a brand equity measurement system, a “set of research procedures designed to provide timely, accurate, and actionable information on brands for marketers so that they can make the best possible tactical decisions in the short run and strategic decisions in the long run”. The objective of the brand equity measurement system is to understand and relate the various sources and outcomes of brand equity. To be able to build a brand equity measurement system, marketers must first understand the brand value chain, a “structured approach to assessing the sources and outcomes of brand equity and the manner by which marketing activities create brand value.” (Keller, 2003:390).

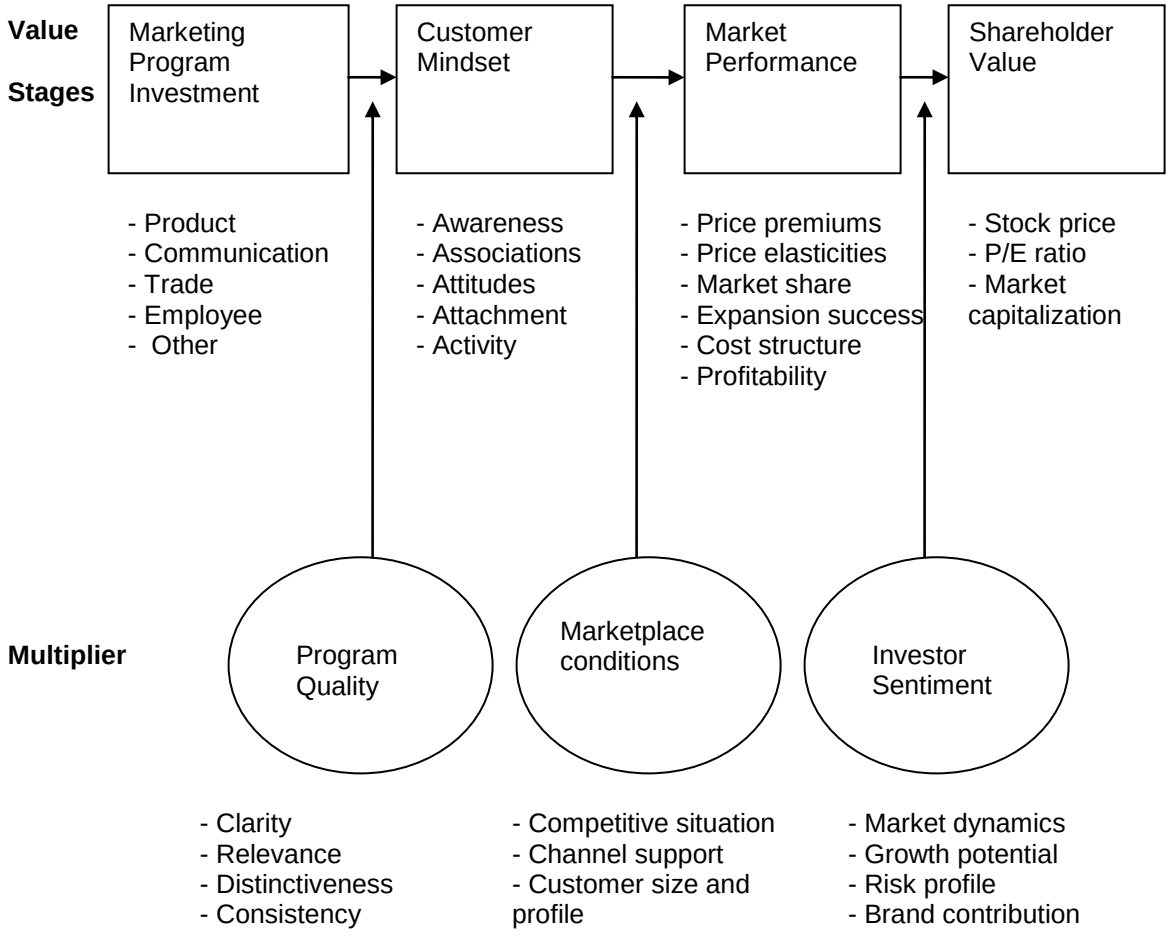
According to the brand value chain, the brand value creation process starts when the firm invests in a marketing program targeting its current or potential customers. Marketing programs include product research, development, design, trade support, marketing communications (for example advertising, promotion, sponsorship, direct and interactive marketing, personal selling etc). This marketing program affects the customer mindset. High investment does not always result in successful brand creation. The quality of the program in terms of clarity, relevance, distinctiveness and consistency are important (Keller, 2003).

An effective marketing program will affect customer mindset. Customer mindsets include “everything that exists in the minds of customers with respect to a brand: thoughts, feelings, experiences, images, perceptions, beliefs, attitudes and so forth.” (Keller, 2003: 392). Five important measures are highlighted by Keller

(2003): brand awareness, brand associations, brand attitudes, brand attachment, and brand activity. Awareness supports brand associations. Brand associations drive brand attitudes and lead to brand attachment and brand activity. Brand value is created when the customer has a high level of brand awareness, strong, favourable and unique brand associations, positive brand attitudes, strong brand attachment and brand loyalty, and a high level of brand activity.

The customer mindset results in certain outcomes which affect market performance. The extent to which market performance is impacted depends also on the competitive superiority of the brand, channel and other intermediary support, customer size and customer profile. Six crucial outcomes of customer response are: willingness of the customer to pay a price premium, elastic responses to price decrease and inelastic responses to price increase, greater market share, brand expansion, ability to reduce marketing programs expenditures and lastly brand profitability which is the result of the five previously mentioned dimensions. The brand value chain finally results in shareholder value.

Figure 12: The Brand Value Chain



Source: Keller (2003: 391)

The implementation of a brand equity measurement system requires two steps: designing brand tracking studies and the establishment of a brand equity measurement system. Brand audits set the strategic direction for the brand and inform marketers of where the brand has been. Brand tracking studies inform the marketers of where the brand is now and about the effectiveness of current marketing programs (Keller, 2003). Brand equity management system involves the following: the establishment of a brand equity charter which "chronicles the company's general philosophy with respect to brand equity; summarizes the

activity and outcomes related to brand audits, brand tracking, and so forth; outlines guidelines for brand strategies and tactics; and documents proper treatment of the brand." (Keller, 2003: 423).

Measuring the sources of customer-based brand equity takes place through the measurement of various aspects of brand awareness and brand image. The quantitative and qualitative techniques that can be used are summarised below.

Table 2: Measuring sources of brand equity

I. Qualitative Research Techniques
Free Association
Adjective ratings and checklists
Projective techniques
Photo sorts
Bubble drawings
Story telling
Personification exercises
Role playing
Experiential methods
II. Quantitative Research techniques
A. Brand awareness
Direct and indirect measures of brand recognition
Aided and unaided measures of brand recall
B. Brand image
Open-ended and scale measures of specific brand attributes and benefits
- Strength
- Favorability
- Uniqueness
Overall judgments and feelings
Overall relationships measures
- Intensity
- Activity

Source: Keller (2003: 466)

Keller (2003) describes two ways in which outcomes of customer-based brand equity can be measured: comparative methods and holistic methods. The two methods are summarised below in the table below:

Table 3: Measuring outcomes of brand equity

Comparative methods: Involve experiments that examine consumer attitudes and behaviour towards a brand to more directly assess the benefits arising from having a high level of awareness and strong, favorable, and unique brand associations. - Brand-based comparative approaches: Experiments in which one group of consumers responds to an element of the marketing program when it is attributed to the brand and another group responds to that same element when it is attributed to a competitive or fictitiously named brand. - Marketing-based comparative approaches: Experiments in which consumers respond to changes in elements of the marketing program for the brand or competitive brands. - Conjoint analysis: A survey-based multivariate technique that enables marketers to profile the consumer buying decision process with respect to products and brands.
Holistic methods: Attempt to place an overall value of the brand in either abstract utility terms or concrete financial terms. Thus, holistic methods attempt to "net out" various considerations to determine the unique contribution of the brand. - Residual approach: Examines the value of the brand by subtracting out consumers' preferences for the brand based on physical product attributes alone from their overall brand preferences. - Valuation approach: Places a financial value on the brand for accounting purposes, mergers and acquisitions, other such reasons.

Source: Keller (2003: 504)

2.5.10 Past research on brand equity in service industries

2.5.10.1 Service quality and name familiarity influences on service use

Most managers agree that high quality products and services are fundamental to a successful competitive strategy (Arora & Stoner, 1996). Arora & Stoner (1996) researched the influence of service quality and name familiarity on attitudes toward advertisements for selected services, attitudes toward using or obtaining these services, and the intention to use these services. Two specific services, automobile insurance and copy services, were examined in the course of their study. In the automobile insurance service, results showed that both name familiarity and perceived service quality significantly affected the respondents'

attitude toward the act of obtaining insurance. Respondents were more likely to feel that obtaining the insurance service from the familiar name was a better idea and a wiser choice and decision than obtaining the service from the less familiar name. Similarly, respondents indicated that it was a better idea and a wiser decision and choice to obtain the insurance from the high quality rather than low quality option.

In the copy services area, the impact of name familiarity was more significant than perceived quality. The high name familiarity copy service resulted in a more favourable attitude toward the advertisement, a more positive attitude toward the act of using the service, and a stronger likelihood to use or switch to the service than did the low name familiarity service. Though higher perceived quality positively related to attitude toward the advertisement, attitude toward the act of using the service, and intention to use the service, the impacts were not statistically significant.

2.5.10.2 Brand investment and service firms' performance

Matear, Gra & Garrett (2004) investigate how three marketing-related sources of advantage – market orientation, new service development and brand investment – contribute to service firm performance in a multi-sector sample of service organisations. Cost, brand and new service success positions are found to contribute to service firm performance. Brand investment contributes to two positional advantages, a relational position and a brand position, but only the brand position makes a direct contribution to performance. Therefore one of the most beneficial market positions for service organisations is a superior brand position.

2.5.10.3 Brand Dimensions

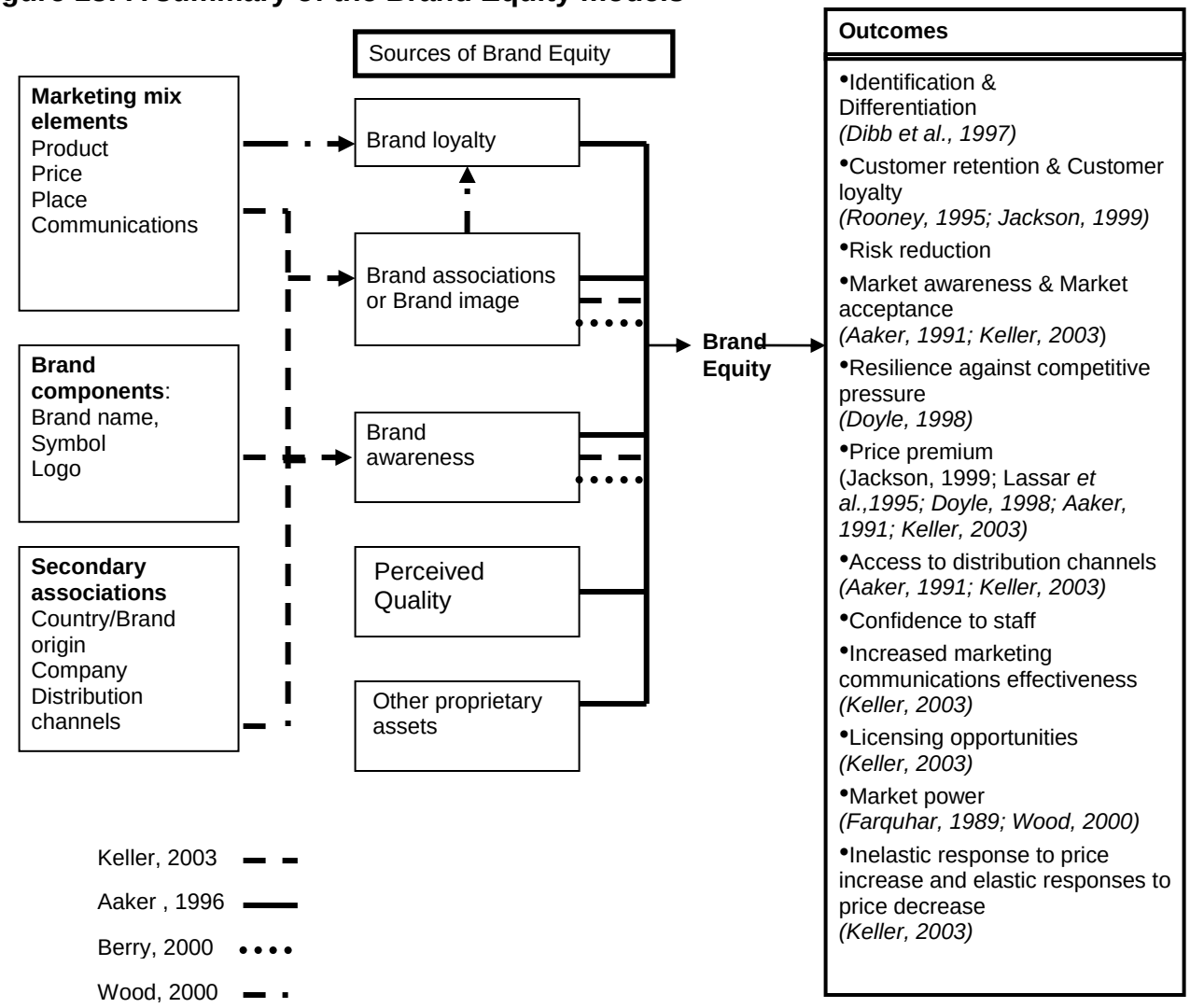
O'Cass & Grace (2003) investigated brand dimensions that are specifically attributed to branded services and how important these dimensions are in decision making, as well as their relationships to brand associations, brand attitude and usage intentions. The results of their studies show that there are

distinct dimensions that are most important to the consumer during the decision-making process. These key dimensions are value for money, employees of the service firm (and in particular how the employees interact with the customer), facilities, brochures and advertisements, brand name, previous experience with the brand, word of mouth and the image of other users of the service. The findings also indicate the formation of very specific brand association with meaningful relationship to specific brands and a strong impact of such associations on attitudes towards service brands. It is also clear that brand attitude does influence a consumer's intention to purchase specific service brands over others. Marketers therefore need to pay special attention to service design, price and communications.

2.5.11 A critique of the Brand Equity models

The various models of Brand Equity and their possible outcomes have been summarised in Figure 13.

Figure 13: A summary of the Brand Equity models



There seems to be a commonality of views among marketing authors regarding the importance of some sources of brand equity.

Brand awareness is considered by Aaker (1996), Keller (1993, 2003) as an important antecedent of brand equity. Both consider brand awareness as a crucial element in the customer decision making. Keller (2003) considers that awareness helps in the development and strengthening of brand associations and puts the brand into the consideration set. Aaker (1996) is of the opinion that

brand awareness provides the brand with a competitive edge. Doyle (1998) also considers that a brand cannot be purchased without awareness, even though the product may be good.

Brand associations are also one of the most frequently mentioned source of brand equity. However, the ways in which brand associations are mentioned by different authors are different. Aaker (1996) gives to perceived quality an independent association status and raises it to the level of a brand asset. Keller (2003) does not come to the same conclusion though he recognises that consumer beliefs regarding some quality related dimensions of the product (performance, features, conformance quality, reliability, durability, serviceability) do affect customer perceptions and customer behaviour towards a brand.

Keller (1993) argues that brand associations contain the meaning of the brand for the consumers. Aaker (1996) argues that brand associations are the result of brand identity. The concept of brand identity mentioned by Aaker (1996) is not far from the brand image of Keller (2003), which is a reflection of perceptions about a brand conveyed by the brand associations. Doyle (1998) also mentions the beliefs held by the consumer about the brand and the brand identity. Lassar *et al* 's (1995) brand equity dimensions (performance, social image, value) closely resemble the brand image and brand associations' elements. Wood's (2000) brand description refers to brand image and associations elements.

Brand loyalty is mentioned by some authors. Aaker (1996) regards it as a brand asset. Brand strength (brand loyalty) is the second element of Wood (2000) brand equity chain. Lassar *et al* (1995) include commitment to the brand as one dimension of brand equity.

2.6 The customer decision-making process

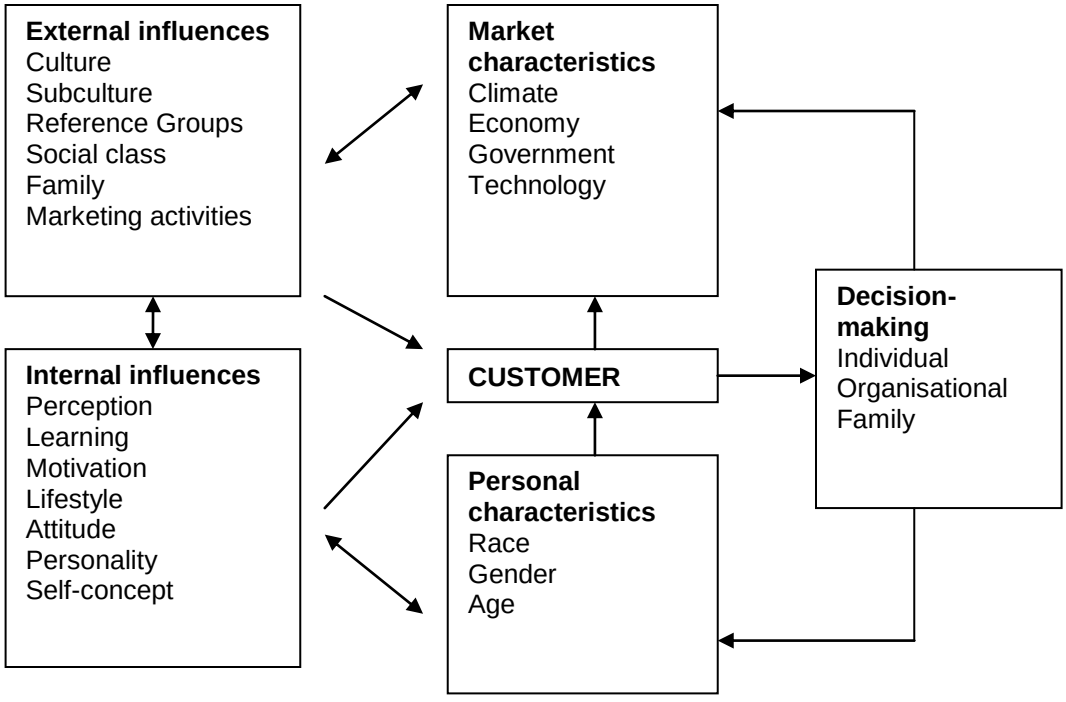
"Customer decisions are decisions customers make in the marketplace as buyers, payers, and users. Typically these decisions include whether to purchase, what to purchase, when to purchase, from whom to purchase, and how to pay for it" (Sheth, Mittal & Newman, 1999:518).

2.6.1 Determinants of customer behaviour

2.6.1.1 Internal and external influences on customer behaviour

Customer behaviour is triggered by needs (Sheth *et al*, 1999; Cant *et al*, 2002). Customers are influenced by many individual and environmental factors, which continuously and simultaneously interact, and play a primary role in the final outcome of customers' choice (Cant *et al*, 2002). In any buying situations individuals take up information from their external environment and combine it with their inner needs, motives, perceptions and attitudes. They make a choice that may also be influenced by the past, the act of recalling and personality factors (Cant *et al,* 2002).

Figure 14: An Overall Model of Customer Behaviour



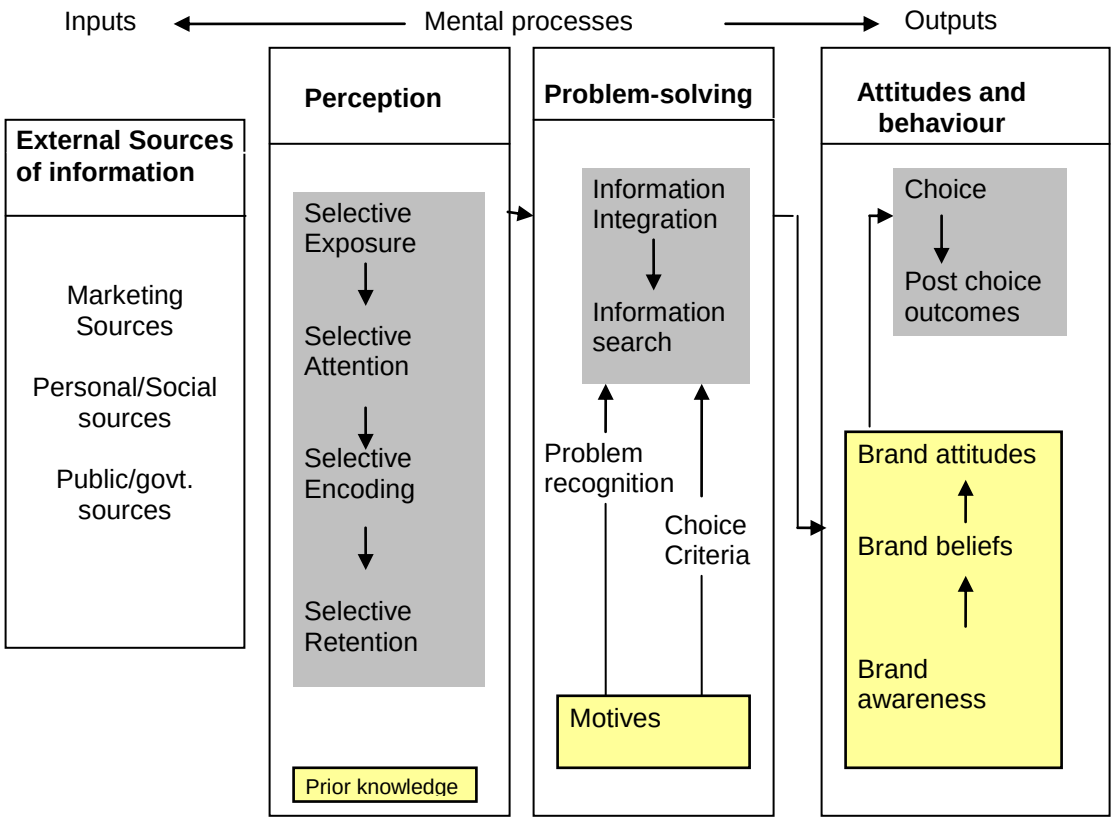
Source: Cant *et al* (2002:23)

Sheth *et al* (1999) argue that a customer's needs are determined by personal characteristics (genetics, biogenics, psychogenics) and physical characteristics (climate, topography, ecology). His wants are determined by both individual

context (his financial resources, the groups and organisations he belongs to, his cultural environment) and his environmental context (economy, technology, public policy).

Sheth *et al* (1999) devised a comprehensive model of buyer behaviour shown in Figure 15. This model has four major components: the inputs, the mental processes of perceptions and problem solving, and the outputs (attitudes and behaviours). The input element is made up of the external sources of information. The perceptual processes relate to how the information from the input components is registered and coded by the customer. The problem solving process concerns how a purchase problem is recognised and how this problem is solved using the information registered by the perceptual system. The outputs of this process are a set of cognitions about and evaluations of the various brands which lead to a choice and purchase decision, a purchase and post purchase behaviours.

Figure 15: A Comprehensive Model of Buyer Behaviour



Source: Sheth *et al* (1999:554)

2.6.1.2 Market values and customer roles

Sheth *et al* (1999) classify customer roles into buyer, payer, and user roles:

- Buyer – the person involved in the procurement of the product from the marketplace
- Payer – the one who finances
- User – the one who consumes

Individual customers may play all three or some of these roles. According to Sheth *et al* (1999), customers do not buy a product or service for its own sake: rather they buy it for what it does (the value they receive through the purchase and use of the product or service). Values therefore refer to the problem-solving

benefits (tangible or intangible) a person receives from a product or service). Sheth *et al* (1999) identify two broad clusters of values as follows:

Table 4: Market values and customer roles

	Customer roles		
	User	Payer	Buyer
Universal values	Performance value	Price value	Service value
Personal values Group – specific	Social value	Credit value	Convenience value
Individual specific	Emotional value	Financing value	Personalization value

Source: Sheth *et al* (1999)

- Performance value is the quality of the physical outcome of using the product or service.
- Personal values include social and emotional values.
- Price value is the reasonable price and other financial costs that are incurred in the acquisition of the product.
- Service value include the assistance received that is pre-purchase advice and assistance; post purchase advice and assistance in maintaining the product's use worth; freedom from risk of a mispurchase by being able to refund or exchange the merchandise.
- Convenience relates to the savings in time and effort needed to acquire the product.
- Personalisation is the degree of customisation and interpersonal relation.

2.6.1.3 Decision-making traits

Sproles & Kendall (1986:267) defined consumer decision-making style as "a mental orientation characterising a consumer's approach to making choices". Sproles & Kendall (1986) developed a comprehensive instrument that aimed at

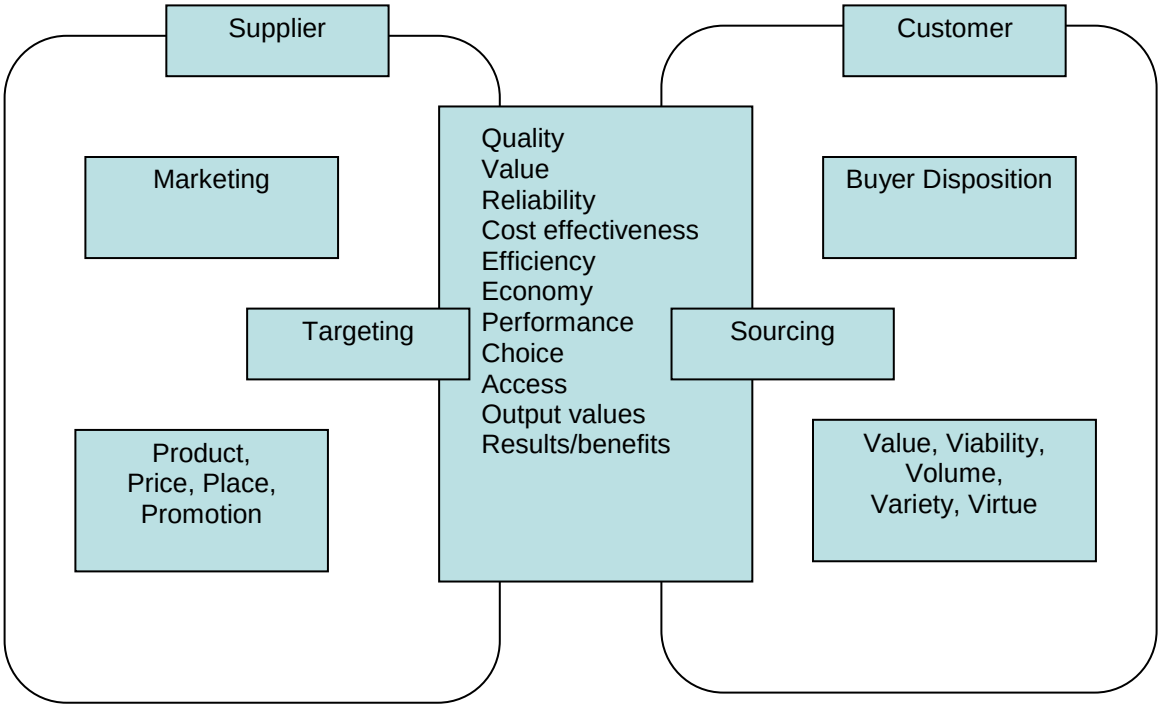
measuring decision-making traits and called it the consumer style inventory (CSI). They identified eight mental characteristics of consumer decision making:
(1) Perfectionism or high-quality consciousness;
(2) Brand consciousness;
(3) Novelty-fashion consciousness;
(4) Recreational, hedonistic shopping consciousness;
(5) Price and “value for money” shopping consciousness;
(6) Impulsiveness;
(7) Confusion over choice of brands, stores and consumer information; and
(8) Habitual, brand loyal orientation towards consumption.

The CSI is the most-tested instrument available to assist marketers in examining cross-cultural decision-making styles (Walsh, Mitchell & Hennig-Thurau, 2001). However some concerns have been expressed about its generalizability across countries. Evidence suggests that the CSI is more applicable to developed countries (Lysonski, Durvasula & Zotos, 1995).

2.6.1.4 Buyer Disposition

Bennett (1997) develops a new marketing paradigm that is determined by the needs of the market, rather than by the organisation. Bennett (1997) examines the notion of targeting from the buyer’s perspective, a concept he names buyer disposition. Buyer disposition means the process through which the potential customer thinks through, evaluates, seeks advice about, reflects on, and finally decides on a suitable source of supply for the product or service. He argues that the disposition of a buyer towards a product or service or supplier can be represented by five criteria – the 5 Vs: value, viability, volume, variety and virtue. The five Vs can be used in combination with the marketing mix to enable a supplier or provider to achieve a more detailed understanding of the buying process and ultimately of product/service adoption.

Figure 16: The interface of marketing and buyer disposition



Source: Bennett (1997:152)

Table 5: Buyer Disposition: the five Vs

	Value	**Viability**	**Volume**	**Variety**	**Virtue**
The elements Of buyer disposition	Quality Uniqueness Technical specification Performance Price/fee Intermediaries Single source Supplier reputation Value for others Difficulty in sourcing Prestige	Branding Choice Repetition Reliability Functionality Client access Service Shelf life Result/output Affordable Distance/location	Quantity Replication Divisibility Consistency Spares support Pack size Availability Buy in advance Bespoke Split parts	Seasonality Range Abnormality Order status Literature support Packaging Replacement Access to range Inspection by customer Demonstration	Service Support Staff proficiency Courtesy Product knowledge Technical information Operational support Friendliness Handling of complaints Restitution

Source: Bennett (1997:153)

2.6.1.5 Service Quality

Service quality is a major concern (Asubonteng, McCleary & Swan, 1996). The preferred tool for measuring and managing service quality is SERVQUAL which was developed by Parasuraman, Zeithaml & Berry (1985, 1988). The SERVQUAL measure is based on customer's perceptions of service quality. Initially, Parasuraman *et al* (1985) identified ten fundamental dimensions of service attributes that were used by customers when evaluating the quality of services provided by service companies:

(1) Reliability;

(2) Responsiveness;

(3) Competence;

(4) Access;

(5) Courtesy;

(6) Communication;

(7) Credibility;

(8) Security;

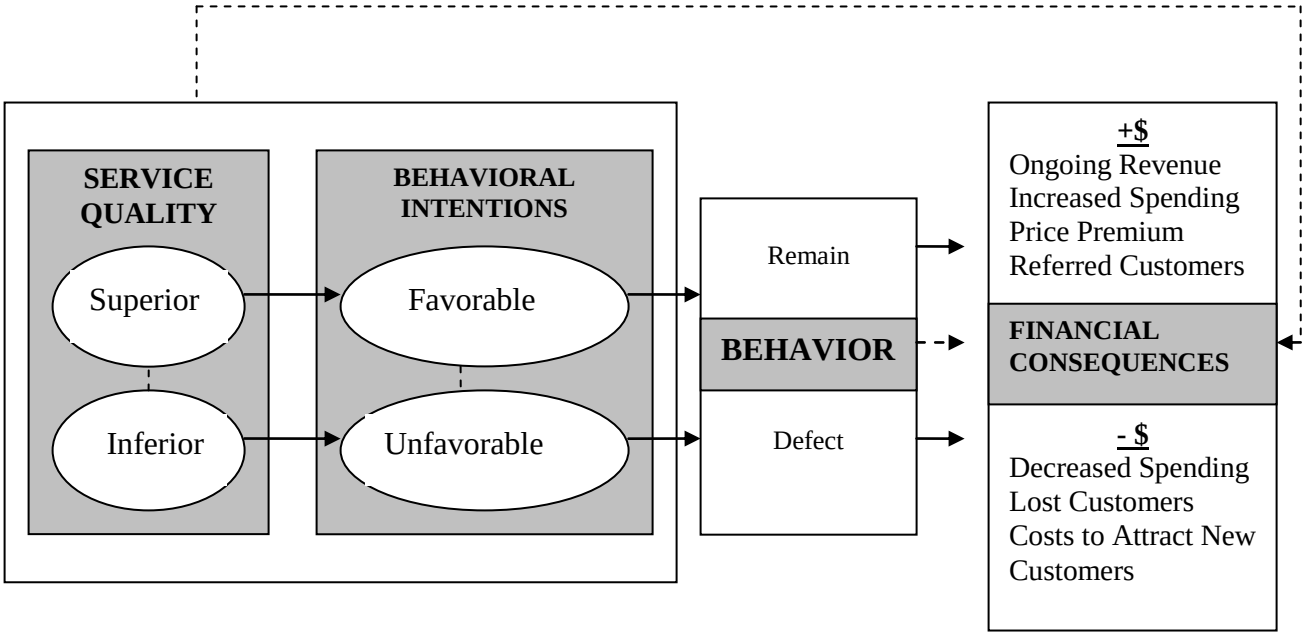
(9) Understanding/knowing the customer;

(10) Tangibles.

Consumer perceptions of quality emerge from the gap between performance and expectations (the level of quality that the consumer feels should be provided). As performance exceeds expectations, quality increases. As performance is below expectations, quality decreases. The performance-to-expectations "gaps" is the theoretical foundation of SERVQUAL. Parasuraman *et al* (1988) brought down these ten dimensions to five: reliability, assurance, tangibles, empathy, and responsiveness.

Zeithaml, Berry & Parasuraman (1996) developed a conceptual model of the impact of service quality on particular behaviours that indicate whether customers will remain with or defect from a company.

Figure 17: The Behavioural and Financial Consequences of Service Quality



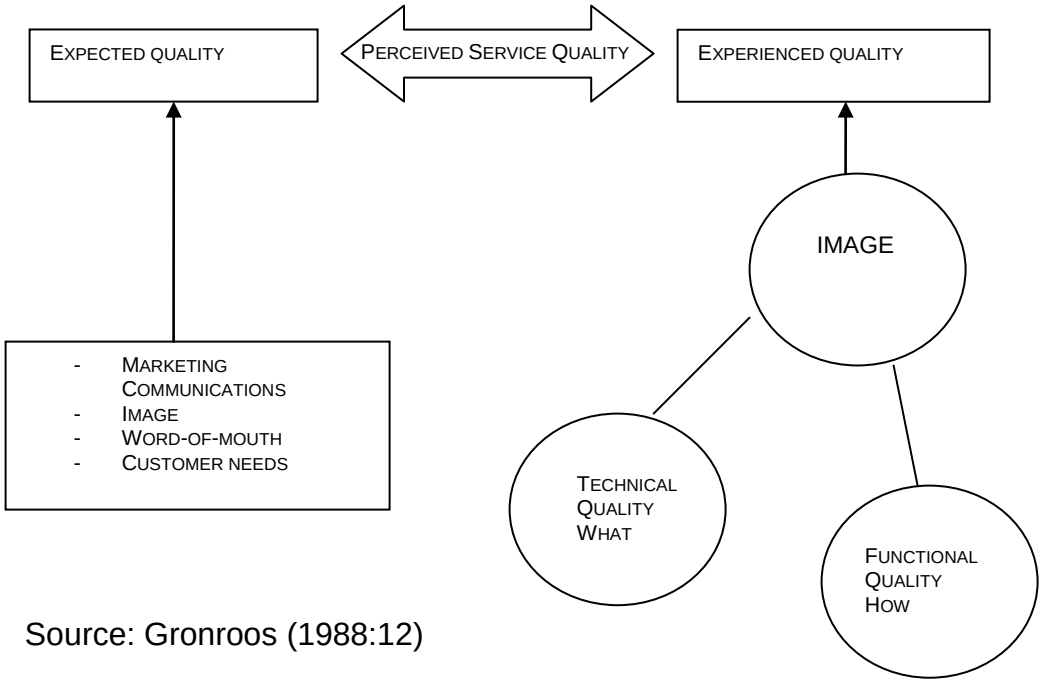
Source: Zeithaml *et al* (1996:33)

The left hand side of the model shows the individual customer and proposes a relationship between service quality and behavioural intentions. The customer assesses the service quality: when service quality assessments are high, the customer's behavioural intentions are favourable. When service quality assessments are low, the customer's behavioural intentions are unfavourable. Favourable behavioural intentions include praise of the firm by the customer, customer preference, increase in the volume of their purchases, or willingness to pay a price premium. Unfavourable behavioural intentions include customers spending less with the company, complaining, and contemplating switching to competitors.

Zeithaml *et al* (1996) undertook an empirical study among several companies to examine the relationships from the model concerning customers' behavioural intentions. Their findings show strong evidence of customers being influenced by service quality. The findings also reveal differences in the nature of the quality-intentions link across different dimensions of behavioural intentions.

A service is in general perceived in a subjective manner (Gronroos, 1988). Gronroos (1988) developed a model to show how customers perceived service quality. The quality of a service as it is perceived by the customers has two dimensions: a technical or outcome dimension and a functional or process-related dimension. Corporate and/or local image is also important and impacts on the perception of quality since customers observe the firm, its resources and its ways of operating. The corporate image can act as a filter. A customer can more easily forgive minor mistakes from a company with a favourable image than from one with a negative image. If mistakes occur often then the image may suffer. Good perceived quality occurs when the experienced quality meets the expectations of the customer. As shown in Figure 18, the expected quality depends on several elements namely market communications undertaken by the firm (advertising, public relations and sales campaign), word of mouth communication, corporate/local image and customer needs. The total perceived quality is determined by the gap between the expected and experienced quality.

Figure 18: Perceived Quality Model



Source: Gronroos (1988:12)

Du Plessis & Rousseau (2003) also recognise the subjectivity of the concept of service quality. According to Du Plessis & Rousseau (2003:186) "the way in which service quality is defined suggests that the so-called *objective* service quality does not exist" and "perceived quality is an attitude that represents an overall appraisal of the quality of a service."

2.6.1.6 Brand origin

Thakor & Kohli (1996) argue that brand origin impacts on the way the consumer perceives brands and that brand image is a key determinant of brand equity. They define brand origin as "the place, region or country to which the brand is perceived to belong by its target consumers." (Thakor & Kohli, 1996:27). This definition differs from the country of origin definition: brand origin does not refer to the location where products are manufactured, or are perceived by consumers to be manufactured.

Consumer perceptions may be different from reality namely because of ignorance, lack of origin information for a particular brand, or deliberate

information retention by companies concerned about consumer reactions to an unfavourable origin. Thakor & Kohli (1996) consider brand origin as a demographic variable, which is part of a brand's personality. According to them the brand origin concept refers to the integration of origin cues within the brand image. Brand origin may be communicated in a variety of ways, such as the copy used in the ad, the setting of the ad, and the brand name itself.

2.6.1.7 Country of origin

One definition of country of origin provided by Han & Terpstra (1988) is the product country of manufacture or assembly. Research has shown that he country of origin of a product impacts on the evaluation of products by consumers (Erickson, Johansson & Chao, 1984; Han & Terpstra, 1988; Hong & Wyer, 1989 and Kaynak & Kucukemiroglu, 1992). Hong & Wyer (1989) argue that the country of origin, like the price and brand name, is an extrinsic cue in consumer product evaluations.

Okechuku (1994) investigated the strength of the country of origin effects relative to other product attributes in four countries namely the USA, Canada, Netherlands and Germany. He studied two product categories – television sets and car radio/cassette players. The country of origin was added as a fifth attribute in his conjoint analysis. His results showed that the country of origin is often among the two or three important attributes in preference evaluations in each country. It is often as important as or more important than brand name or price.

Other researchers studied the impact of country of origin effects on services. Harrison-Walker (1995) investigated the national stereotype effects on consumer selection of a service provider and the relative effects of service provider nationality, supplemental information and consumer nationality on service provider selection. The professional service of ophthalmology was selected for the study and the latter was undertaken with a sample of students in USA, Japan, Spain and other countries. The ophthalmologists listing included five physician

names for each of four nationalities: American, Indian, Japanese and Spanish. The author used five information levels to distinguish between different types of advertising information provided. The results showed that there is no clear evidence of same-nationality bias.

Wetzels, Birgelen & Ruyter (1996) investigated the Dutch consumers' concept of ethnocentrism to ten different kinds of services provided in the Netherlands. These services included: public transport by bus, banking services, express delivery services, air travelling, travel agencies, railroad services, telecommunications, mail services, medicine-supply, and public utilities such as gas and electricity. Results obtained indicated that a consumer's ethnocentric tendencies toward services is negatively correlated with cultural openness (individuals who are more open to other cultures are less consumer ethnocentric toward services), and positively correlated with patriotism, conservatism, collectivism and age. Consumers with a higher level of education have less ethnocentric tendencies toward services.

Bruning (1997) found country of origin second only to price in a study of consumer airline preference. Consumers were found to prefer their own country's air carrier, but would switch to another nation's carrier if they received a price or service advantage. Consumers were quite sensitive to price differences between medium and low levels, less sensitive to price changes between high and medium levels.

2.6.1.8 Determinants of customer behaviour in the Internet access industry

Quality of service seems a major concern in the Internet access industry. A survey of more than 14,000 Internet users undertaken by the National Regulatory Research Institute and BIGresearch found that 47% of the respondents have complained about the quality of service to their Internet Service Provider (Pastore, 2001). Interruptions of their Internet connections are one of the most frequently cited concerns with 75% of respondents saying that they are occasionally or frequently interrupted. The quality of the Internet connections is

the most frequently mentioned reason that could motivate customers to consider switching or definitely switch. Faster data rates and lower prices are also frequently mentioned reasons (Pastore, 2001).

According to a Forrester Research Consumer Technographics North America, April, 2003 Devices & Access online study, United States and Canadian consumers when asked to identify the major services they look for when choosing an Internet Service Provider, mentioned connection reliability, access to quality customer service, spam filtering, firewall protection, availability of software blocking “pop-up” ads and home networking support (Earthlink, 2003).

2.6.2 The Purchase Process

Sheth *et al* (1999) describe the activities that occur during the purchase process.

- Problem recognition

The purchase decision process starts when the customer recognises a problem to be solved or a need to be satisfied. Problem recognition can occur either through an internal stimulus or an external stimulus.

- Information search

The customer then searches for information about various alternative ways of solving the problem. Sources of information include marketer sources (advertising, salesperson, products/services brochures, and web sites) and non-marketer sources (Personal (friends, past experience); independent public information like consumer reports, products/services experts). The amount of search efforts of the customer will depend on his perceived risk, the degree of involvement, familiarity and expertise, time pressure, whether the product or service is functional versus expressive nature and information overload.

- Alternative evaluation

The customer assesses the different alternatives and selects one of several alternatives.

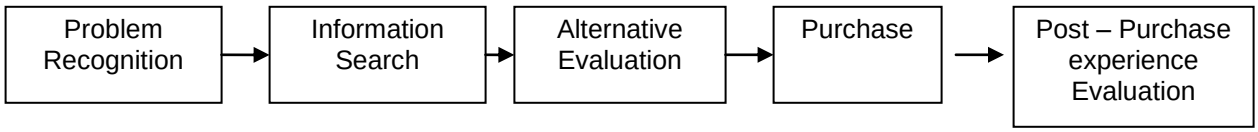
- Purchase

The customer buys the selected alternative.

- Post purchase experience

The experience of buying and using the product provides information that the customer will use in future decision making.

Figure 19: The Customer Decision-Making Process



Source: Sheth *et al* (1999:520)

Lovelock's (2001) description of the purchase process for services does not differ much from that of Sheth *et al* (1999). According to Lovelock (2001), the customer goes through several stages in his purchase of services:

- Awareness of need

  The individual recognises he has a need he wants to satisfy.

- Information search

  The extent of the information search will depend on the type of purchase to be effected. If the purchase is routine and low risk, customers will quickly select and use a specific service provider. When the service is about to be used for the first time or more important, they may conduct an intensive information search.

- Evaluation of suppliers

  The customer identifies potential suppliers and then weighs the benefits and risks of each option before making a final decision.

- Request of service

  After the evaluation stage, the customer then requests the service from the selected supplier.

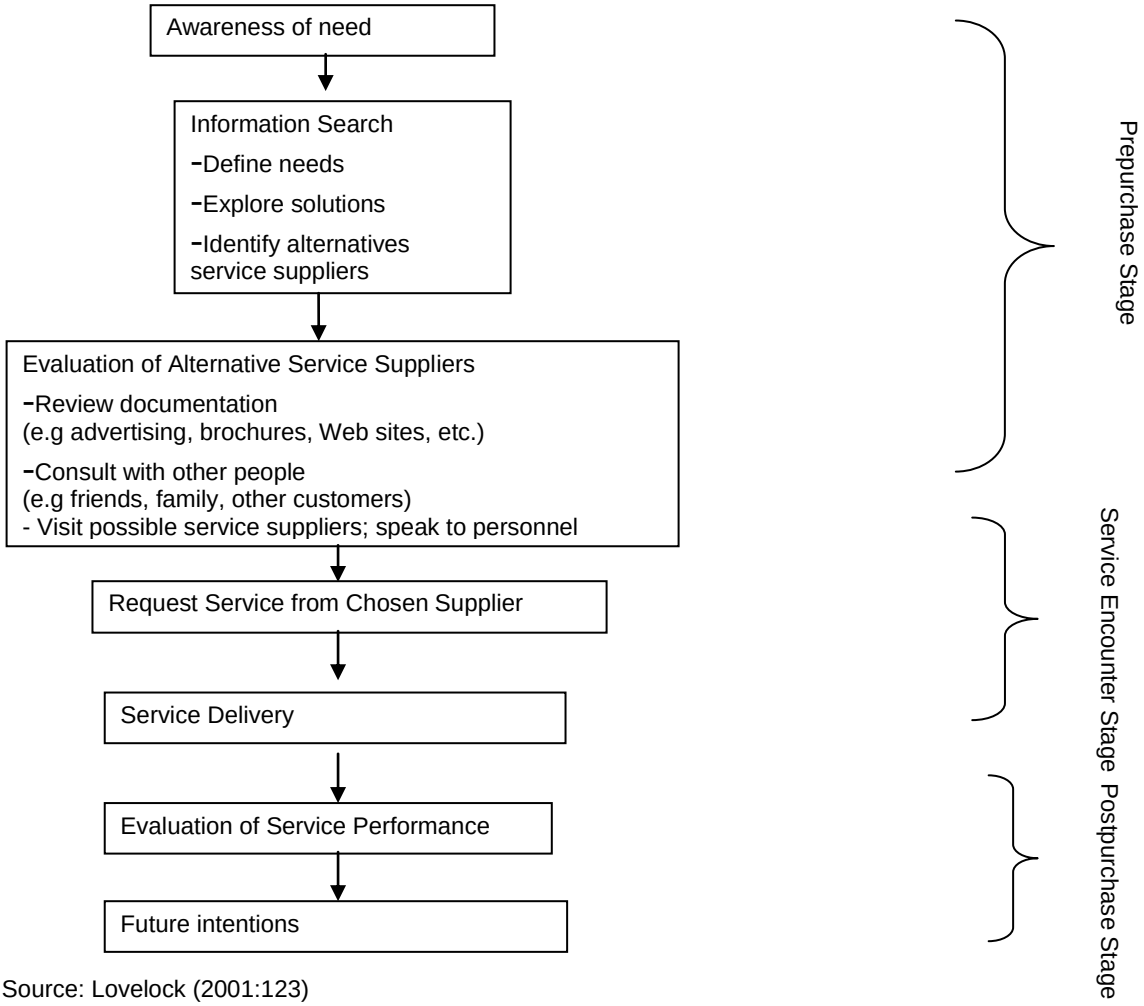
- Service delivery

  In the service delivery stage the service is delivered to the customer.

- Evaluation of service delivery

During the post-purchase stage, customers evaluate service quality and their satisfaction or dissatisfaction with the service experience. The outcome of this process will affect their future intentions, such as whether to stay loyal or not.

Figure 20: The Purchase Process for Services



Source: Lovelock (2001:123)

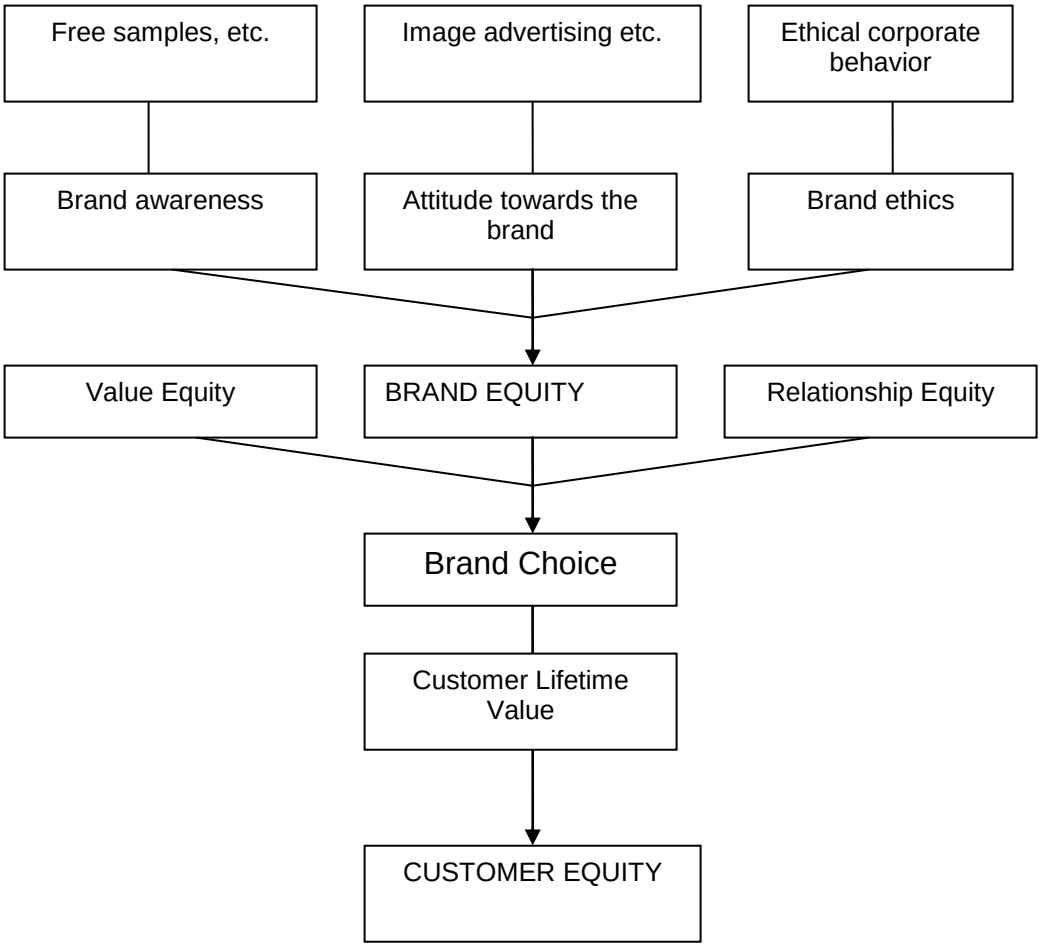
2.6.3 Brand equity in the context of customer equity

Rust, Zeithaml & Lemon (2004) argue that, though most managers agree that the focus should be on the growth of the customer lifetime value, this is not put into practice and the centre of attention remains the brand. The authors propose the reinvention of brand management. The brand should be put at the service of a

larger goal: customer equity. Companies should aim at maximising customer lifetime value "the net profit a company accrues from transaction with a given customer during the time the customer has a relationship with the company" (Rust *et al,* 2004:112).The focus must therefore be on customer equity "the sum of the lifetime values of all the firm's customers, across all the firm's brands" (Rust *et al*, 2004:113) rather than on brand equity. Rust *et al* (2004) propose a model for measuring brand equity and customer equity.

A customer's lifetime value is driven by choices. Those choices are driven by three considerations: value equity – the objectively considered quality, price and convenience of the offering; brand equity- the customer's subjective assessment of a branded offering's worth above and beyond its objectively perceived value; and relationship equity factors in switching costs – the customer's reluctance to go elsewhere because of learning curves, user-community benefits or other considerations. The first challenge is to determine the relative influence of these three drivers on a company's customer equity. The next challenge is to determine what drives brand equity in a particular company. These drivers include elements like consumers' awareness of the brand, their attitudes towards the brand and their perceptions of the company's ethics and corporate citizenship. The relative weight of each of these elements should be found. The final step is to link statistically the customer equity drivers to customer lifetime value. This amounts to estimating how consumer utility or the consumer 's perception of value from the transaction is affected by these drivers, how that level of consumer utility is related to switching patterns and what those switching patterns mean for projected future choice and what these projections of future choice yield in customer lifetime value.

Figure 21: Rust, Zeithaml & Lemon's Brand Equity Model



Source: Rust *et al* (2004)

3 RESEARCH PROPOSITIONS

The research problem has been defined as “Does brand equity exist in the Mauritian Internet industry and what is its degree of influence on the customer’s purchase behaviour?”

It is shown from the literature review that marketing researchers and authors recognise the importance of branding for services. Opinions regarding the type of marketing and branding strategies to be adopted however differ. Some researchers put forward the view that products/ tangible goods’ branding principles can be applied to services branding (Levitt, 1981; Levy, 1996). Others advocate a tailored approach to services branding (McDonald *et al,* 2001). Others argue that branding is more important in services (Onkvisit & Shaw, 1989; Bharadwaj *et al*, 1993). Others propose that the importance of brand equity varies according to the attributes (search, experience or credence) of the services (Bharadwaj *et al*, 1993). Others put forward the view that the attributes of services do not play a significant role in the importance of branding (Krishnan & Hartline, 2001). Matear *et al* (2004) find that brand position contributes to service firms’ performance.

The importance of the brand on the customer decision making process has also been recognised. Sproles & Kendall (1996) include brand consciousness and brand loyal orientation among the eight mental characteristics of consumer decision making. Bennett’s (1997) buyer disposition concept includes branding under its second criteria - Viability. O’Cass & Grace (2003) include brand name in their most important brand dimensions for services during the customer decision-making process. Sheth *et al* (1999) recognises the influence of brand awareness, brand beliefs and brand attitudes on customer choice. Doyle (1998) includes the manufacturer’s name and reputation and the brand appearance in the product’s added values.

The first research proposition is as follows:

Research Proposition 1:

- The Brand is a major influencing factor in the selection of an Internet Service Provider.

Many authors have emphasised the ability of a strong brand to command a higher profit margin and price premium (Aaker, 1991; Lassar *et al*, 1995; Doyle, 1998; Jackson, 1999 and Keller, 2003).

Research proposition 2 is:

- Brand equity exists in the Internet access industry in the form of customers' willingness to pay a price premium.

The sources of brand equity that are obtained from the literature review are as follows:

- Brand loyalty (Aaker, 1996)
- Brand awareness (Aaker, 1996; Berry, 2000 and Keller,1993, 2003)
- Brand associations/brand image (Aaker, 1996; Berry, 2000 and Keller,1993, 2003)
- Perceived quality (Aaker, 1996)

Perceived quality is a brand association that has been brought up to the level of a brand asset by Aaker (1996). Zeithaml *et al* (1996) emphasise the importance of service quality perceptions on the customer behavioural intentions to remain with or defect from a service company. Arora & Stoner (1996) argue in one of their researches that service quality influences the intention to use a service. Keller (2003) recognises that consumer beliefs about the various dimensions of a product trigger the perceptions of quality, which in turn influence the attitudes and behaviour of the consumer towards a brand.

The importance of brand awareness has been recognised by Aaker (1996), Sheth *et al* (1999), Berry (2000) and Keller (1993, 2003).

Research proposition 3 is:

- Perceived quality and brand awareness are the two most important sources of Brand Equity.

Berry (2000) argues that the primary source of brand awareness is the company's controlled communications (advertising, service facilities, name and logo). Advertising contributes to building up the brand associations and brand awareness (Cobb-Walgren *et al*, 1995). According to Farr (1996), advertising contributes to putting a new brand on the map and brand awareness is one of the first steps necessary for a successful product launch.

Research proposition 4 is:

- Advertising is the most effective medium for building brand equity.

4 RESEARCH DESIGN

4.1 Introduction

Two types of research methods were selected for the purpose of this study: a qualitative exploratory research and a quantitative research. Both researches were undertaken among decision-makers in the Internet industry.

4.2 The qualitative research

4.2.1 Objectives of the qualitative research

The objectives of the qualitative research were to:

1) Have a broad overview of the customer purchase behaviour in the Internet access industry.

2) Determine the key decision criteria in customer choice as to be able to supplement the key service attributes to be considered for the conjoint analysis.

4.2.2 Population

As at December 2004 the total number of Dial up Internet residential customers in Mauritius was estimated by one of the major Internet Service Providers to be 50 000 (Telecom Plus, 2004). This Internet Service Provider (Telecom Plus) held as at December 2004 a market share of 92% on the Internet market (Mauritius Telecom, 2005). Dial up Internet access made up 95% of the total type of access technology used by residential customers in Mauritius.

4.2.3 Sampling size and methodology

A convenience sample of 10 persons was taken for the qualitative research. This sample was extracted from the residential dial up customer database of Telecom Plus Ltd.

4.2.4 Research Instrument

A semi-structured questionnaire was used for the qualitative research. A few open-ended questions were asked to the respondents in order to:

1) Investigate the level of awareness of product and corporate brands.

2) Investigate the different criteria used for selection of an Internet Service Provider and validate the attributes to be used during the conjoint analysis.

3) Pinpoint the most appropriate channel of communication that may have influenced the level of awareness of the brands. This helped in devising the quantitative research questionnaire.

A sample of the research instrument used for the qualitative research can be seen in Appendix A.

4.2.5 Data collection method

The qualitative research was done through face to face interviews conducted by the researcher during the month of December 2004.

4.2.6 Method of analysis

The data obtained from the qualitative research was content analysed.

4.2.7 Results

4.2.7.1 Determinants of customer decision-making

The literature review provided five different attributes that were to be used in conjoint analysis:

- Brand
- Price
- Performance of network
- Reliability of network
- Brand origin

The qualitative survey yielded the following results:

- Brand origin was not cited as a decision-making criterion for the choice of an Internet Service Provider: the brand was not mentioned as one criterion. However company reputation which may be considered as part of brand equity was mentioned.

The factors that were mentioned as determinants of customer decision making were:

- Price

- Performance of network (Speed of connection/download)

- Reliability of network (permanence of the connection to the Internet)

- Value added services (mail and other services)

- Technical assistance

4.2.7.2 Level of awareness of corporate and product brand

Respondents in the qualitative survey had higher awareness of the corporate brand than of the product brand.

4.2.7.3 Most appropriate marketing communications

The type of marketing communications that was most frequently mentioned by the respondents was advertising.

4.3 The quantitative research

4.3.1 Objectives of the quantitative research

A quantitative survey followed the explorative research. Its objectives were to provide an answer to the research questions mentioned previously.

4.3.2 Population

As at December 2004 the total number of Dial up Internet residential customers in Mauritius was estimated by one of the major Internet Service Providers to be 50 000 (Telecom Plus, 2004). This Internet Service Provider (Telecom Plus) held

as at December 2004 a market share of 92% on the Internet market (Mauritius Telecom, 2005). Dial up Internet access made up 95% of the total type of access technology used by residential customers in Mauritius.

4.3.3 Sampling size and methodology

A sample of 100 Internet customers was taken for the quantitative research. This sample was extracted from Telecom Plus' residential dial up Internet customer database of December 2004. A random sampling method was used to select the sample. After the conjoint treatment some fifteen respondents had to be removed from the sample since their answers could not be treated by conjoint because of missing values or they were unable to distinguish between the conjoint cards. The final sample on which analysis has been done is 85.

4.3.4 Validity and reliability

4.3.4.1 Validity

Validity refers to the extent to which an instrument measures what it is intended to measure and provides adequate coverage of the topic under study.

External validity refers to the extent to which the results of research can be generalised to the population. A research has external validity when the sample has been selected randomly and is representative of the population. The sample used in this research was convenient in nature since respondents were extracted from the database of customers of one Internet Service Provider. A random sampling method was however used to select respondents within this database.

Content validity refers to "the degree with which the content of a test or questionnaire covers the extent and depth of the topics it is intended to cover" (Lewis, 1999:6). The questionnaire in the quantitative phase was structured so as to provide the most complete set of information. An exploratory qualitative research was first undertaken to determine the elements of which were made up the topics under study (awareness, determinants of customer choice, channels of communication). Specific attributes to be tested during the conjoint design and means of awareness were selected after the exploratory qualitative research.

Pre-testing of the quantitative survey questionnaire was made among 10 respondents in order to ensure that the questionnaire was understood by and was relevant for the respondents.

4.3.4.2 Reliability

Reliability is the consistency of your measurement or the degree to which an instrument measures the same way each time it is used under the same condition with the same subjects. The manner in which accuracy of the measurement can be increased is by using well established measures. The research procedure used during this research was based on:

1) A standard questionnaire.

2) A reliable and already proven technique (conjoint analysis).

3) The use of multiple choice answers and Likert scales.

4.3.5 Research instrument

The questionnaire used for the quantitative research was divided into three parts:

Part 1 consisted of both open-ended and multiple choice questions. Its objectives were to:

1) Investigate the level of awareness of corporate brands and service brands.

2) Investigate the type of marketing communications that has influenced the building of brand awareness.

3) Investigate the perceived quality of each brand.

4) Investigate the level of brand loyalty.

5) Investigate the willingness of the customer to refer its brand to others.

Part 2 of the questionnaire investigated the demographic profile of the respondents. All questions asked were multiple choice ones.

Part 3 of the questionnaire contained 25 conjoint cards. Its objective was to measure the level of customer preference with regards to several service attributes.

The questionnaire was pre-tested with 10 respondents. It should be noted that to facilitate the comprehension of the questionnaire by respondents, the French language was used. All questionnaires were made and administered in French (See Appendices D and E for English and French version of questionnaire).

4.3.6 Data collection methods

Two data collection methods were selected for the quantitative research: face to face interviews and mailing of the questionnaires. Sixty respondents were interviewed through face to face interviews conducted by the researcher and two well trained research assistants. The response rate for the mailing was 20% (a total of 40 persons responded). Respondents were provided with a return envelope with the postage fee already taken care of. One week after sending the questionnaire, the researcher called each respondent in order to persuade them to send back the questionnaire.

Two letters were attached to the mailed questionnaire or were given to the research assistants. One of these two letters was signed by the researcher and the other one was signed by a representative of De Chazal Du Mée Business School. Both letters served as proof to the respondents that this research was made in the context of a Master in Business Administration. Respondents were more easily persuaded to answer when the research is put into a study context. Examples of the letters are shown in Appendices B and C.

The fieldwork took place from December 2004 to March 2005.

4.3.7 Method of analysis

4.3.7.1 Content analysis

The first and second parts of the questionnaire were content analysed.

4.3.7.2 Conjoint analysis

4.3.7.2.1 An overview of conjoint

The third part of the questionnaire was devoted to the conjoint analysis. Conjoint analysis is a marketing research tool that had initially been developed by mathematical scientists in the 1960's and 1970's (Orme, 2004). The term "conjoint" is derived from the verb "to conjoin" meaning to join together (Orme, 2004). Since the mid-1970's, conjoint analysis has experienced a strong growth (Hair, Anderson, Tatham & Black, 1995) and this methodology is applied in a variety of areas - fast moving consumer goods (FMCG), technology products and electronics, durables (especially automotive), and service-based products (such as cell phones, credit cards, banking services) (Orme, 2004). Conjoint analysis has been considered very useful for assessing customer-based brand equity (Green & Srinivasan, 1978) and an excellent tool for measuring the value of brand names in relation to competing brands and providing information about the strength of a brand in comparison to other product features (www.dsresearch.com/library/conjoint/conjoint.htm).

Conjoint analysis describes customer purchase decision. It measures the trade-offs that people make in choosing between products and service providers (www.populus.com). One of its basic assumptions is that a product can be broken down into its component attributes (www.populus.com). Respondents are therefore asked to evaluate product profiles that are made up of multiple attributes (factors). Specific values are assigned to each attribute (levels).

Traditional survey methods, in which respondents are asked to indicate their level of preference or rate different product attributes, cannot place a value on the preference expressed. Conjoint analysis extrapolates the respondents' preference to a quantitative measurement through the utilities function. "Utilities are simply numerical representations that express the value consumers place on each level" (MarketVision Research, 1997:2). The value that individuals place on any product is equivalent to the sum of the utility that they derive from all the attributes making up a product. The preference for a product and the likelihood to

purchase it is in proportion to the utility an individual gains from the product (www.populus.com).

4.3.7.2.2 Determining the attributes and levels

The attributes for the conjoint design were selected following the qualitative research. The different attributes and levels of the attributes (the specific values of each attribute) are shown in the table below. The corporate brand and product brand were considered as a single attribute. For one Internet Service Provider (Telecom Plus) the name of the mother company was also included since during the qualitative phase, the name of the mother company was often mentioned in lieu of the name of the Internet Service Provider.

Table 6: Attributes and levels

Attributes (Factors)	**Levels**			
Corporate/Product brand	Mauritius Telecom/Telecom Plus/Servihoo	DCL (Data Communications Ltd.)/Smartnet/DCL Internet	Network Plus/NetAccess	Mauripost/Clickpost
Price per minute	20, 35, 50 and 60 cents			
Performance of network (speed of download of web pages)	Speed of download: Web pages appear quickly; emails download quickly Web pages do not appear all at once; emails download reasonably fast Web pages takes a long time to appear; emails take a while to download			
Reliability of network (availability, permanence of the connection)	Frequency of interruption of connection: Connection always available Connection interrupted about once per month Connection interrupted about once per week Connection interrupted several times per week			
Value added services (security services, mail/mail capacity etc)	Availability /non availability of value added services			
Technical assistance	Not available; Available during office hours; Available 24 hours everyday			

4.3.7.2.3 The model

The additive model was used, that is customer added up the sum of the part-worths (levels of attributes) to get the value for a product profile. This rendered the selection task by the respondents easier.

4.3.7.2.4 The presentation method

The number of attributes was six, therefore the full profile approach in which all attributes were investigated at one go was used. However, because of the total number of attributes and levels, it has been considered more appropriate to use a fractional factorial design. In a factorial design all combinations of levels are investigated during the conjoint experiment. In a fractional factorial design only a subset of the possible combinations of levels are being investigated. The use of a fractional factorial design limits the number of product profiles and is meant to prevent fatigue and confusion on the respondents' part. Fatigue and confusion may occur when the respondents are faced with a large number of product profiles to evaluate. If a factorial design had been used, respondents would have had 4x4x3x4x2x3 that is 1152 product profiles to evaluate. The hypothetical product profiles were presented to the respondents in the form of conjoint cards. Twenty-five conjoint cards were used for the purpose of this study.

4.3.7.2.5 Measure of customer preference

A rating measure was used for measuring customer preference that is respondents were asked to rate the different stimuli (product profiles). They had to assign a figure between 0 and 10 to indicate their purchase likelihood.

4.3.7.3 Data analysis

The raw data obtained were analysed by the Number Cruncher Statistical software. The conjoint analysis part was made with Sawtooth software.

5 PRESENTATION OF THE QUANTITATIVE RESEARCH RESULTS

5.1 Introduction

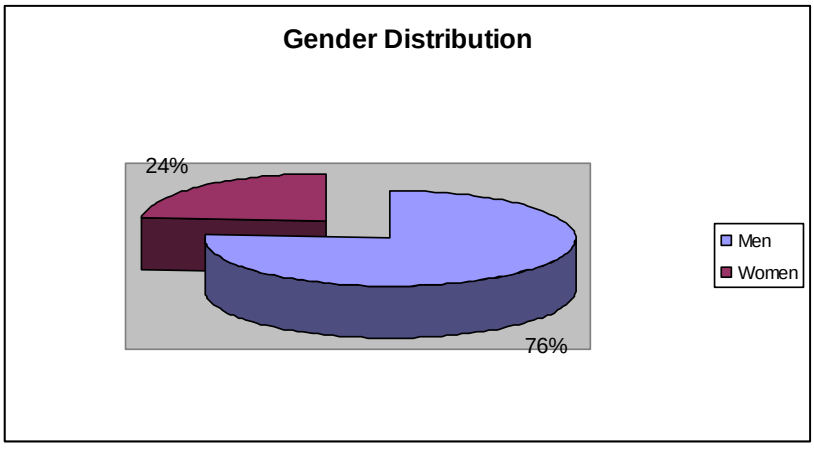
The following chapter presents the results obtained during the quantitative survey. The demographics characteristics of the sample will first be presented. Then the first part of the questionnaire which was devoted to the investigation of brand awareness, brand loyalty, quality perceptions of respondents and means of creating brand awareness will be presented. Finally the results from the conjoint analysis will be presented. The conjoint importance and conjoint utilities obtained will be presented. An analysis of the conjoint results according to the demographic profile of respondents will also be made. Statistical testing will be performed to test the difference between the brand group and the other attributes' groups. The brand-price relationship will then be tested with a correlation technique. Subsequently the various sources of brand equity will be investigated through descriptive statistics and statistical testing.

5.2 Demographics of sample

5.2.1 Distribution of the sample by gender

Respondents were mostly men. 76% of respondents were men in comparison to 24% women.

Figure 22: Gender distribution



5.2.2 Age distribution

Respondents were mostly found in the 18 to 49 age groups (88% of respondents). The age groups “less than 18 years old” and “more than 50 years old” accounted for only 4% and 8% respectively of respondents.

Table 7: Age distribution of sample

Age Group	Frequency	%
< 18 yrs	3	4
18-29 yrs	24	28
30-39 yrs	30	35
40-49 yrs	21	25
50-59 yrs	5	6
> 60 yrs	2	2

5.2.3 Income group distribution

The higher percentage of respondents (47%) was found in the Rs10001 to Rs30000 income group. Higher income groups accounted for 22% of respondents. Thirteen percent of respondents (13%) had a monthly income of less than Rs10000. Eighteen percent of respondents (18%) refused to provide their income groups since they considered that it was confidential information.

Table 8: Income distribution of sample

Monthly Income (Rs)	Frequency	%
5 000 or less	1	1
5 001 to Rs10 000	10	12
10 001 to 20 000	20	24
20 001 to 25 000	12	14
25 001 to 30 000	8	9
30 001 to 35 000	5	6
35 001 to 40 000	6	7
40 001 to 45 000	0	0
45 001 to 50 000	1	1
More than Rs50 000	7	8

5.3 Brand awareness

Brand awareness for both the product brand and the corporate brand was investigated in part I of the quantitative research questionnaire. Spontaneous brand recall was investigated when respondents were asked to name the Internet Service brand and the Internet Service Provider which they knew or were aware of. The survey results are shown in the table below.

Table 9: Awareness of corporate brand

Corporate Brand	Frequency	%
Telecom Plus/Mauritius Telecom	65	77
Data Communications Ltd. (DCL)	42	49
Network Plus	30	35
Mauripost	20	24

Many respondents named either Mauritius Telecom or Telecom Plus (77%). Telecom Plus is the current market leader with more than 90% market share. There is therefore a higher rate of awareness for the market leader. Data Communications Ltd. takes the second place with a level of awareness of 49% and Network Plus the third position with 35% awareness level. The Internet Service Provider with the lowest awareness level is Mauripost with 24%.

Spontaneous brand recall was also investigated for the service brand. Table 10 shows the awareness for each product brand. The market leader brand Servihoo (the brand of Telecom Plus Ltd.) is first with 39% respondents mentioning that brand. Awareness levels for the other service brands are relatively low with 13% for Clickpost, 11% for Smartnet and NetAccess and 5% for DCL Internet.

Table 10: Awareness of service brand

Service Brand	Frequency	%
Servihoo	33	39
DCL Internet	4	5
Smartnet	9	11
NetAccess	9	11
Clickpost	11	13

5.4 Means of awareness creation

The means through which awareness for both corporate and service brands was created were investigated in the first part of the questionnaire. Respondents were asked how they had heard about the brands they mentioned in the spontaneous brand recall section.

The results are shown below:

Table 11: Means of awareness creation

Means of awareness	Frequency	%
Advertisement in newspapers/magazines	49	58
Articles in the press	42	49
Relatives, friends, colleagues	38	45
Advertisement on Television	37	44
Advertisement on radio	26	31
Billboards	26	31
Advertisement on the web	18	31
News on radio/television	22	26
Advertisement on bus	11	13
Advertisement on bus stops	11	13
Web sites of ISPs/web sites	9	11
Brochures	2	2
Door to door selling	1	1
Trade fairs	1	1

The first four most frequently mentioned means of awareness creation are press advertising with 58% of respondents, press articles with 49%, the “friends,

relatives, colleagues" group with 45% of respondents, and television advertising with 44% of respondents.

A more detailed analysis was made when the means of awareness for each corporate brand were examined. For Mauritius Telecom, the first three means of awareness were the "friends, colleagues, relatives" with 63%, television advertisement with 52% and finally advertisement in newspapers and magazines with 48% of respondents. For Telecom Plus, the first three most frequently cited means of awareness were advertisement in newspapers/magazines with 55%, "friends, colleagues and relatives" with 50% and bus stop advertising with 37%. For Data Communications Ltd., the most frequently cited means of awareness are advertisement in newspapers/magazines with 60%, press articles with 50% and "friends, colleagues and relatives" with 45%. Newspapers/magazines advertisement is the most frequently cited means of awareness for Network Plus and Mauripost with 50%. Advertisement on television and "friends, colleagues, relatives" are the second most frequently mentioned means of awareness for Network Plus and Mauripost respectively. "Friends, colleagues and relatives" ranks third for Network Plus with 40% and press articles rank third for Mauripost with 35%.

Table 12: Means of awareness per corporate brands

	Mauritius Telecom (%)	**Telecom Plus (%)**	**Data Communications Ltd. (%)**	**Network Plus (%)**	**Mauripost (%)**
Advertisement in newspapers/magazines	48	55	60	50	50
Advertisement on television	52	5	38	43	30
Advertisement on bus stop	7	37	5	10	5
Friends, colleagues, relatives	63	50	45	40	55
Press articles	37	34	50	37	35
Advertisement on radio	19	16	17	10	10
Billboard	19	24	29	30	25
Advertisement on the bus	4	11	7	7	5
Advertisement on the web	0	5	7	13	0
News on Television/radio	22	11	12	10	15
Web sites/web sites of ISPs	0	0	5	0	0

5.5 Means through which respondents heard about their Internet Service Provider

The means through which the respondents heard about their current Internet Service Providers were also investigated. Advertisement in newspapers/magazines and "relatives/friends/colleagues" were mentioned by 53% of respondents, advertisement on television by 48% of respondents and articles in the press by 39% of respondents.

Table 13: Means through which respondents heard about their Internet Service Provider

Means of awareness	Frequency	%
Advertisement in newspapers/magazines	45	53
Relatives, friends, colleagues	45	53
Advertisement on Television	41	48
Articles in the press	33	39
Billboards	19	22
Advertisement on radio	14	16
News on radio/television	13	15
Advertisement on the web	6	7
Advertisement on bus	6	7
Advertisement on bus stops	6	7
Web sites of ISPs/web sites	2	2
Magazines	1	1
Door to door selling	1	1
Children	1	1

5.6 Perceived quality

5.6.1 Frequency table for the Likert Scale

Perceived quality was investigated through the use of a Likert scale. Respondents were requested to indicate their level of agreement on a five-point agree-disagree scale. The following set of statements on each Internet Service Provider was investigated:

- Is trustworthy

- Offers good value for money

- Is innovative

- Offers good service

- Is customer-focussed

The results are examined for each statement. The percentage calculated in the table below shows the level of agreement obtained among respondents that answered for each Internet Service Provider. Many respondents did not know sufficiently the Internet Service Provider to formulate an opinion on the statements mentioned above.

1) The “Trustworthy” statement

Telecom Plus achieved a higher rate of agreement with 89% of respondents. Data Communications Ltd. and Mauripost achieved 74% and 75% rating respectively. The Internet Service Provider with the lowest rate of agreement is Network Plus with 62%.

2) The “Value for money” statement

Telecom Plus achieved the lowest level of agreement with only 67% of respondents agreeing to that statement. Mauripost achieved the highest level of agreement with 88%. Data Communications Ltd. and Network Plus achieved 73% and 71% respectively.

3) The “Innovative” statement

Telecom Plus, Data Communications Ltd. and Mauripost achieved more or less the same level of agreement with 72%, 73% and 75% respectively. Network Plus was the Internet Service Provider with the lowest rating on that statement (66% of respondents).

4) The “Good service” statement

Telecom Plus had the highest level of agreement with 79%. Data Communications Ltd. and Network Plus had 76% and 66% respectively. Mauripost had the lower rating with 54% of respondents agreeing to that statement.

5) The “Customer focussed” statement

Mauripost had the higher agreement rating with 93% of respondents, Telecom Plus and Data Communications Ltd. had more or less the same rating with 74% and 76% of respondents respectively. Network Plus had the lowest rating with 69%.

Table 14: Frequency tables for levels of agreement for each statement

	Count of respondents	Disagree strongly (%)	Rather disagree (%)	Neither agree nor disagree (%)	Rather Agree (%)	Strongly Agree (%)
Telecom Plus						
Is trustworthy	84	4	6	1	65	24
Offers good value for money	82	10	18	5	56	11
Is innovative	79	8	14	6	59	13
Offers good service	84	2	12	7	65	13
Is customer focussed	81	1	17	7	60	14
Data Communications Ltd.						
Is trustworthy	35	6	14	6	69	6
Offers good value for money	30	13	7	7	63	10
Is innovative	33	6	18	3	64	9
Offers good service	29	3	17	3	72	3
Is customer focussed	29	10	10	3	72	3
Network Plus						
Is trustworthy	34	12	15	12	47	15
Offers good value for money	34	9	9	12	59	12
Is innovative	32	16	9	9	53	13
Offers good service	29	10	14	10	52	14
Is customer focussed	32	16	9	6	53	16
Mauripost						
Is trustworthy	16	6	13	6	50	25
Offers good value for money	17	0	6	6	71	18
Is innovative	16	6	13	6	25	50
Offers good service	13	8	8	31	38	15
Is customer focussed	14	0	0	7	86	7

Many respondents could not formulate an opinion on Data Communications Ltd., Network Plus and Mauripost. The percentage of respondents who could not voice out an opinion varied between 58% to 66 % for Data Communications Ltd., 60% to 65% for Network Plus and 80% to 84% for Mauripost.

5.6.2 Rescaling the Likert Scale

Likert scales are often considered by analysts as behaving in an interval fashion. According to Bendixen & Sandler (1995), this assumption is not justified. Likert scales data are ordinal. Ordinal level data are data that can be arranged in some order but the differences between data values are meaningless or cannot be determined. Arithmetic calculations like the mean or standard deviation cannot be performed on ordinal level data. The ordinal level data of the Likert scale must therefore be transformed into interval level data through correspondence analysis so that descriptive statistics can be performed. Correspondence analysis is "a multivariate technique that allows for the geometric (usually graphical) representation of a contingency table in low-dimensional (usually two-dimensional) space" (Bendixen & Sandler, 1995: 33). Correspondence analysis can be used to rescale ordinal level data into interval level data. This is achieved by "rescaling the Euclidean distance between the scale points calculated from the co-ordinates on the first two principal axes of the correspondence analysis" (Bendixen & Sandler, 1995: 31).

The rescaling procedure, as per Bendixen & Sandler (1995), is as follows:

1. Calculating the Euclidean distance between the scale points;

2. Apportioning this distance across the intended "length" of the scale;

3. Recalculating the numerical values of the scale points.

The distance between the scale points are examined in standard co-ordinates, i.e. "the scale points are treated as the apices within which each construct are contained" (Bendixen & Sandler, 1995:40). This was done by dividing each principal co-ordinate by the square root of the eigenvalue of the axis.

The Euclidean distance between the two points P and Q in a 2-dimensional space is given by

Equation 2

$d_{pq} = SQR[(X_p-X_q)^2 + (Y_p-Y_q)^2]$

Where d_{pq} = distance between points P and Q;

X_p, X_q=the coordinates of P and Q on the X-axis

Y_p,Y_q- the co-ordinates of P and Q on the second axis

The rescaled distance between the points is:

Equation 3

$D_{pq}= D_{pq}L/T$

Where D_{pq} = the rescaled distance between points P and Q

d_{pq} = the calculated Euclidean distance between points P and Q

L =total length of the new scale

T=total of the Euclidean distances between all scale points

The detailed rescaling procedure for each brand is shown in Appendix F. The nominal values and their respective rescaled values are shown below.

Table 15: Nominal and rescaled values of the Likert Scale

Level of agreement	Nominal values	Telecom Plus	Data Communications Ltd.	Network Plus	Mauripost
Strongly disagree	1	1	1	1	1
Rather disagree	2	2.71	2.35	2.44	1.59
Neither agree nor disagree	3	3.38	3.28	3.44	2.83
Rather agree	4	4.43	3.76	4.27	4.11
Strongly agree	5	5	5	5	5

5.6.3 Descriptive statistics

After having made the rescaling, descriptive statistics for each statement per brand were made using the descriptive statistics function on the Number Cruncher Statistical Software (NCSS). Results are shown in the table below.

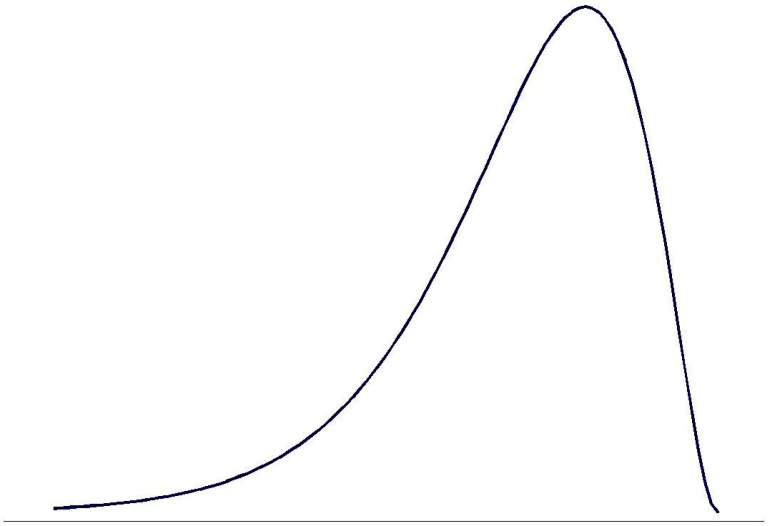
Table 16: Descriptive statistics for each statement

Statement	Count	Mean	Median	Mode	LCL 95%	UCL 95%	Std Deviation	Standard Error
Telecom Plus								
Is trustworthy	84	4.33	4.43	4.43	4.15	4.51	0.83	0.09
Value for money	82	3.79	4.43	4.43	3.53	4.05	1.12	0.13
Is innovative	79	3.93	4.43	4.43	3.69	4.18	1.10	0.12
Offers good service	84	4.14	4.43	4.43	3.96	4.32	0.83	8.00364E-02
Is customer focussed	81	4.09	4.43	4.43	4.27	4.43	0.82	0.11
Data Communications Ltd.								
Is trustworthy	35	3.44	3.76	3.76	3.15	3.74	0.86	0.15
Value for money	30	3.39	3.76	3.76	2.98	3.80	1.10	0.2
Is innovative	33	3.43	3.76	3.76	3.09	3.76	0.94	0.16

Offers good service	29	3.45	3.76	3.76	3.16	3.74	0.77	0.14
Is customer focussed	29	3.35	3.76	3.76	2.99	3.72	0.96	0.18
Network Plus								
Is trustworthy	34	3.60	4.27	4.27	3.19	4.10	1.24	0.22
Value for money	34	3.81	4.27	4.27	3.42	4.19	1.10	0.19
Is innovative	32	3.60	4.27	4.27	3.13	4.1	1.30	0.23
Offers good service	29	3.70	4.27	4.27	3.24	4.15	1.10	0.22
Is customer-focussed	32	3.64	4.27	4.27	3.17	4.13	1.33	0.24
Mauripost								
Is trustworthy	16	3.74	4.11	4.11	3.05	4.43	1.29	0.32
Value for money	17	4.04	4.11	4.11	3.6	4.45	0.80	0.19
Is innovative	16	3.97	4.56	5	3.22	4.7	1.41	0.353
Offers good service	13	3.42	4.11	4.11	2.68	4.159	1.22	0.339
Is customer focussed	14	4.08	4.11	4.11	3.88	4.3	0.43	0.12

An examination of the mean, mode and median values for each statement reveals that most of the distributions are negatively skewed, with the value of the median and mode greater than the value of the mean. Skewness is “the extent to which a distribution of data points is concentrated at one end or the other” (Levin & Rubin, 1996:124). Two distributions differ (the statements “value for money” and “customer-focussed” for Mauripost). For most of the other distributions, the values are concentrated at the high end of the frequency distribution. This means that there are a higher number of respondents on the “agree” side of the distribution than on the “disagree” side of each statement.

Figure 23: A negatively skewed distribution



Pearson's coefficient of skewness was used to measure the degree of skewness of each distribution. Pearson's coefficient of skewness is as follows:

Equation 4

$$\text{Pearson' skewness coefficient} = \frac{3(\text{Mean}-\text{Median})}{\text{Standard Deviation}}$$

(http://mathworld.wolfram.com/Skewness.html)

The results for Pearson's coefficient of skewness are shown in Table 17.

Table 17: Pearson's Coefficient of Skewness

Internet Service Provider	Statement	Pearson's Coefficient of skewness
Telecom Plus	Is trustworthy	-0.36
DCL	Is trustworthy	-1.11
Network Plus	Is trustworthy	-1.62
Mauripost	Is trustworthy	-0.86
Telecom Plus	Offers value for money	-1.71
DCL	Offers value for money	-1.01
Network Plus	Offers value for money	-1.25
Mauripost	Offers value for money	-0.26
Telecom Plus	Is Innovative	-1.37
DCL	Is Innovative	-1.04
Network Plus	Is Innovative	-1.55
Mauripost	Is Innovative	-1.25
Telecom Plus	Offers Good service	-1.04
DCL	Offers Good service	-1.22
Network Plus	Offers Good service	-1.55
Mauripost	Offers Good service	-1.70
Telecom Plus	Is Customer-focussed	-1.04
DCL	Is Customer-focussed	-1.28
Network Plus	Is Customer-focussed	-1.42
Mauripost	Is Customer-focussed	-0.21

The above table shows that the "value for money" and "customer-focussed" statements for Mauripost have the lower degree of skewness (-0.26 and -0.21 respectively). As the coefficient of skewness tends toward zero, this means that the distributions for these two statements are almost symmetrical.

Each statement is further commented below.

1) Trustworthiness

Telecom Plus Ltd. has the mean with the greater magnitude (4.33) on the "trustworthy" statement. The second largest mean is that of Mauripost (3.74). However Telecom Plus has a smaller standard deviation (a smaller spread) than Mauripost. This implies there is a greater variety in the opinions expressed by respondents for Mauripost than for Telecom Plus Ltd.

2) Value for money

On this statement, Data Communications Ltd. is the Internet Service Provider that fares the worst with a mean of magnitude 3.39. Mauripost has a higher mean (4.04) and also the smallest dispersion with a standard deviation of 0.80. This means that there is less variability in the opinions expressed on that statement for Mauripost.

3) Innovative

On this statement Mauripost fares better with a mean of 3.97, the second highest mean obtained is that of Telecom Plus (3.93). Standard deviation is 1.10 for Telecom Plus as compared to 1.41 for Mauripost. There is a rather high variety of opinions among respondents regarding this statement for both firms.

4) Good service

The service offered by Telecom Plus is better viewed by respondents with a mean of 4.14 compared to a mean of less than 4 for the other Internet Service Providers. On that statement Telecom Plus has got a standard deviation of less than 1 (0.83).

5) Customer-focussed

Telecom Plus and Mauripost are almost at parity with a mean of 4.09 and 4.08 respectively. The standard deviation of Mauripost is lower than that of Telecom Plus (0.43 compared to 0.82).

5.7 Shifting and recommendation intentions

Respondents' loyalty towards a particular service provider was investigated in the first part of the questionnaire. Respondents were asked to specify both their shifting intention and their willingness to recommend the service providers that they use. Twelve percent of respondents used more than one Internet Service Provider. There is a higher percentage of non-shifting intention (48%) as

compared with shifting intention when respondents use only one Internet Service Provider (35%). The percentage of shifting intention increased in the group of respondents that use multiple Internet Service Providers.

Table 18: Shifting intention

Customers of	No of Respondents	Will shift (%)	Will not shift (%)	Do not know (%)
Telecom Plus only	75	35	48	17
Telecom Plus & Network Plus	8	75	25	0
Telecom Plus & Data Communications Ltd. & Network Plus	2	50	50	0

Respondents were almost unanimous in their intention to recommend the Internet Service provider(s) that they use. Recommendation intention varies between 75% and 100%.

Table 19: Intention to recommend

Customers of	No of respondents	Will recommend (%)	Will not recommend (%)	Do not know (%)
Telecom Plus only	75	80	8	12
Telecom Plus & Network Plus	8	75	0	25
Telecom Plus & Network Plus & Data Communications Ltd.	2	100	0	0

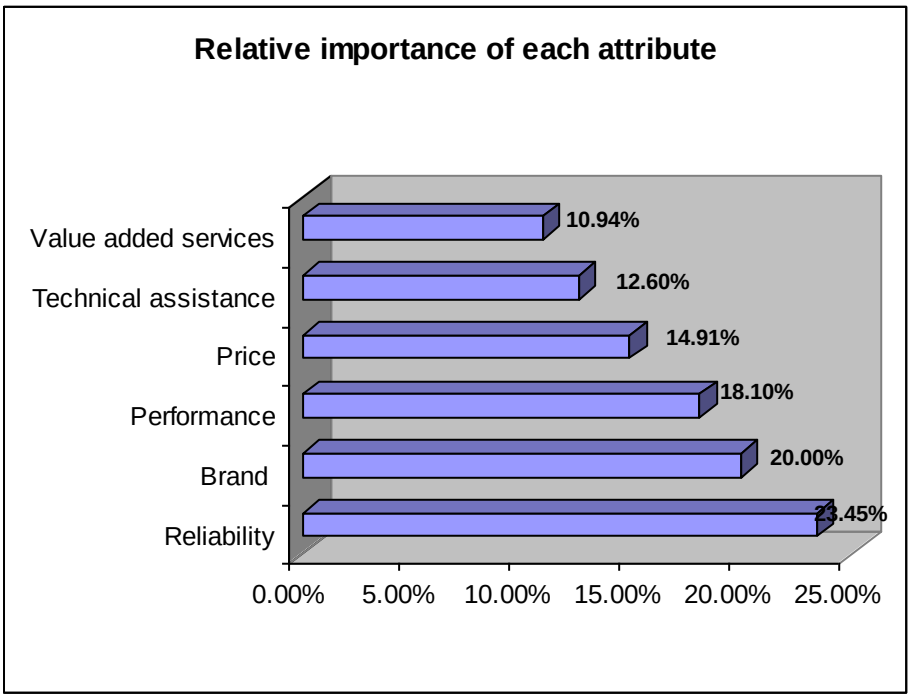
5.8 Conjoint analysis results

5.8.1 The relative importance of the brand

During the conjoint experiment respondents were asked to rate different product profiles. The brand and other attributes (reliability, performance, price, technical assistance and value added services) were investigated in the product profile. The ratings obtained from the survey for each product profile were then subjected to conjoint analysis treatment using the Sawtooth software. Eighty-five answers were considered usable after the conjoint analysis (fifteen answers were rejected because of missing values and respondents' inability to differentiate between

attributes levels during the process). The conjoint importance for each brand and the utilities for each level were obtained after the conjoint analysis. The relative importance of each attribute identifies its importance on the customer choice process. The relative importance of each attribute has been calculated and is seen in the figure below.

Figure 24: The relative importance of each attribute



The figure above shows that reliability is the most important attribute in the purchase decision with a relative importance of 23.45%. Brand is the second most important attribute with a relative importance of 20%. The third most important attribute is performance. Price comes out in the fourth position.

5.8.2 The relative importance of the brand according to income group

The relative importance of the brand per income group is shown in Table 20. Lower income groups (except for the "less than or equal to Rs5000" income group) give a lower importance to the brand. The brand is the third most important attribute for the income groups that have between Rs5000 to Rs20000 monthly income. The brand is either the second or first most important factor for

the higher income groups (the income groups that have a monthly income greater than Rs 20000).

Table 20: The relative importance of each attribute per income group

Income Group	No of respondents	Brand (%)	Price (%)	Performance (%)	Reliability (%)	Value added services (%)	Technical assistance (%)
Group 1- Less than or equal to Rs5000	1	21.84	17.92	24.61	7.64	16.37	11.62
Group 2 - Rs5001 to Rs10000	10	17.75	11.05	27.07	23.36	9.72	11.06
Group 3 - Rs10001 to Rs20000	20	15.34	11.98	17.80	28.54	11.96	14.37
Group 4- Rs20001 to Rs25000	12	20.13	19.11	16.04	20.42	12.62	11.69
Group 5 - Rs25001 to Rs30000	8	26.20	12.80	8.46	30.82	12.05	9.66
Group 6 - Rs30001 to Rs35000	5	24.49	10.80	17.18	25.37	8.89	13.27
Group 7 - Rs35001 to Rs40000	6	20.22	18.57	13.82	19.50	10.36	17.53
Group 8 - Rs40001 to Rs45000	0	0	0	0	0	0	0
Group 9- Rs45001 to Rs 50000	1	26.25	3.32	35.83	21.62	5.2	7.79
Group 10- More than Rs50000	7	20.53	6.42	30.29	19.44	11.51	11.82

5.8.3 The relative importance of the brand per age group

The age group “less than 18 years” attributes a higher importance to the reliability, performance and technical assistance factors with relative importance of 26.37%, 20.52% and 15.23% respectively. The brand attribute becomes more important in the older age groups. The brand element is ranked second in the 18-29 group, third in the 30-39 group and second in the more than 39 years group. The price element is more of a concern for the more than 60 years age group, where its relative importance is superior to the other attributes (relative conjoint importance of 41.71%).

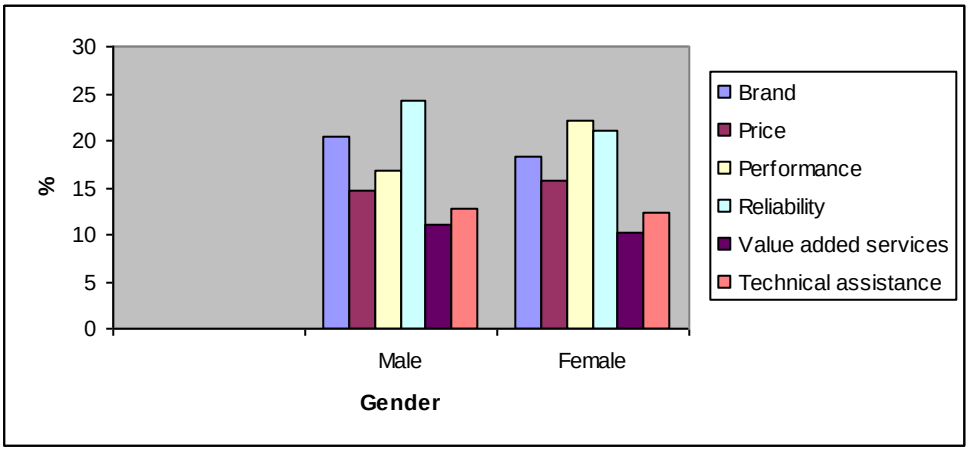
Table 21: The relative importance of each attribute per age groups

Age	No.	Brand %	Price %	Performance %	Reliability %	Value added services %	Technical assistance %
<18	3	14.29	11.54	20.52	26.37	12.05	15.23
18-29 yrs	24	22.07	11.77	18.98	22.96	12.59	11.62
30-39 yrs	30	18.82	15.50	19.87	25.81	8.29	11.71
40-49 yrs	21	19.30	16.70	14.47	22.70	11.69	15.15
50-59 yrs	5	24.16	10.14	19.27	20.28	14.88	11.28
> 60 yrs	2	18.47	41.71	12.53	5.44	11.60	10.26

5.8.4 Relative importance of the brand according to gender

The relative importance attributed to the brand by men in their purchase decision is 20.53% compared to a relative importance of 18.29% for women. Brand is the second most important factor for men as compared to being the third most important factor for women.

Figure 25: Relative importance of the brand according to gender



5.8.5 Statistical Testing

Conjoint importance for each attribute (brand, reliability, performance, price, technical assistance and value added services) was further investigated through statistical testing using the One-Way Anova (analysis of variance) feature on NCSS (Number Cruncher Statistical Systems) software. This test was done in order to pinpoint differences between the various attribute groups. The One-Way Anova is used to analyse the difference between more than two population means. Anova can be used when there are several distinct populations or when a single population is subjected to different treatments (Albright, Winston & Zappe, 2003). The One-Way Anova compares group means to see if at least one mean is different.

The One-Way Anova assumptions are:

1. The data are continuous (not discrete).

2. The data follow the normal probability distribution. Each group is normally distributed about the group mean.

3. The variances of the populations are equal.

4. The groups are independent. There is no relationship among the individuals in one group as compared to another.

5. Each group is a simple random sample from its population. Each individual in the population has an equal probability of being selected in the sample.

The One-Way Anova results from NCSS showed that the assumptions of normality and homogeneity of variance test were violated. The nonparametric Kruskal-Wallis One-Way test was therefore used as a substitute test. The Kruskal-Wallis test is a nonparametric test to compare three or more unpaired groups.

The Kruskal-Wallis test assumptions are:

1. The variable of interest is continuous (not discrete). The measurement scale is at least ordinal.

2. The probability distributions of the populations are identical, except for location. The population variances are equal.

3. The groups are independent.

4. All groups are simple random samples from their respective populations. Each individual in the population has an equal probability of being selected in the sample.

The hypotheses for the Kruskal-Wallis were:

H_o: All medians are equal

$H_{a:}$ At least two medians are different

The test results are shown in the following table.

Table 22: Kruskal-Wallis Test results

Method	DF (H)	Chi-Square	Prob Level	Decision (0.05)
Not corrected for ties	5	77.18	0.000000	Reject H_o
Corrected for ties	5	77.18	0.000000	Reject H_o

The probability level (p) is very small (p is less than the significance level of 0.05). The null hypothesis, H_o, is rejected, that is the chance of observing a difference when the population medians are identical is very small and it is therefore unlikely that the differences between group medians are due to coincidence. This means that the alternative hypothesis that at least one group differs from one of the others can be accepted.

The Kruskal- Wallis test results show that at least one group differs from one of the others. Further tests were made using Tukey-Kramer Multiple –Comparison Test to identify whether the brand group is significantly different from the others. The results are shown below.

Table 23: Tukey-Kramer Multiple-Comparison Test results

Group	Count	Mean	Different from Groups
Value added services	85	10.94	Performance, Brand, Reliability
Technical assistance	85	12.60	Performance, Brand, Reliability
Price	85	14.91	Brand, Reliability
Performance	85	18.10	Value added services, Technical assistance, Reliability
Brand	85	20.00	Value added services Technical assistance Price
Reliability	85	23.45	Value added services, Technical assistance, Price, Performance

The Tukey-Kramer Multiple-Comparison Test shows that the brand group is different from the price, value added services and technical assistance attributes.

The detailed results from the Kruskal-Wallis Test and the Tukey-Kramer Multiple-Comparison Test are shown in Appendix G.

5.8.6 The brand-price relationship

The brand-price relationship was further examined through correlation. Correlation was performed on the conjoint importance. Correlation measures the degree of association between two variables. The correlation coefficient (r) varies from 0 (random relationship) to 1 (perfect positive correlation) and -1 (a perfect negative correlation). Since the brand-price conjoint importance distributions are not normal, the Spearman's Rank correlation was used. The results obtained for the brand-price relationship can be seen in Table 24.

Table 24: Spearman's Rank Correlation results

	Brand	**Price**
Brand	1.000000	-0.195774
Price	-0.195774	1.000000

There is a weak, negative relationship between brand and price, that is, the higher the importance of the brand, the lower the importance of the price attribute.

5.8.7 Analysis of the conjoint importance using clustering technique

Clustering is a technique used to "classify objects into relatively homogeneous groups based on the set of variables considered. Objects in a group are relatively similar in terms of these variables and different from objects in other groups" (Malhorta,1996: 671). A cluster analysis was made on the conjoint importance obtained by using the K- Means cluster feature on NCSS.

The results from the cluster analysis are shown in Table 25.

Table 25: Cluster Means

Variables	Cluster1	Cluster2	Cluster3
Brand	17.39075	17.61636	23.84294
Price	12.6275	46.39727	7.39853
Perfomance	31.423	4.441818	6.848824
Reliability	18.09625	19.13364	31.14765
Value_added_services	8.518	5.65	15.50235
Technical_assistance	11.94475	6.761818	15.26029
Count	40	11	34

Three clusters have been identified. Cluster 1 is very performance-oriented and accounts for 47% of the total number of respondents. Cluster 2 is a very price-sensitive segment and accounts for 13% of respondents. Cluster 3 is the quality and brand conscious segment. Cluster 3 is also the segment with a greater concern for support services (value added services and technical assistance). Cluster 3 accounts for 40% of the total number of respondents. The details of the K-Means Cluster Analysis are shown in Appendix H.

5.9 The Conjoint Utilities

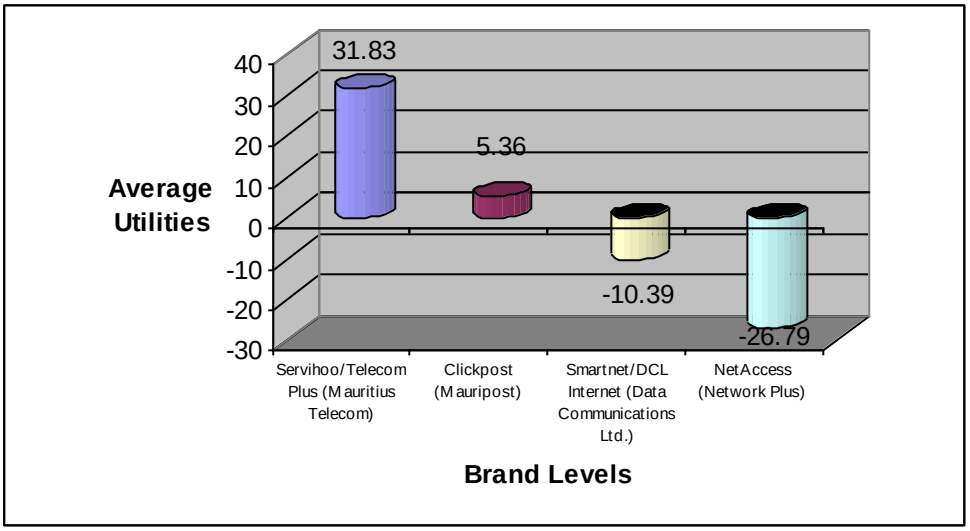
The average utility for each attribute level has been calculated from the conjoint utilities obtained after the conjoint treatment. The average utility for each level can be used as an estimate of the value that consumers place on each attribute level.

5.9.1 Average utilities for brand

The average utility for each brand level is shown in Figure 26. The brand levels with the highest utility are those of the market leader -Servihoo/Telecom Plus (Mauritius Telecom). Smartnet/DCL and NetAccess/Network Plus have both negative utilities. Negative utilities indicate the least preferred levels of each attribute. It does not mean that the brand levels have got zero utilities. In conjoint analysis, respondents are asked relative questions about product profiles, hence absolute values of utilities have no meaning. Only differences between attribute levels are meaningful. There is a difference of 26.47 utility

points between the Servihoo/Telecom Plus (Mauritius Telecom) and the second ranked brand Clickpost/Mauripost, of 42.22 utility points and 58.62 utility points between the Servihoo/Telecom Plus (Mauritius Telecom) and Smartnet/DCL and NetAccess/Network Plus respectively.

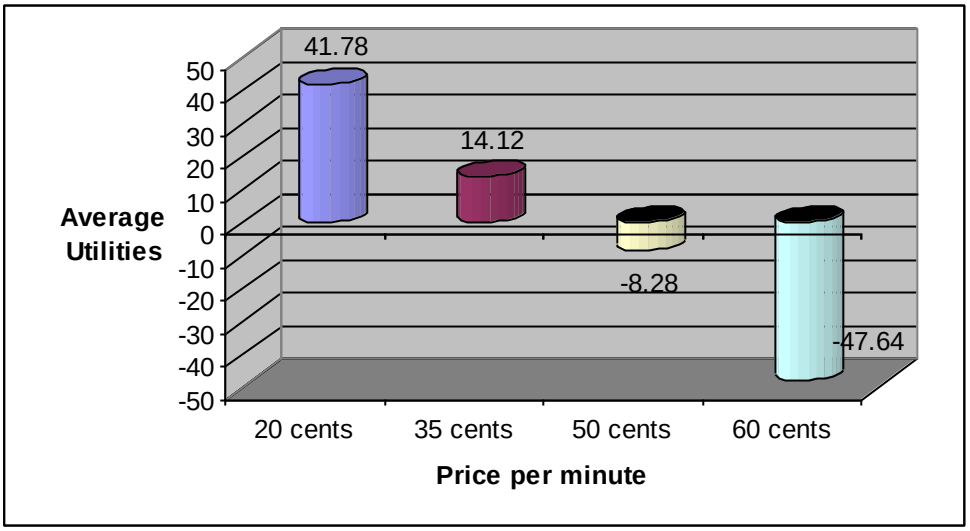
Figure 26: Average utilities for brand



5.9.2 Average utilities for price

The respondents place a greater value on the price of 20 cents per minute than on the other price levels. There is almost the same difference between the price of 20 and 35 cents and between the price of 35 and 50 cents (27.66 and 22.4 utility points respectively). There is a difference of 39.36 utility points between the price of 50 cents and that of 60 cents. As the price increases, the worth of the price levels for the respondents decreases. Both the 50 cents and 60 cents price have negative utilities.

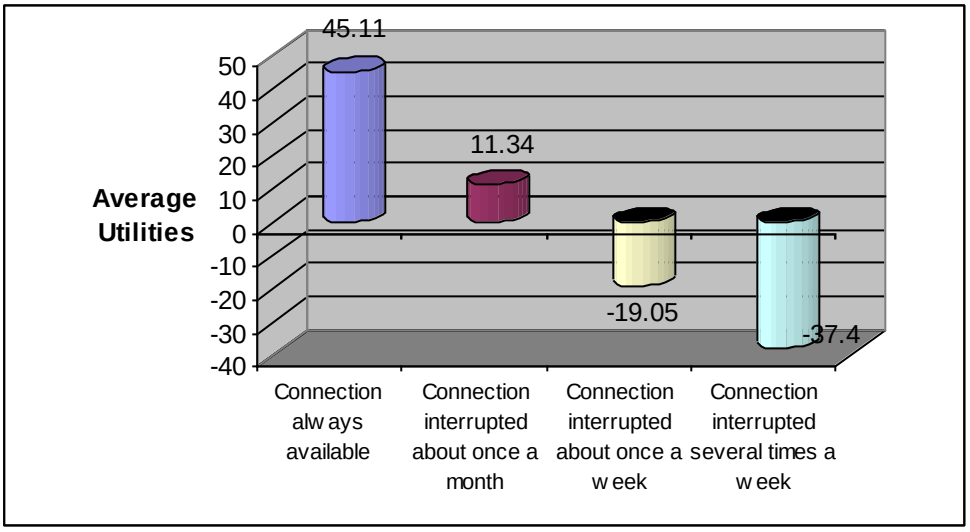
Figure 27: Average utilities for price



5.9.3 Average utilities for reliability

As the frequency of interruption increases, the average utility decreases. There is a difference of 33.77 utility points between the “always available connection” and the “connection interrupted once per month” and of 30.39 utility points between the “connection interrupted once per month” and the “connection interrupted once per week”. The last two levels, “connection interrupted once per week” and “connection interrupted several times per week” have got a difference of 18.35 utility points.

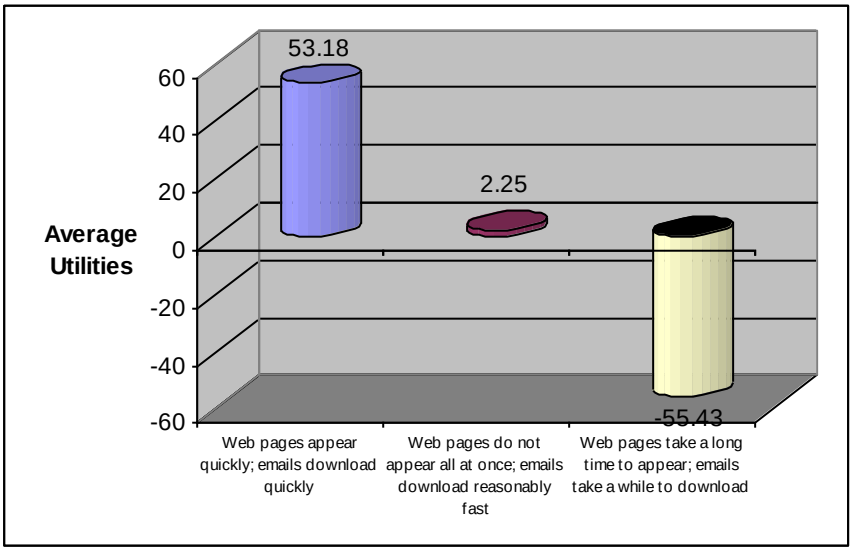
Figure 28: Average utilities for reliability



5.9.4 Average utilities for performance

The difference between the first level and second level and between the second and third level of the performance attribute is almost the same with 50.93 and 57.68 utility points.

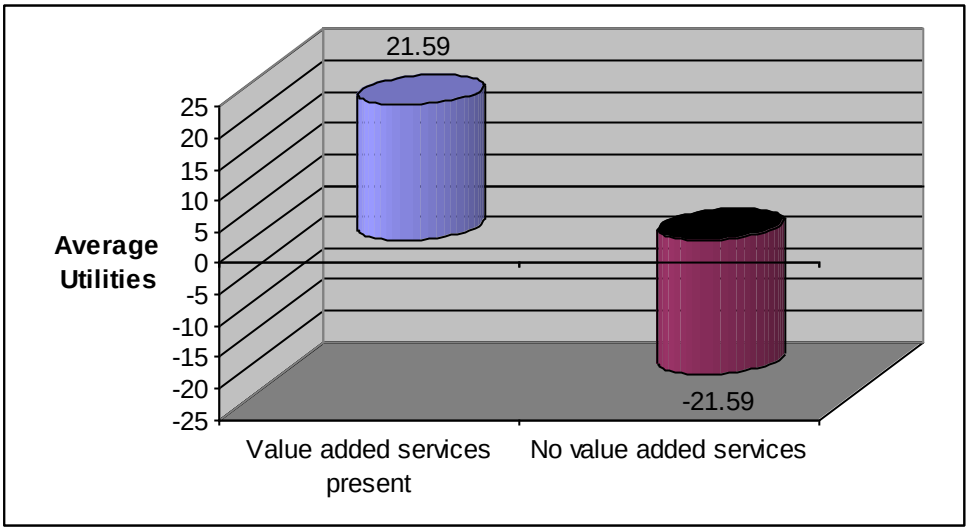
Figure 29: Average utility for performance



5.9.5 Average utilities for value added services

Value added services were investigated in a binary form i.e., present/absent options. There is higher utility when value added services are present.

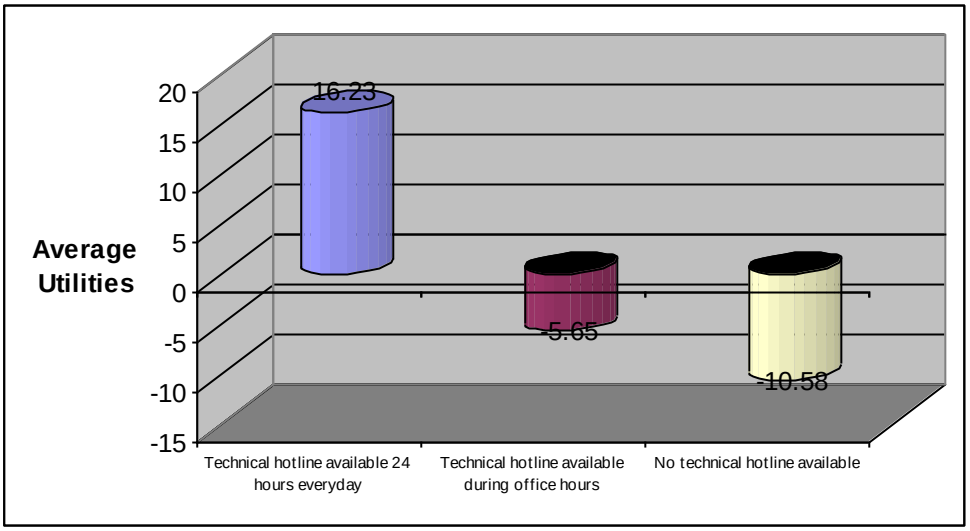
Figure 30: Average Utilities for Value Added Services



5.9.6 Average utilities for technical assistance

Respondents place a higher value on a technical hotline that is available 24 hours a day than on one that is available only during office hours or that is not available at all.

Figure 31: Average Utilities for Technical Assistance



5.9.7 Average utilities and demographic profile of Clusters

Three clusters have been identified as follows in Section 5.8.7:

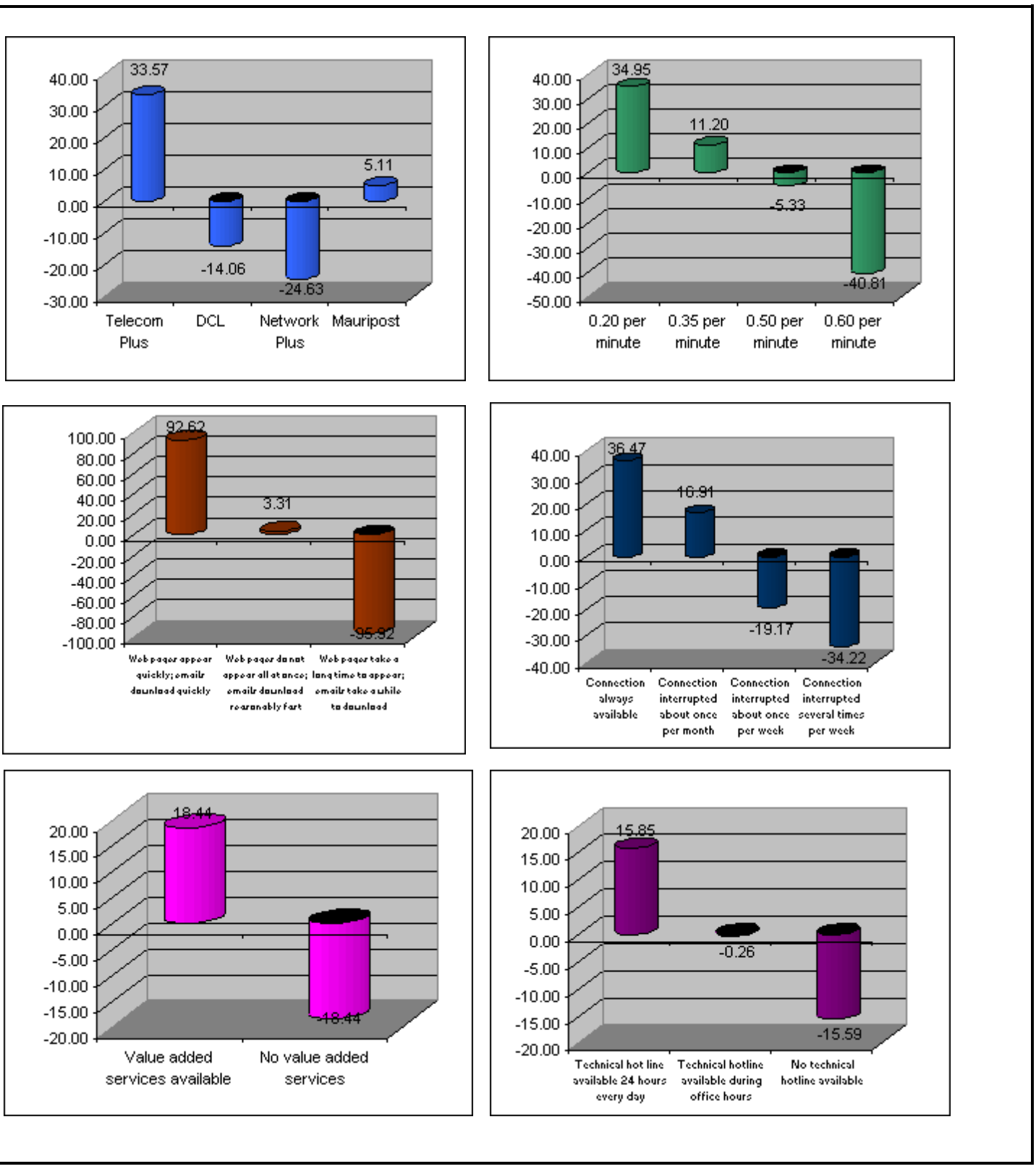
- Cluster 1: the performance-oriented cluster

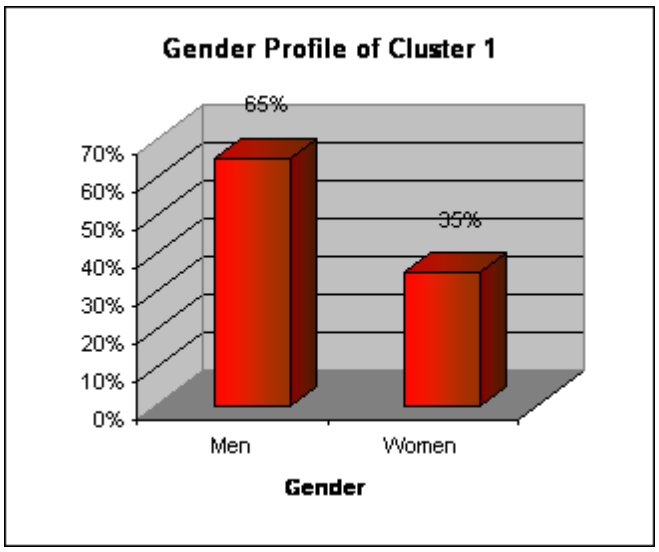
- Cluster 2: the price-sensitive cluster

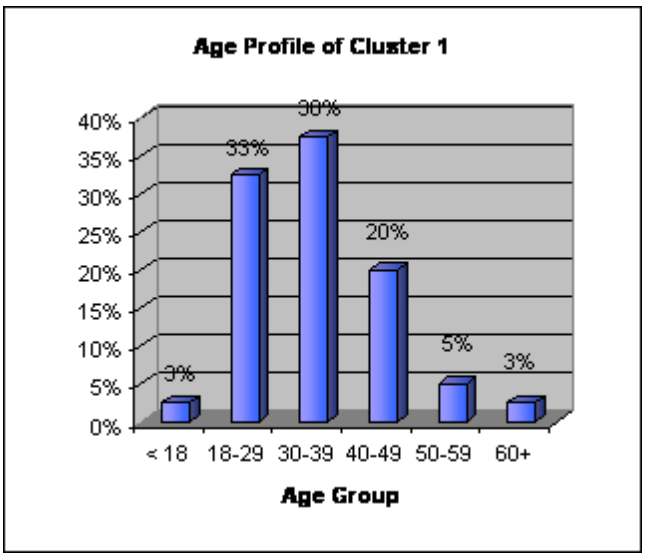
- Cluster 3: the quality and brand conscious cluster.

The average utilities that were obtained for each attribute level are shown in the Figures 32, 33 and 34. These clusters have been further analysed according to their demographic profile (gender, age and income profiles).

Figure 32: Average utilities and demographic profile of Cluster 1




Gender Profile of Cluster 1
65%
35%
70%
60%
50%
40%
30%
20%
10%
0%
Men
Women
Gender


Age Profile of Cluster 1
40%
35%
30%
25%
20%
15%
10%
5%
0%
3%
33%
38%
20%
5%
3%
< 18
18-29
30-39
40-49
50-59
60+
Age Group

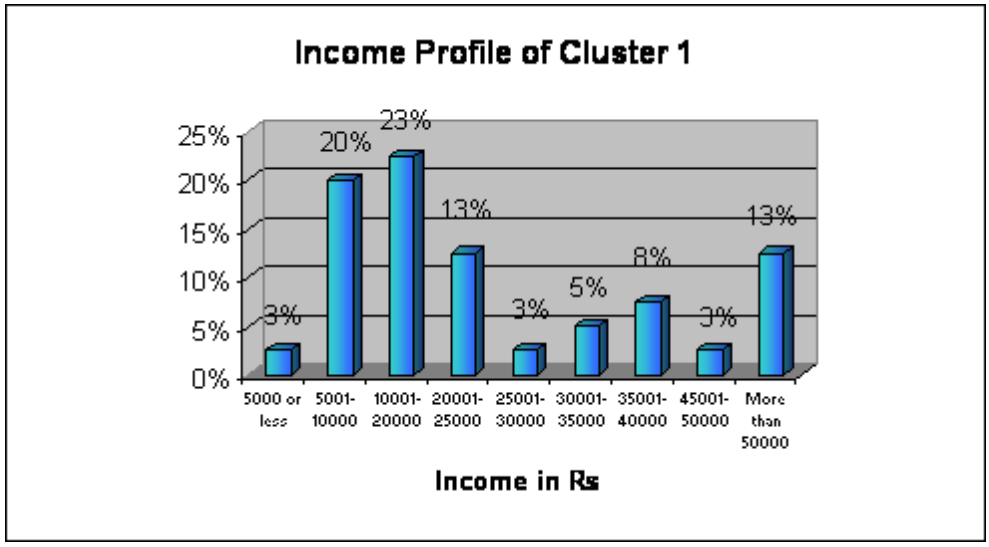
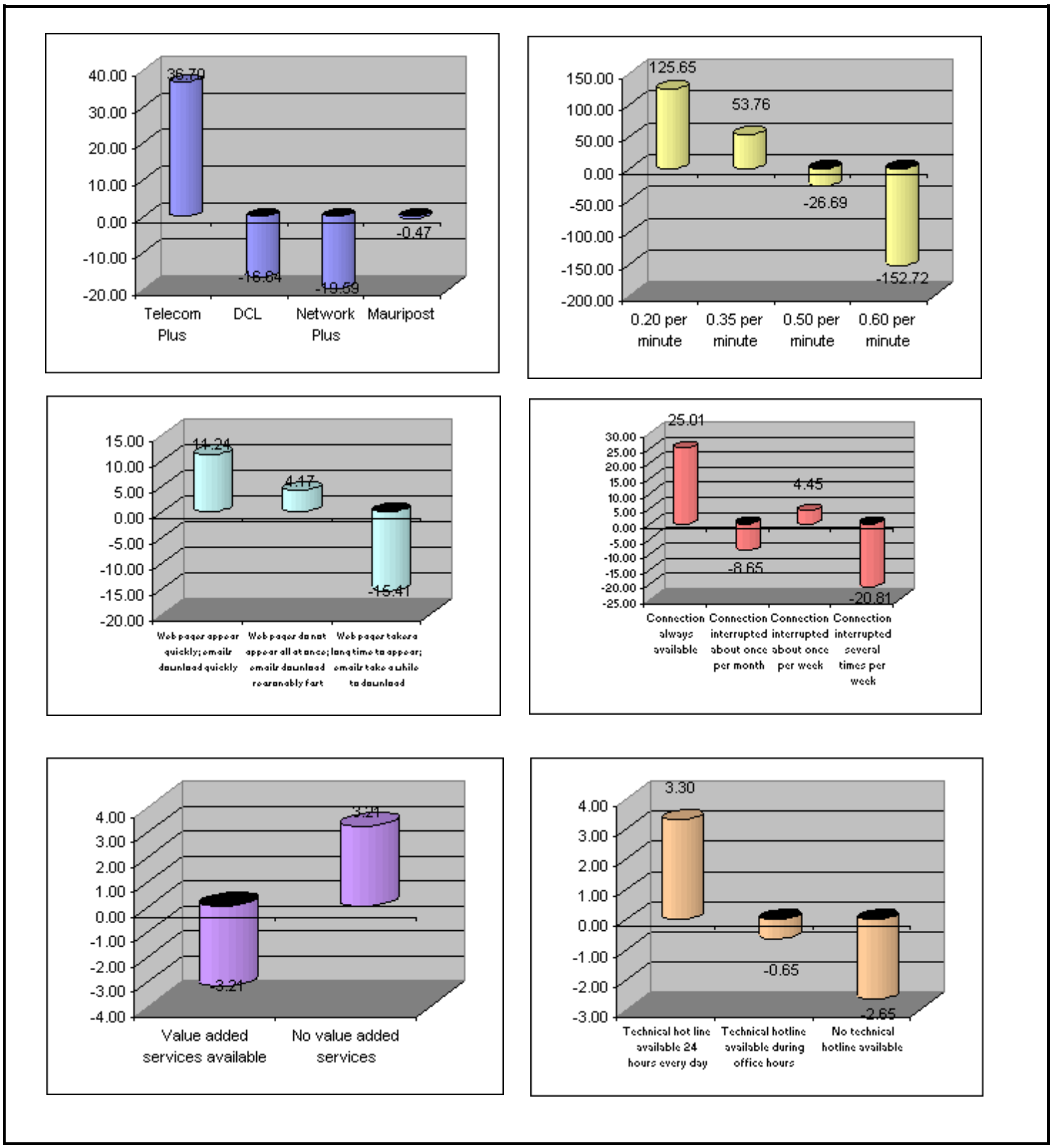
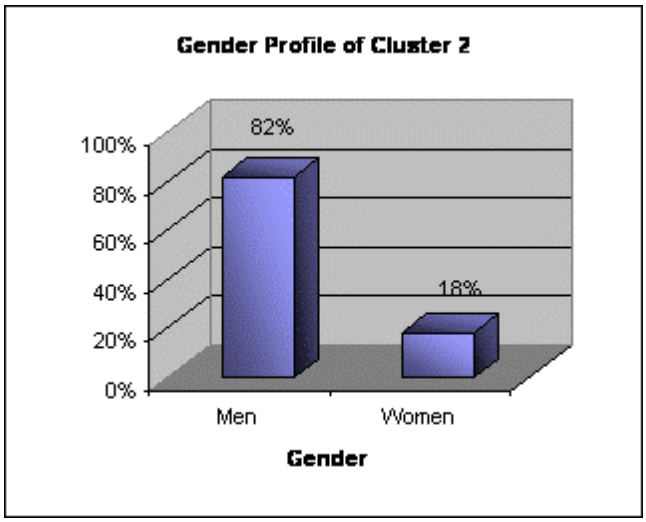
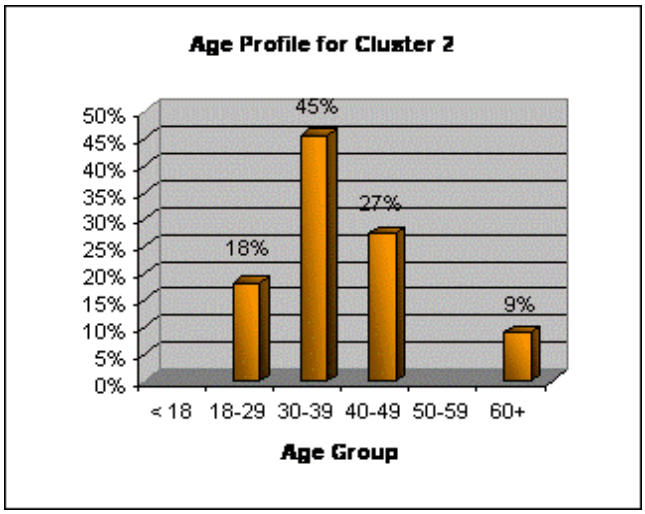

Income Profile of Cluster 1
25%
20%
15%
10%
5%
0%
3%
20%
23%
13%
3%
5%
8%
3%
13%
5000 or less
5001-10000
10001-20000
20001-25000
25001-30000
30001-35000
35001-40000
45001-50000
More than 50000
Income in Rs

Figure 33: Average utilities and demographic profile of Cluster 2




Gender Profile of Cluster 2
100%
80%
60%
40%
20%
0%
82%
18%
Men
Women
Gender


Age Profile for Cluster 2
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
18%
45%
27%
9%
< 18
18-29
30-39
40-49
50-59
60+
Age Group

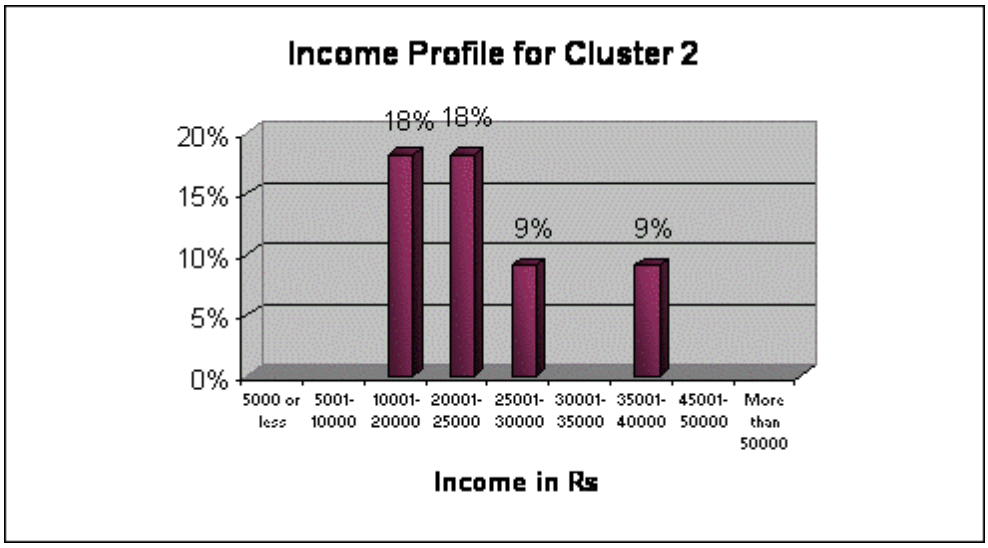
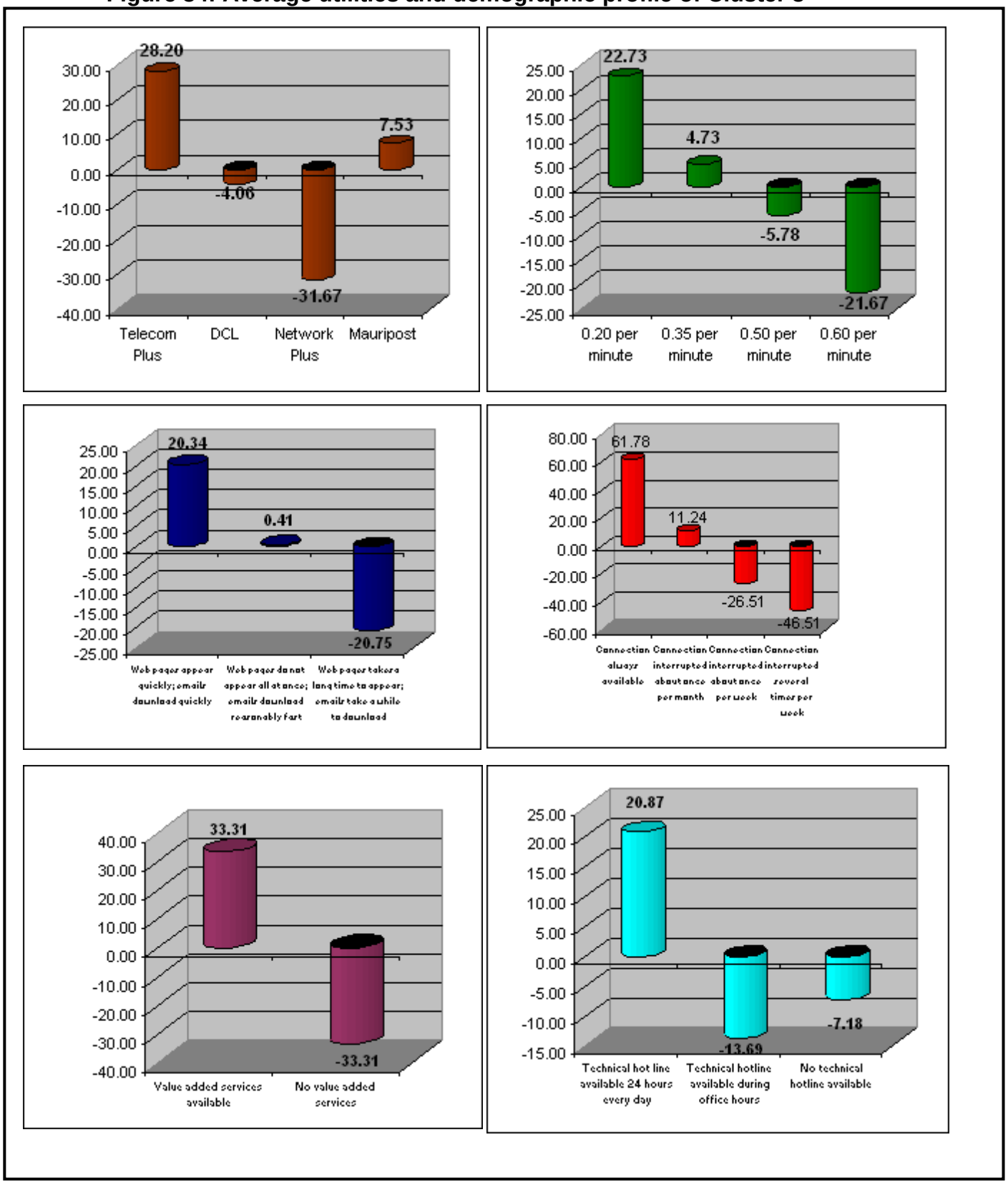
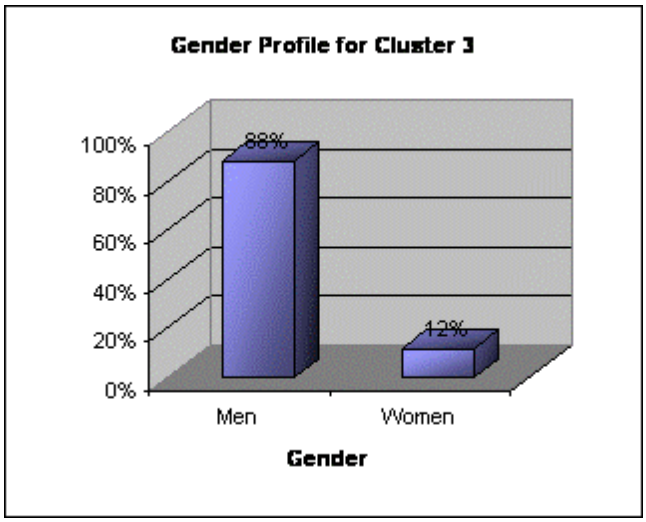
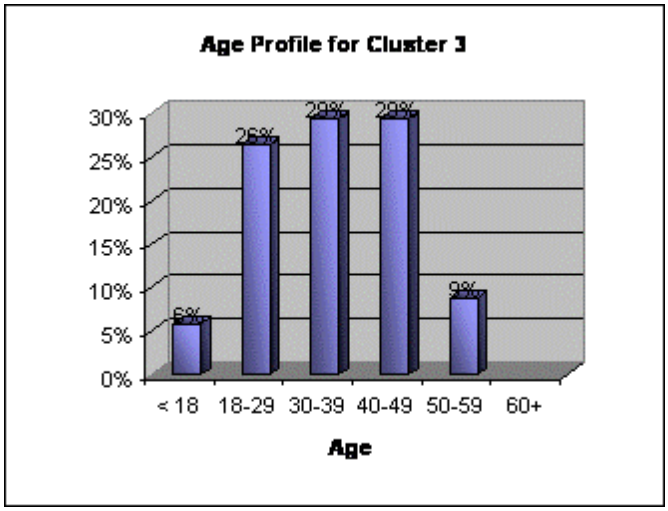
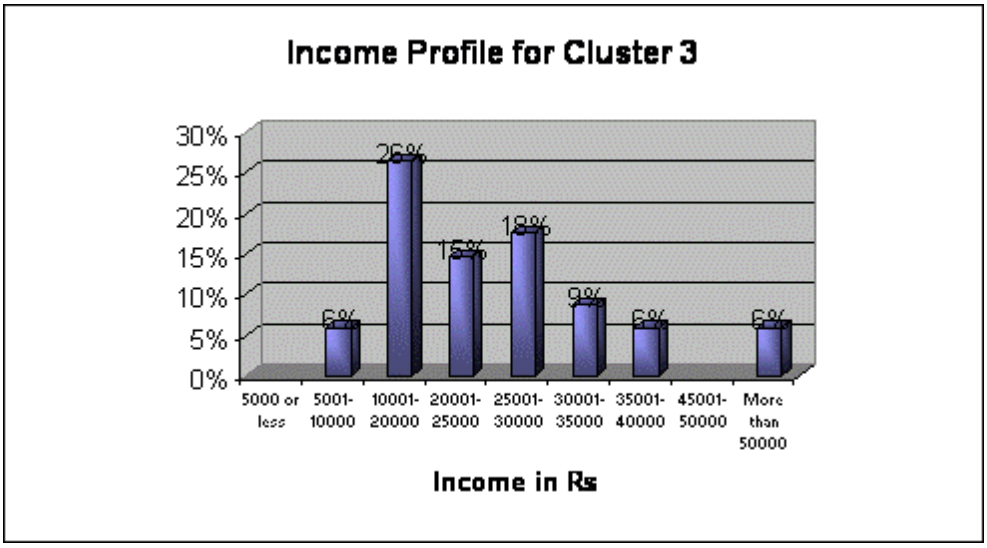

Income Profile for Cluster 2
20%
15%
10%
5%
0%
18%
18%
9%
9%
5000 or less
5001-10000
10001-20000
20001-25000
25001-30000
30001-35000
35001-40000
45001-50000
More than 50000
Income in Rs

Figure 34: Average utilities and demographic profile of Cluster 3









There is a higher percentage of men in Cluster 2 and 3 (82% and 88% respectively). Seventy-one percent of respondents of Cluster 1 (the performance oriented cluster) are found in the 18-29 and 30-39 age groups. Seventy-two percent of respondents of Cluster 2 (the price sensitive cluster) are found in the 30-49 age group. The distribution of respondents in Cluster 3 (the quality and brand conscious cluster) is almost equally distributed among the 18-29, 30-39 and 40-49 age groups with 26%, 29% and 29% respectively. The income group

profile of respondents was difficult to analyse since many respondents were unwilling to provide their income. There was 45% non-response to the income group question in Cluster 2, 15% in Cluster 3 and 13% in Cluster 1.

The differences in average utilities obtained between each level of the price, performance and reliability attributes were further examined and are shown in Table 26.

Table 26: Differences between attributes levels in each cluster

Attributes	Levels	Cluster 1	Cluster 2	Cluster 3
		Difference between levels		
Price	20 cents			
	35 cents	23.75	71.89	18
	50 cents	16.53	80.45	10.51
	60 cents	35.48	126.03	15.89
Performance	Web pages appear quickly; emails download quickly			
	Web pages do not appear all at once; emails download reasonably fast	89.31	10.07	19.93
	Web pages takes a long time to appear; emails take a while to download	99.23	19.58	21.16
Reliability	Connection always available			
	Connection interrupted about once a month	19.56	33.66	50.54
	Connection interrupted about once a week	36.08	-13.1	37.75
	Connection interrupted about several times per week	15.05	25.26	20

Table 26 shows significant differences in customer's preference on each level of the three attributes. Cluster 2 is price-conscious, the difference between each level of price is higher in Cluster 2 than in Cluster 1 or 3, that is 71.89 utility points between the price level of 20 and 35 cents, 80.45 utility points between the price level of 35 and 50 cents and 126.03 utility points between the price levels of 50 and 60 cents.

Cluster 1 is very performance-oriented and has got higher differences between the first and second level and the second and third level of the performance attribute that is respectively 89.31 and 99.23 than the other two clusters.

Cluster 3 has been termed the quality and brand conscious one and this cluster attributes more importance to reliability. The difference is higher between the first and second level of the reliability attribute when compared with the difference between the utility points for the same level for Cluster 1 and 2.

5.10 Statistical testing

5.10.1 Brand awareness

The relationship between brand awareness and brand utility was investigated using the two-sample T-Test. The T-Test is a common method that is used to evaluate the differences in means between two groups (www.statsoft.com/textbook/stbasic.html). The T-Test assesses whether the means of two groups are statistically different. The two-sample T-test on NCSS was used to evaluate the difference in the means of the utilities obtained for a specific brand between two groups of respondents (those who were aware of this brand and those who were not aware of this brand).

The two-sample T -Test was done for both the service and corporate brands as shown in Table 27. Ten different combinations were made.

Table 27: Combinations used during the two-sample T-Test

	Aware of	Not aware of	Utilities obtained for
Combination 1	Mauritius Telecom	Mauritius Telecom	Servihoo/ Telecom Plus (Mauritius Telecom)
Combination 2	Telecom Plus	Telecom Plus	Servihoo/ Telecom Plus (Mauritius Telecom)
Combination 3	Servihoo	Servihoo	Servihoo/ Telecom Plus (Mauritius Telecom)
Combination 4	Data Communications Ltd.	Data Communications Ltd.	Smartnet/DCL Internet/Data Communications Ltd.
Combination 5	DCL Internet	DCL Internet	Smartnet/DCL Internet/Data Communications Ltd.
Combination 6	Smartnet	Smartnet	
Combination 7	Network Plus	Network Plus	NetAccess/Network Plus
Combination 8	NetAccess	NetAccess	NetAccess/Network Plus
Combination 9	Mauripost	Mauripost	Clickpost/Mauripost
Combination 10	Clickpost	Clickpost	Clickpost/Mauripost

Because of the diverse nature of the distributions, different types of statistical tests were used to analyse the data. When the assumptions of normality and equal variances were met, the Equal-Variance T-Test was used. When the assumptions of normality were met but the variances were not equal, the Aspin-Welch Unequal Variance Test was selected. When the distributions are not normal, but are equal, then the Equal variance T-Test was used. The hypotheses for each of those tests are as follows:

1) Difference between the two means is <>0. (Two-tailed test).

The null and alternative hypotheses are

Ho: μ_x-μ_y =0

Ha: $\mu_x - \mu_y \neq 0$.

2) Difference between the two means is <0 (left-tailed test case).

The null and alternative hypotheses are

Ho: $\mu_x - \mu_y = 0$

Ha: $\mu_x - \mu_y < 0$.

3) Difference between the two means is >0. (right-tailed test case).

The null and alternative hypotheses are

Ho: $\mu_x - \mu_y = 0$

Ha: $\mu_x - \mu_y > 0$.

The results of these tests are shown in the Table 27.

Table 28: Results of two samples T-Test

	Results of Tests of Assumptions Section	Results
Combination 1	Normal Distribution Equal variances N_1> 30 N_2 < 30	**Equal-Variance T-Test Section** **Alternative Hypothesis** / **T-Value** / **Prob Level** / **Decision (5%)** / **Power (Alpha=.05)** / **Power (Alpha=.01)** Difference <> 0 / -0.1435 / 0.886221 / Accept Ho / 0.052309 / 0.010742 Difference < 0 / -0.1435 / 0.443110 / Accept Ho / 0.066485 / 0.014439 Difference: (MT=0)-(MT=1)
Combination 2	Normal Distribution Equal variances N_1> 30 N_2 > 30	**Equal-Variance T-Test Section** **Alternative Hypothesis** / **T-Value** / **Prob Level** / **Decision (5%)** / **Power (Alpha=.05)** / **Power (Alpha=.01)** Difference <> 0 / -2.0530 / 0.043223 / Reject Ho / 0.527634 / 0.286471 Difference < 0 / -2.0530 / 0.021612 / Reject Ho / 0.652233 / 0.379504 Difference: (TP=0)-(TP=1)
Combination 3	Distribution is not normal (kurtosis normality rejected)	**Kolmogorov-Smirnov Test For Different Distributions** **Alternative Hypothesis** / **Dmn Criterion Value** / **Reject Ho if Greater Than** / **Test Alpha Level** / **Decision (Test Alpha)** / **Prob Level** D(1)<>D(2) / 0.141608 / 0.3027 / .050 / Accept Ho / 0.7485 D(1)<D(2) / 0.141608 / 0.3027 / .025 / Accept Ho D(1)>D(2) / 0.121795 / 0.3027 / .025 / Accept Ho

	$N_1 > 30$ $N_2 > 30$ Equal distribution	**Equal-Variance T-Test Section** **Alternative Hypothesis** / **T-Value** / **Prob Level** / **Decision (5%)** / **Power (Alpha=.05)** / **Power (Alpha=.01)** Difference <> 0 / -0.1196 / 0.905104 / Accept Ho / 0.051602 / 0.010514 Difference < 0 / -0.1196 / 0.452552 / Accept Ho / 0.063475 / 0.013598 Difference: (Servihoo=0)-(Servihoo=1)
Combination 4	Normal Distribution Equal variance N_1>30 $N_2 > 30$	**Equal-Variance T-Test Section** **Alternative Hypothesis** / **T-Value** / **Prob Level** / **Decision (5%)** / **Power (Alpha=.05)** / **Power (Alpha=.01)** Difference <> 0 / 0.7973 / 0.427540 / Accept Ho / 0.123628 / 0.036777 Difference < 0 / 0.7973 / 0.786230 / Accept Ho / 0.007431 / 0.000933 Difference: (DCL=0)-(DCL=1)
Combination 5	Normal Distribution Equal variance N_1> 30 $N_2 < 30$	**Equal-Variance T-Test Section** **Alternative Hypothesis** / **T-Value** / **Prob Level** / **Decision (5%)** / **Power (Alpha=.05)** / **Power (Alpha=.01)** Difference <> 0 / 1.6205 / 0.108925 / Accept Ho / 0.360267 / 0.161698 Difference > 0 / 1.6205 / 0.054462 / Accept Ho / 0.485000 / 0.232021 Difference: (DCL_Internet=0)-(DCL_Internet=1)
Combination 6	Normal Distribution Unequal	**Aspin-Welch Unequal-Variance Test Section** **Alternative Hypothesis** / **T-Value** / **Prob Level** / **Decision (5%)** / **Power (Alpha=.05)** / **Power (Alpha=.01)** Difference <> 0 / -1.3406 / 0.197325 / Accept Ho / 0.244831 / 0.087208 Difference < 0 / -1.3406 / 0.098662 / Accept Ho / 0.360720 / 0.138377

	variance N_1>30 N_2< 30	Difference: (Smartnet=0)-(Smartnet=1)
Combination 7	Normal Distribution Equal variance N_1> 30 N_2 < 30	**Equal-Variance T-Test Section** **Alternative Hypothesis** / **T-Value** / **Prob Level** / **Decision (5%)** / **Power (Alpha=.05)** / **Power (Alpha=.01)** Difference <> 0 / 0.0066 / 0.994788 / Accept Ho / 0.050005 / 0.010002 Difference > 0 / 0.0066 / 0.497394 / Accept Ho / 0.050674 / 0.010173 Difference: (NW_=0)-(NW_=1)
Combination 8	Distribution is not normal (omnibus normality rejected) N_1> 30 N_2 < 30	**Kolmogorov-Smirnov Test For Different Distributions** **Alternative Hypothesis** / **Dmn Criterion Value** / **Reject Ho if Greater Than** / **Test Alpha Level** / **Decision (Test Alpha)** / **Prob Level** D(1)<>D(2) / 0.304094 / 0.4481 / .050 / Accept Ho / 0.3674 D(1)<D(2) / 0.097953 / 0.4481 / .025 / Accept Ho D(1)>D(2) / 0.304094 / 0.4481 / .025 / Accept Ho **Equal-Variance T-Test Section** **Alternative Hypothesis** / **T-Value** / **Prob Level** / **Decision (5%)** / **Power (Alpha=.05)** / **Power (Alpha=.01)** Difference <> 0 / 1.2223 / 0.225044 / Accept Ho / 0.226866 / 0.084221 1.2223 / 0.112522 / Accept Ho / 0.332692 / 0.130539 Difference: (Netaccess=0)-(Netaccess=1)

Combination 9	Distribution is not normal (kurtosis & omnibus normality rejected) N_1<30 N_2>30	**Kolmogorov-Smirnov Test For Different Distributions** **Alternative Hypothesis** / **Dmn Criterion Value** / **Reject Ho if Greater Than** / **Test Alpha Level** / **Decision (Test Alpha)** / **Prob Level** D(1)<>D(2) 0.253846 0.3292 .050 Accept Ho 0.2354 D(1)<D(2) 0.253846 0.3292 .025 Accept Ho D(1)>D(2) 0.092308 0.3292 .025 Accept Ho **Equal-Variance T-Test Section** **Alternative Hypothesis** / **T-Value** / **Prob Level** / **Decision (5%)** / **Power (Alpha=.05)** / **Power (Alpha=.01)** Difference <> 0 -0.2435 0.808191 Accept Ho 0.056665 0.012159 Difference < 0 -0.2435 0.404095 Accept Ho 0.080264 0.018456 Difference: (Mauripost=0)-(Mauripost=1)
Combination 10	Distribution is not normal (kurtosis and omnibus normality rejected) N_1< 30 N_2>30	**Kolmogorov-Smirnov Test For Different Distributions** **Alternative Hypothesis** / **Dmn Criterion Value** / **Reject Ho if Greater Than** / **Test Alpha Level** / **Decision (Test Alpha)** / **Prob Level** D(1)<>D(2) 0.261671 0.4124 .050 Accept Ho 0.4451 D(1)<D(2) 0.261671 0.4124 .025 Accept Ho D(1)>D(2) 0.077396 0.4124 .025 Accept Ho **Equal-Variance T-Test Section** **Alternative Hypothesis** / **T-Value** / **Prob Level** / **Decision (5%)** / **Power (Alpha=.05)** / **Power (Alpha=.01)** Difference <> 0 -0.8136 0.418189 Accept Ho 0.126750 0.038048 Difference < 0 -0.8136 0.209094 Accept Ho 0.201057 0.063518 Difference: (Clickpost=0)-(Clickpost=1)

N_1 is sample 1; N_2 is sample 2.

When p is large (greater than the significance level of 5%) there is no sufficient evidence to reject the null hypothesis. In 9 out of the 10 combinations, the p value is large and therefore there is not sufficient evidence to reject the null hypothesis. According to the results obtained for Combination 2, there is sufficient evidence to reject the null hypothesis (Ho) for the left-tail and two-tail tests at the 5% level of significance.

Since only one combination had sufficient evidence to reject the null hypothesis, there is not sufficient evidence to say that the utilities of the "aware" and "unaware" groups differ for corporate and service brands. There is no significant different obtained for the service brands and the corporate brands.

The detailed Two-sample T-Test reports can be seen in Appendix I.

5.10.2 Brand loyalty

A two-sample T-Test was made to compare the utilities obtained for the "brand loyal" group and the "not brand loyal" group for Telecom Plus. This analysis was not made for other brands because the number of customers using other brands was too small.

The two-sample Test report gave the following results:

1) The assumptions of normality were met.

2) The assumptions of equal variances were met.

Therefore the Equal-Variance T-Test was used to test the two means.

Table 29: Equal-Variance T-Test Section

Alternative Hypothesis	T-Value	Prob level	Decision (5%)	Power (Alpha=.05)	Power (Alpha=.01)
Difference <> 0	-1.7194	0.090017	Accept Ho	0.395845	0.184745
Difference < 0	-1.7194	0.045008	Reject Ho	0.523006	0.260922

According to the left-tailed test, there is sufficient evidence to reject the null hypothesis (Ho). This implies that there may be a difference between the means of the utilities for the brand loyal group and the "not brand loyal" group. However, since the data is numerical, the two-tailed test results could also be chosen whereby the null hypothesis, Ho, is accepted.

The detailed Two-sample T-Test report is shown in Appendix J.

5.10.3 Perceived quality

A linear regression was made using the linear regression function of NCSS in order to identify the relationship between the perceptions in quality (represented by the statements) and the average utilities (portraying customer brand preferences). The results are shown below:

Figure 35: Relationship between trustworthiness and average utility

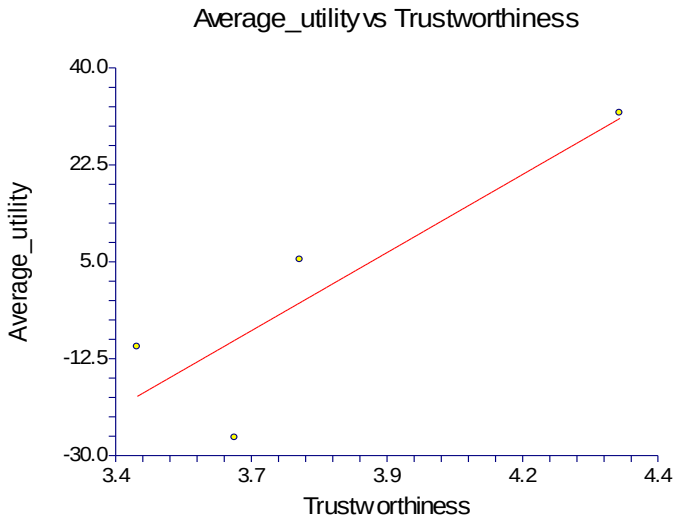


Figure 36: Relationship between value for money and average utility

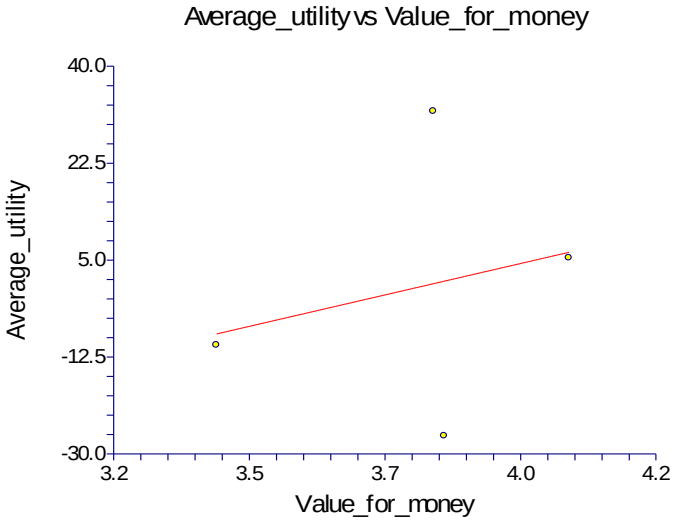


Figure 37: Relationship between "good service" and average utility



Figure 38: Relationship between customer-focussed and average utility

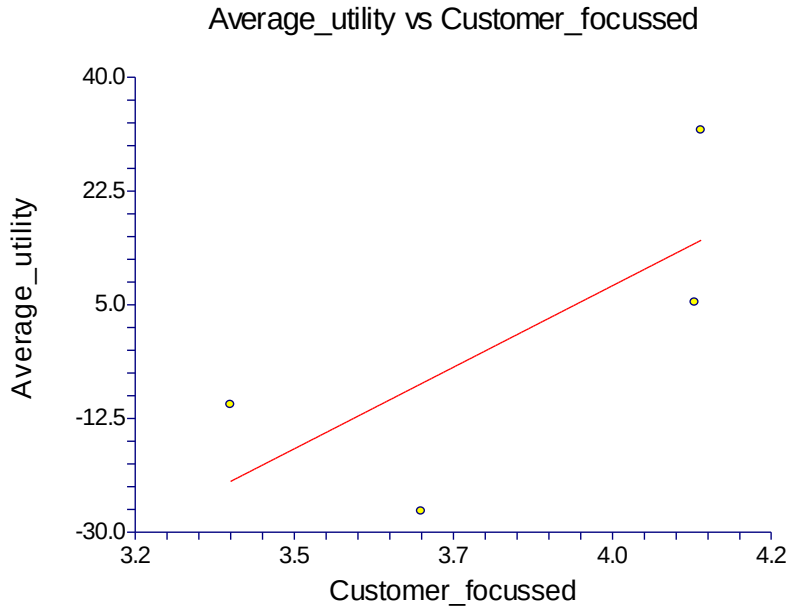
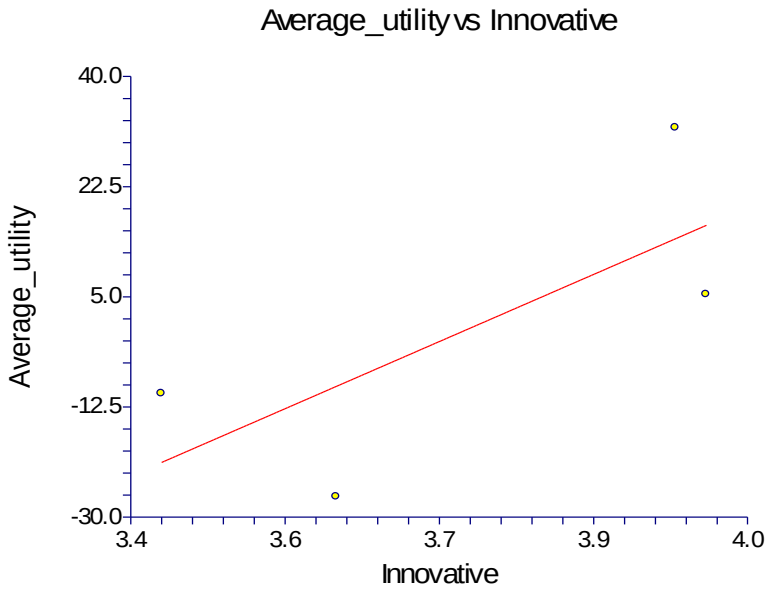


Figure 39: Relationship between innovative and average utility



There is a positive relationship between each of the statements and the average utility obtained. The higher the mean of the statement, the higher the average utility obtained.

The table below shows the R-squared and the correlation values for the regression. R- squared is the proportion of the variation in average utility that is accounted for by the variation in the quality statement. The correlation value indicates the degree of association between each statement and the utility. The results show that of all the five statements, the "trustworthy" statement has the highest correlation value and the highest R-squared. From the latter, we can deduct that 76% of variability in average utility is explained by the variability in "trustworthy" statement.

The "value for money" statement is the one with the weaker relationship as the proportion of the variation in average utility that can be accounted for by the variation in the "value for money" statement is only 6%. The correlation coefficient is 0.25. This is the only statement where the correlation coefficient is less than 0.5. There is a high degree of correlation between the quality statements and the average utility for all the other statements.

The proportions of the variation in average utility that can be accounted for by the variation in "innovative", "customer-focussed" and "good service" are 54%, 52% and 38% respectively.

Table 30: Linear regression output

	Trustworthy	Value for money	Good service	Innovative	Customer focussed
R-squared	0.76	0.06	0.38	0.54	0.52
Correlation	0.87	0.25	0.63	0.74	0.72

The details of the regression output are shown in Appendices K, L, M, N and O.

6 INTERPRETATION OF RESULTS

This chapter discusses the results presented in the previous chapter. The findings from the quantitative research will be analysed with respect to each research proposition and compared to existing research and theory gleaned from the literature review. Each research proposition will be examined thoroughly so as to determine whether they are fully, partially or not supported at all by the findings of this research.

6.1 Research Proposition 1

The first research Proposition was:

- The Brand is a major influencing factor in the selection of an Internet Service Provider.

This research proposition was investigated through the conjoint analysis. Conjoint analysis results provided the conjoint importance for each attribute (brand, reliability, performance, price, value added services and technical assistance). The relative importance of each of these attributes on the customer's decision making was presented in Section 5.8. The objective was to discover to what extent each of these attributes drives the decision to use a particular Internet Service Provider.

The research results undoubtedly show that the brand is not the most important attribute considered when selecting an Internet Service Provider. The brand is the second most important attribute and drives 20% of the decision. Reliability comes out as the most important attribute and explains 23.45% of the decision. Performance is the third most important attribute and explains 18.10% of the decisions made. A detailed analysis of the relative importance of the brand according to the socio-demographic profile of respondents shows that older age groups and higher income groups tend to attribute more importance to the brand.

The cluster analysis also demonstrated that the segments were mainly quality conscious (the foremost variables from cluster 1 and cluster 3 were performance

and reliability). Cluster 3 however attributed some importance to the brand and could be termed the “quality and brand conscious” segment.

Reliability and performance can be viewed as the two dimensions of the quality of the Internet network. Together they account for 41.55% of the decision made. The average utilities obtained for each level of these two attributes are shown below. Conjoint utilities decrease as the network becomes less reliable or as performance decreases.

Figure 40: Average utilities for reliability

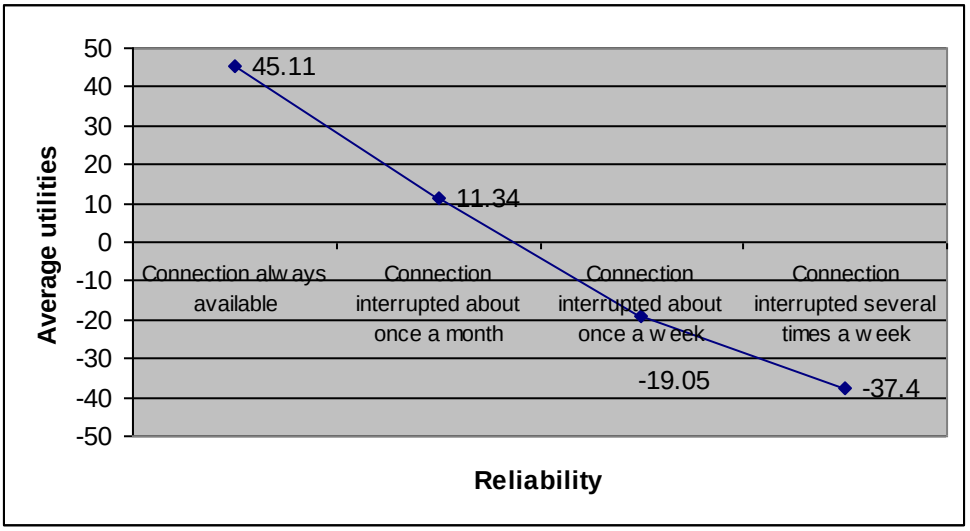
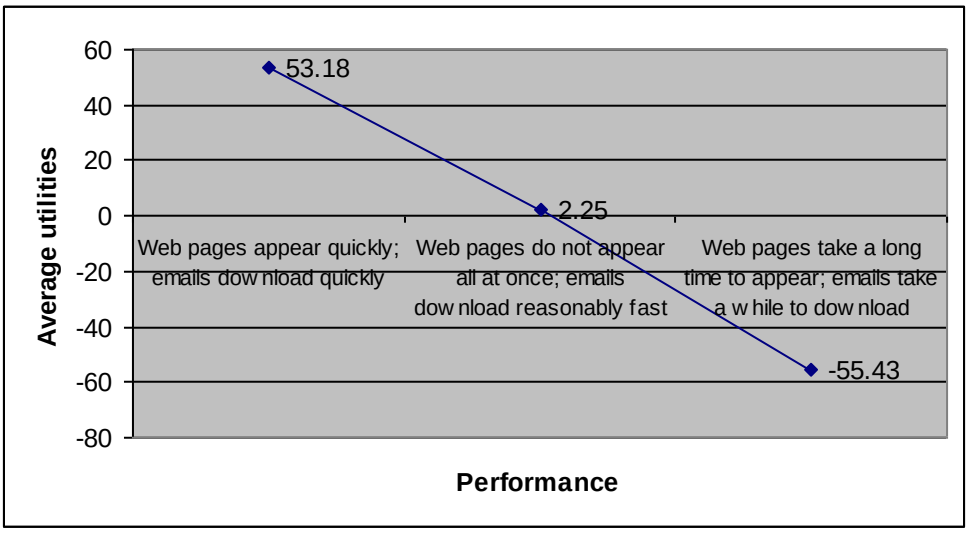


Figure 41: Average utilities for performance



The results regarding the importance of reliability and performance may not be viewed as surprising. Quality is often considered as one dimension of brand equity. Lassar *et al* (1995) include performance in their brand equity dimensions. According to Arora & Stoner (1996), high quality products and services are considered essential for a successful competitive strategy. Arora & Stoner (1996) argue in one of their research on the automobile insurance industry that name familiarity and service quality influence the intention to use a service. Sheth *et al* (1999) identified performance as one benefit sought for on purchase and use of a product or service. Parasuraman *et al* (1985) acknowledged reliability as one of the ten fundamental dimensions of service attributes that were used by customers when evaluating the quality of services provided by service companies. Bennett's (1997) buyer disposition model includes quality and performance under Value and reliability under Viability. Service quality has been considered as a major concern by Asuboteng *et al* (1996) and the famous SERQUAL measure is based on customer's perceptions of service quality. Zeithaml *et al* (1996) developed a model to show that service quality leads to favourable customer behaviour towards the brand. Zeithaml *et al* (1996) showed strong evidence in an empirical study that customers were influenced by service quality.

In the Internet access industry, the quality of service may be considered essential since customer experience when surfing or downloading emails can be negatively impacted by an unreliable and poorly performing connection. Furthermore researches conducted by marketing research firms have shown that the key determinants of customer choice in the Internet access industry is reliability (Pastore, 2001; Earthlink, 2003)

The conjoint importance shows that the brand is not the most important factor considered by respondents during their purchase decision. The brand is surpassed by reliability. However the brand name does play a major role in the choice of an Internet Service Provider since it is the second most important factor and explains 20% of decision. The results of this research align with the theory

found during the literature review. The importance of the brand as a strategic asset and a source of sustainable competitive advantage has been recognised by many marketing authors (Aaker, 1996; Doyle, 1998; Wood, 2000 and Vedpuriswar, 2001). Its significance on the customer decision-making process in the services industry has also been put forward by many marketing researchers and authors even though opinions on marketing and branding strategies differ (Levitt, 1981; Onkvisit & Shaw, 1989; Blankson & Kalafatis, 1999; Bharadwaj *et al*, 1993; Levy, 1996; McDonald *et al,* 2001; Krishnan & Hartline, 2001; Keller, 2003; O'Cass & Grace, 2003 and Matear *et al*, 2004).

Whereas it is commonly believed that the Internet market is a price sensitive market, it is to be noted that price is the fourth determinant of customer choice and the price sensitive cluster accounts for only 13% of the respondents.

The first research proposition is fully supported by research findings. The brand is a major influencing factor in the selection of an Internet Service Provider.

6.2 Research Proposition 2

The second research proposition was:

- Brand equity exists in the Internet access industry in the form of customers' willingness to pay a price premium.

The determination of the existence of price premium in the Internet access industry was done by:

1) Examination of the correlation between the importance of the brand and the importance of the price.

2) Using the Linear interpolation formula in order to calculate potential price premium.

The brand-price relationship was examined by using the Spearman correlation technique. This is shown in section 5.8.6. A weak, negative relationship was

found between the conjoint importance for brand and the conjoint importance for price. This implies that the importance of the price decreases as the importance of the brand increases. Price premium can therefore be considered to exist in the Internet access industry. Many authors have emphasised the ability of a strong brand to command a higher profit margin and price premium (Aaker, 1991; Lassar *et al*, 1995; Doyle, 1998; Jackson, 1999 and Keller, 2003). Aaker (1996:321) even argued that price premium may be "the best single measure of brand equity available".

Linear interpolation was used to determine the price premium that could be asked by the leader brand. The conjoint utilities for brand and price were used. The different utilities obtained for each brand and price levels are shown below. Brand utilities range from 31.83 for the most preferred brand to -26.79 for the least preferred brand. Price utilities range from 41.80 for the lowest price level (20 cents) to -47.64 for the higher price of 60 cents. As the price increases, the utility decreases.

Figure 42: Average utilities for each brand level

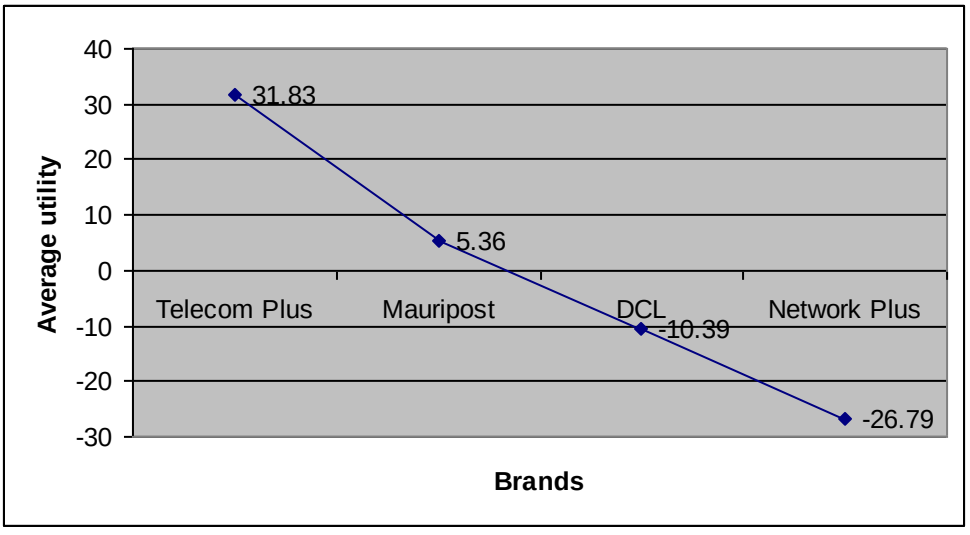
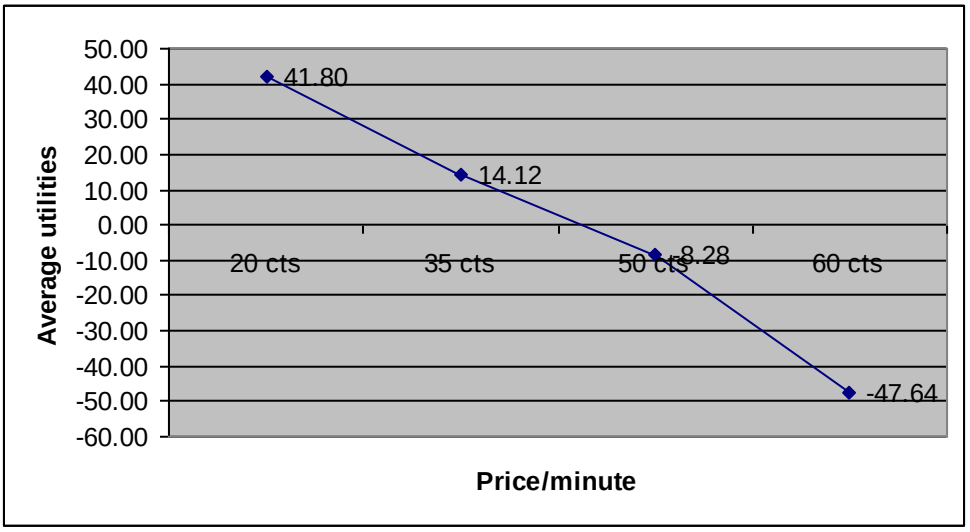


Figure 43: Average utilities for price



The above figure provides the utility levels for price 35 cents and 50 cents. The price having null utility can therefore be calculated with linear interpolation. Linear interpolation is a technique that is used to fill in missing values in a table. Using the linear interpolation formula,

Equation 5

$Y = mX + C$ where $m = (Y_1 - Y_0)/(X_1 - X_0)$

And Y=C when X=0

Then the price having null utility (average utility =0) is calculated to be 45 cents.

In section 4, it was said that the additive model was used for the conjoint design. Respondents added up the sum of the part-worths (levels of attributes) to get the value for a product profile. Hence the sum of product profile utilities therefore indicates respondents' preferences.

Equation 6

Preference = Brand effect + Reliability effect+ Performance effect+ Price effect+ Value added services effect+ Technical assistance effect

All other factors remaining constant, the most preferred brand with an average utility of PLUS 31.83 can increase its price up to a level corresponding to a level of Minus 31.83 before the brand-price equation is equal to zero. Using the linear interpolation formula this price is calculated to be 55 cents. All other factors remaining constant, at the price of 55 cents per minute, the most preferred brand has the same utility as the average brand at 45 cents per minute. The price premium that a brand leader can afford is therefore calculated to be 22% above the average price.

Similarly using the linear interpolation formula, the discounted price that must be charged by the least preferred brand can be calculated. All other factors remaining constant, the least preferred brand with a utility of MINUS 26.79 must discount its price so that the brand–price equation equals zero. Using linear interpolation this discounted price is calculated to be 29 cents (35% below the average price of 45 cents per minute).

A brand leader can therefore charge 22% above the average price and the least preferred brand must charge 35% below the average price.

Research proposition 2 is partially supported by the research findings. There is a weak negative relationship between the brand and the price importance. A price premium can be charged by the market leader brand. This price premium has been calculated to be a maximum of 22% above the average price. Brand equity exists in the Internet access industry in the form of customer's willingness to pay a price premium.

6.3 Research Proposition 3

The third research proposition was:

- Perceived quality and brand awareness are the two most important sources of Brand Equity.

The above proposition states that perceived quality and brand awareness are the most important sources of brand equity. Three components of brand equity were investigated in order to determine which one impacted the most on brand equity (measured through the brand preference (utility) expressed by the respondents). These components were brand awareness, brand loyalty and perceived quality.

In this quantitative research, brand awareness measurement was done through the spontaneous brand recall question for the service and corporate brand. The corporate brand with the highest utility (Telecom Plus/Mauritius Telecom) did achieve the greatest level of awareness (77%). However the brand with the second largest utility had the lowest corporate brand awareness. With respect to the service brands, the market leader brand has the highest utility and brand awareness. But there were no significant differences between the levels of awareness for the other service brands.

Table 31: Average utilities and awareness levels

Corporate brand	Average utility	Level of awareness For corporate brand	Level of awareness for service brand
Telecom Plus (Mauritius Telecom)/Servihoo	31.83	77%	39%
Data Communications Ltd./DCL Internet/Smartnet	-10.39	49%	DCL Internet 5% Smartnet 11%
Network Plus/NetAccess	-26.79	35%	11%
Mauripost/Clickpost	5.36	24%	13%

The two-sample T-Test in Section 5.10.1 showed that there is no sufficient evidence to support the hypothesis that the means of utilities for the “brand aware” and “not brand aware” groups differ. This implies that brand awareness does not play any significant role in the building up of brand equity. These findings somewhat contradict the theory put forward by many marketing authors. Brand awareness is commonly cited as a source of brand equity (Keller, 1993, 2003; Aaker, 1996; Doyle, 1998 and Berry, 2000). Brand awareness is considered to bring the product in the customer’s consideration set (Doyle, 1998;

Keller, 2003) and influence the formation and strength of brand associations in the customer's mind (Keller, 2003). Awareness "can be a driver in some categories, and it usually has a key role to play in brand equity" (Aaker, 1996:330).

The reasons behind these findings may be found in the current structure of the Mauritian Internet access industry. The market leader, Telecom Plus, has been operating since 1996 and is the first service provider in that sector. It operated in a monopolistic situation until 2001 when the Internet market was liberalised. Telecom Plus is a subsidiary of Mauritius Telecom, the national telephone operator. This may explain the high level of awareness for Mauritius Telecom/Telecom Plus. Mauripost is the Internet Service Provider with the second largest utility but also the lowest awareness level. Its entrance on the Internet market is rather recent (2004) which may explain the low level of awareness. Mauripost is a subsidiary of Mauritius Post, a government owned institution which has provided postal services to Mauritians for decades.

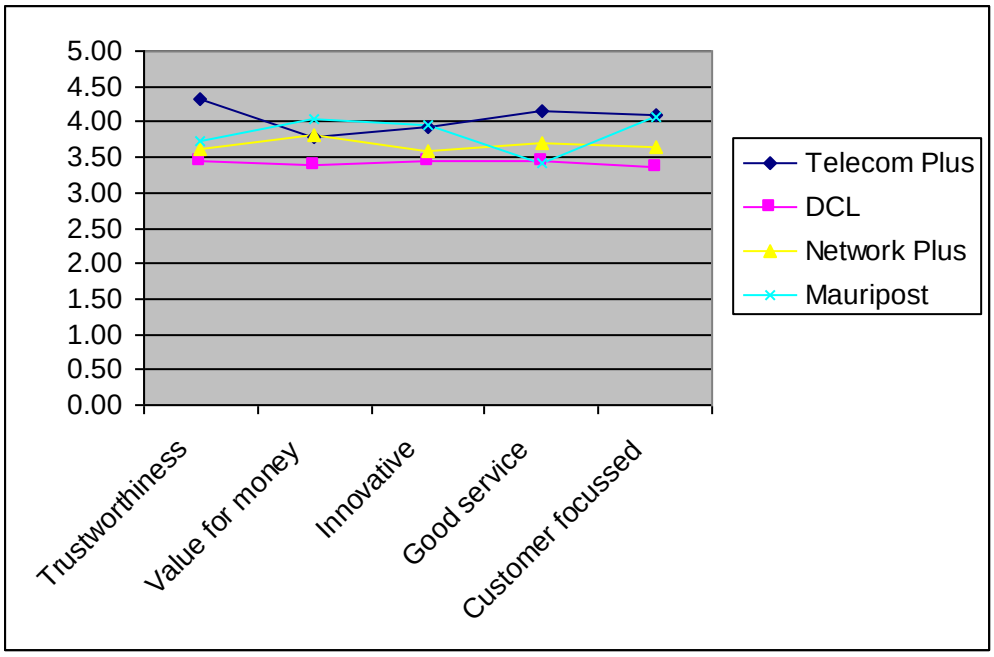
Brand loyalty was also investigated to test its significance in relation to brand equity. Brand loyalty was investigated through the shifting and recommendation intentions expressed by respondents. Results from the survey shows that the respondents using only the brand with the highest average utility (Telecom Plus) also expressed the lowest intention to shift. Respondents using multiple service providers had a higher intention to shift. Recommendation intention is not very different across the respondents. Further analysis on the brand loyalty behaviour of respondents was made with a two-sample T Test in Section 5.10.2. The results showed that there may be a difference between the brand utilities for the "brand loyal" group as compared to the "not brand loyal" group for Telecom Plus. This hypothesis somewhat converges with theories put forward by major marketing authors. Brand loyalty is considered by many authors as one component of brand equity (Lassar *et al*, 1995; Aaker, 1996 and Wood, 2000). For Wood (2000), brand strength (loyalty) leads to brand value and market power. Aaker (1996) argues that brand loyalty generates predictable sales and

profit stream, represents an entry to barrier for competitors and a possible price premium.

The Internet access industry seems characterised by customers using multiple service providers. The sample for the research was taken from Telecom Plus' database of customers. Twelve percent of respondents used one or even two other Internet Service Providers. Cant *et al* (2002) used the term "vulnerability" to distinguish loyal customers (those who both buy and like the brand) from those customers who buy a brand but like other brands just as well or better. The latter are therefore more "vulnerable" since they do not stick to one brand but buy several brands. These 12% may represent the vulnerable group.

Perceived quality was tested through a set of statements on which respondents were requested to indicate their level of agreement or disagreement. The descriptive statistics for each of the quality statements yielded interesting results. The brands with the highest utility (Telecom Plus and Mauripost) ranked either first or second on most of the quality statements. The figure below shows the relative positions of each mean for each statement.

Figure 44: Means for each statement



The magnitude of the mean shows the importance in perceptions regarding each statement for each Internet Service Provider. Telecom Plus, the corporate brand with the highest average utility, has either the first or second highest mean. An exception occurs only on the "value for money" statement where it ranks third. Mauripost, the corporate brand with the second largest average utility, ranks first on two out of five statements. Its mean ranks second on the "trustworthiness" and "customer-focussed" statements but drops to the last place on the "offers good service" statement. Furthermore, the linear regression that was made in Section 5.10.3 identified a positive relationship between each statement and the average utility. Variation in average utility can be explained by the variation in all five quality statements. Research findings therefore argue in favour of the link between perceived quality and brand equity. Perceived quality is considered as a full-fledged component of brand equity and is thought to drive financial performance and the perceptions of other product attributes (Aaker, 1996). In the service industry, the importance of service quality perceptions on the customer's intention to use a brand has also been highlighted by many marketing authors (Zeithaml *et al*, 1996; Arora & Stoner, 1996 and Keller, 2003). Keller (2003) recognises that consumer beliefs with respect to quality related dimensions of the product affect customer behaviour towards a brand. Gronroos (1988) recognises that the quality of service is subjective and that the gap between expected and experienced quality determines the total perceived quality.

The results show that there is substantial ground for upholding the third proposition with regards to perceived quality. Perceived quality is an important source of brand equity. There is not sufficient evidence to uphold the third proposition with regards to brand awareness. It has not been proven that brand awareness is a major component of brand equity in the Internet access industry.

Therefore research proposition three is partially upheld by research findings. Perceived quality is a major source of brand equity in the Internet access

industry. Brand awareness has not been proven to be a major source of brand awareness in the Internet Access industry.

6.4 Research Proposition 4

The fourth research proposition is as follows:

- Advertising is the most effective medium for building brand equity.

Arguments in favour of advertising as a means of creating awareness and shaping customers' perceptions about a brand abound in marketing literature. Berry (2000) argues that the primary source of brand awareness is the company's controlled communications (advertising, service facilities, name and logo). According to Cobb-Walgren *et al* (1995), advertising contributes to the building up the brand associations and brand awareness. Farr (1996) also argue in favour of advertising influences on the successful creation of brand awareness and perceptions on product performance. Chaudhuri (2002) argue that one of the routes for greater brand reputation and greater market share is through advertising. Keller (2003) also recognises that marketing communications contribute significantly to the building of brand equity by creating brand awareness and strong and favourable brand associations. O'Cass & Grace (2003) found that brochures and advertisements were also key brand dimensions in the customer decision making.

The survey results show that advertising is indeed very important in awareness creation. Three out of the first five means of awareness mentioned by respondents refer to an advertising media (newspapers/magazines, television and radio). Similarly the most frequently cited means through which respondents knew about their Internet Service Provider include press advertising and television advertising among the top three means.

However the influence of reference groups should not be underestimated. Awareness of the brand coming through "friends, relatives and colleagues" was cited by 45% of respondents. This made it the third most frequently cited means

of awareness. Fifty-three percent of respondents cited their friends, colleagues and relatives as being the means whereby they became aware of the Internet Service Provider that they currently use. Family and peer group influences have long been recognised by marketing authors. Cant *et al* (2002) included external influences (family, reference groups etc) in their overall model of customer behaviour. Sheth *et al* (1999) also discuss about external sources of information (personal/social sources etc) which serve as input to the mental processes that will determine customer choice. O'Cass & Grace's (2003) dimensions include word of mouth and the image of the other users of the service. Du Plessis & Rousseau (2003:210) argue that "service buyers are guided in their behaviour not only by their own motives and attitudes, but also by those of the reference groups to which they belong". Non-advertising sources of information are therefore almost as important as advertising for building brand awareness.

The research assumption was that advertising leads to brand awareness which in turn, contributes to brand equity. However the link between brand awareness and brand equity was not proven as mentioned in the interpretation of proposition three. The fourth research proposition is therefore not supported by research findings.

6.5 Conclusion

The research findings have shown that the brand is a major influencing factor in the selection of an Internet Service Provider. Research proposition 1 is therefore upheld.

A correlation technique and linear interpolation exercises have demonstrated the negative relationship between brand and price importance and the existence of a price premium in the Internet access industry. Research proposition 2 is therefore upheld. Brand equity exists in the Internet access industry in the form of customers' willingness to pay a price premium.

Statistical testing has demonstrated that there is no difference between the average utilities of the "brand aware" and the "not brand aware" respondents.

Therefore brand awareness link to the creation of brand equity has not been proven. A linear regression exercise between the average utilities and the means obtained for the quality statements has uncovered a positive linear relationship between the two. Therefore research proposition 3 is partially supported by research findings. Perceived qualiy is a major component of brand equity. Brand awareness is not a major source of brand equity.

Research proposition 4 was based on the assumption that advertising builds awareness, one of the components of brand equity. While advertising has been proven to be one of the means to build awareness, the link between brand awareness and brand equity has not been proven. Research proposition 4 is not supported by research findings.

7 CONCLUSIONS

7.1 Introduction

In this chapter the main findings of the research will first be highlighted. Then some recommendations relevant to industry players will be made. The limitations of the research will be discussed. Finally some potential areas for future research will be proposed.

7.2 Highlights of the research

The findings from the research show that the brand is indeed, as put forward in the first research proposition, a major factor that influences the intention to use an Internet Service Provider. The brand is not however the most important determinant of customer choice: it is the second most important service attribute. The service quality dimension comes out as the predominant factor: the reliability of the Internet connection and its performance were respectively first and third in importance.

Brand awareness, contrarily to assumptions derived from the literature review, does not come out as one major source of brand equity. When means of utilities for “brand aware’ respondents and “not brand aware” respondents were compared, no significant differences were found.

Perceived quality came out as a major source of brand equity. Regression analysis between the set of quality statements and the average utilities obtained for each brand showed that there is a positive relationship between these two variables.

Brand loyalty’s relationship to brand equity may exist. Respondents using only one brand expressed a lesser intention to shift than those using multiple providers. Hypothesis testing showed that there may be a difference between the utilities obtained for “brand loyal” and the “not brand loyal” groups.

Both advertising and non-advertising sources like the reference groups were found to be important in the creation of brand awareness.

7.3 Limitations

Limitations of this research were mainly found in the sample size. The sample size taken for both the qualitative and quantitative survey was small. Furthermore, both the qualitative and quantitative survey samples were convenient samples since they were extracted from the database of one Internet Service Provider.

7.4 Recommendations to industry

A common assumption made by various operators on the Internet market in Mauritius is that this market is a very price sensitive one. Results from the research disprove this theory since price did not come out as a major determinant of customer choice. Current challengers on the Internet market or new entrants may not compete on price. Instead they can benefit from investment in the building up of brand equity. This can provide them with a competitive edge and can be translated into an ability to charge a price premium over other brands.

Service quality in the Internet access market is important. Internet access service provision is a best effort service. International bandwidth is one of the major cost elements for Internet Service Providers operating in Mauritius. Hence ISPs' objective is to optimise their network utilisation and often bandwidth management is a key issue. It is essential for companies to recognise that optimisation of network resources should not be made at the detriment of the end-user's surfing experience. On the Dial up market, the end-user looks for minimum disruption of connection and enhanced surfing experience through reasonably fast download. ISPs should concentrate on providing service quality that meets customer expectations. They should identify the areas for improvement and put in place adequate monitoring systems to ensure a

minimum amount of disturbance. They should also provide adequate network capacity to prevent Internet congestion.

ISPs should bear in mind at all times that setting and enforcing rules in order to provide a good service quality to their customers may not lead to greater brand equity or market share. Providing a good quality of service (according to each ISP's criteria) does not equal having a good perceived quality by the customer. What matters the most is what resides in the customer's mind and not what has been put into place by the organisation to ensure consistent and good quality. ISPs should therefore work at improving or inculcating good quality perceptions on the part of their customers. They should however beware of making quality promises or claims that cannot be achieved or seem unrealistic to their customers. Experienced quality should at all times be equal to expected quality. Internet Service Providers should invest the necessary financial resources in order to improve the perceptions of quality of their customers. This is the route towards brand equity.

ISPs stand to gain by installing regular customer feedback processes with respect to the quality of service. This should be made so that any gap or deviation can be remedied.

Advertising is undeniably an important way to build brand awareness. However Internet Service Providers stand to gain from word of mouth communication and referrals. One important outcome of this research was the discovery that family members and reference groups do play a major role in the creation of brand awareness. Using reference groups to influence customers' perception may be a less costly way to build up brand awareness and develop positive associations about the brand.

There is no customer lock-in on the dial up market contrarily to other types of access technology where associated costs and equipment may deter the customer from moving out. In that context, brand loyalty is also another avenue to be considered by the ISP for maintaining its customer base. It will seem from

the research that brand loyalty do contribute to the formation of brand equity. It may be worthwhile for Internet Service Providers to build up brand loyalty programs. At the same time Internet Service Providers may find it useful to investigate on the why's of switchers.

7.5 Suggested areas for further research

This research has focused on the brand and its relative importance in the Internet access industry. There are several areas that could be further studied.

- Brand equity in the Internet access business market.

  This research has focussed on the dial up residential Internet market in Mauritius. There may be scope for further research on the business market in order to investigate whether the Business customer behaviour differ from the residential customer behaviour.

- Brand equity for other types of access technology.

  While service quality and brand came out as major determinants of customer choice on the dial up market, it may also be useful to investigate other types of access technology. As an example, access through Asymmetric Digital Subscriber Line (ADSL) has been growing since the last two years. The ADSL customer and the Dial up customer are thought to have distinct usage pattern on the Internet since the ADSL customer has the ability to enjoy real time and multimedia applications. It is believed that performance (speed of connection) is key decision making criteria. Hence it would be worthwhile to investigate whether the key determinants of customer decision-making is similar to that of the dial up market.

- Brand loyalty behaviour and its antecedents

  This research has uncovered a potential link between brand loyalty and brand equity. It would be interesting to probe further on the issue of brand loyalty in

the Internet sector in Mauritius and investigate its various antecedents and consequences.

- The relationship between quality perceptions, quality experiences and brand loyal behaviour

The concept of brand loyalty and quality perceptions may be linked as good perceived quality may lead to a decision to stay with the firm and a badly perceived quality may lead to a decision to switch to another firm. As a result one potential area for research is to explore the link between the customer's quality perceptions and experiences and his/her decision to remain with or move away from the firm.

- The importance of the brand across other sectors with the telecommunication market could be done (mobile, fixed local telephony, voice over IP).

The telecommunication market can be further subdivided into many sectors (mobile, fixed telephony etc.). In Mauritius, this market is facing many changes since its liberalisation and the entrance of many new players. While this has definitely increased customer choice in such areas as international telephony, there has been a paucity of research on the telecom market in Mauritius. It would be worthwhile to investigate whether current findings are consistent across these different sectors.

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APPENDICES

Appendix A: Sample Questionnaire for Qualitative Research

Internet Survey Questionnaire

Thank you for taking your time to answer this questionnaire.

Q1. Which Internet Service Providers do you know or have you heard of?

Q2. Which Internet access brands do you know or have you heard of?

Q3. How have you heard about those Internet Service Providers?

Q4. What are all the criteria that you would take into account when choosing your Internet Service Provider?

Q5. Sex Male □ Female □

Q6. Age

18-29 years □ 30-39 years □

40-49 years □ 50 years and more □

Q7. Monthly income of household **(optional)**

Rs2000 or less	□	Rs2001-4000	□
Rs4001-6000	□	Rs6001-8000	□
Rs8001-10000	□	Rs10001-12000	□
Rs12001-14000	□	Rs14001-16000	□
Rs16001-18000	□	Rs18001-20000	□
Rs20001-30000	□	More than Rs30000	□

Q8. Your Internet Service Provider is …….

Q9. Your Internet Access Brand is…….

Thank you very much for your cooperation

Appendix B: Letter from DCDM Business School

DCDM Business School

Leading Business Knowledge Propagators

DCDM

P.O. Box 19,
Quatre Bornes
Mauritius

Orbis Court
132, St. Jean Road
Quatre Bornes
Mauritius
(230) 466 0234 Telephone
(230) 465 1312 Facsimile

A subsidiary of De Chazal Du Mée, Mauritius
Offices in Madagascar, Kenya, Malawi, Tanzania, Uganda, Zamdia, Chad, Rwanda, Réunion Island and Botswana

16 November 2004

To Whom It May Concern

This is to confirm that Ms Sandra JEAN LOUIS is a registered student on The Master of Business Administration (MBA) programme of Graduate School of Business Administration of the University of the Witwatersrand (Wits Business School), which is offered in Mauritius through the DCDM Business School.

One of the requirements of the degree is the generation of a Research Report. We would be most appreciative if you and your organisation could provide Ms Jean Louis with any assistance she may require in this respect.

Yours sincerely

Prof E Charoux
Executive Director

Web site: http://www.dcdmbs.com

Appendix C: Sample letter from the researcher

Miss Sandra Jean-Louis
24 Saran Villa Lane
Belle Etoile

December 2004

Dear Sir,

I am doing a market research on Internet in the context of my Master in Business Administration (MBA). This MBA is organised in Mauritius by DCDM Business School and the University of Witwatersrand (South Africa).

I would be very grateful if you could participate in that survey by completing the enclosed questionnaire. Your answers will of course be treated as confidential. I have attached an envelope with the postage fee already taken care of. You can use this envelope to send me back the questionnaire.

Thank you very much for your collaboration.

Regards,

Sandra Jean-Louis (Miss)

Appendix D: Sample Questionnaire for Quantitative Research (English version)

SURVEY ON INTERNET

Good morning Sir/Madam,

I am doing a survey on Internet in the context of my MBA studies at the University of Witwatersrand (South Africa). I would be grateful if you could participate in this survey by answering the following questions or by putting a tick in the appropriate boxes. Your answers to this survey will remain confidential. Thank you.

This questionnaire should be answered by the person in your family who has subscribed to Internet or usually buys prepaid cards.

Part 1

Q1.1 Are you the one who has subscribed to the Internet or who buys prepaid cards?

Yes □ No □

Q1.2 Which Internet Service Providers do you know or have you heard of?

_____

_____

Q1.3 Which Dial up Internet access brands (names of the Internet access services on a traditional 56k connection via your telephone line) do you know or have you heard of?

_____

_____

Q1.4 How have you heard about the Internet Service Provider(s) /Internet access brands mentioned in Q1.2 & Q1.3)? (Multiple answers possible)

Advertisement in newspapers/magazines	□	Advertisement on radio	□
Advertisement on TV	□	Billboards	□
Bus Stops advertisement	□	Bus advertisement	□
Friends, relatives, colleagues	□	Advertisement on web	□
Articles in the press	□	News on Television/radio	□
Web sites/ISP web sites	□		

Others, please specify …….

Q1.5 To what extent would you agree that Servihoo/Telecom Plus

	Agree strongly	Rather agree	Neither agree nor disagree	Rather disagree	Strongly disagree
Is trustworthy					
Offers good value for money					
Is innovative					
Offers good service					
Is customer focussed					

IF YOU KNOW ABOUT DCL INTERNET & SMARTNET/DATA COMMUNICATIONS LTD. PLEASE ANSWER Q1.6, IF NOT PLEASE GO TO Q1.7

Q1.6 To what extent would you agree that the DCL Internet and Smartnet/DCL

	Agree strongly	Rather agree	Neither agree nor disagree	Rather disagree	Strongly disagree
Is trustworthy					
Offers good value for money					
Is innovative					
Offers good service					
Is customer focussed					

IF YOU KNOW ABOUT NETACCESSS/NETWORK PLUS, PLEASE ANSWER Q1.7, IF NOT PLEASE GO TO Q1.8

Q1.7 To what extent would you agree that Netaccess/Network Plus

	Agree strongly	Rather agree	Neither agree nor disagree	Rather disagree	Strongly disagree
Is trustworthy					
Offers good value for money					
Is innovative					
Offers good service					
Is customer focussed					

IF YOU KNOW ABOUT CLICKPOST/MAURIPOST, PLEASE ANSWER Q1.8, IF NOT PLEASE GO TO Q1.9

Q1.8 To what extent would you agree that the Clickpost/Mauripost is

	Agree strongly	Rather agree	Neither agree nor disagree	Rather disagree	Strongly disagree
Is trustworthy					
Offers good value for money					
Is innovative					
Offers good service					
Is customer focussed					

Q1.9. Which Internet Service Provider(s) have you subscribed to/do you use?

Telecom Plus	□	Data Communication Ltd. (DCL)	□
Network Plus	□	Mauripost	□

Q1.10 Would you recommend your Internet Service provider to your relatives, friends or colleagues?

Yes certainly	□	Yes probably	□
No certainly not	□	No probably not	□
Don't know	□		

Q1.11 Do you intend to change your ISP?

Yes certainly	□	Yes probably	□
Non certainly not	□	No probably not	□
Don't know	□		

Q1.12 How have you heard about your Internet Service Provider(s)? (multiple answers possible)

Advertisement in newspapers/magazines	□	Advertisement on radio	□
Advertisement on TV	□	Billboards	□
Bus Stops advertisement	□	Bus advertisement	□
Friends, relatives, colleagues	□	Advertisement on web	□
Articles in the press	□	News on Television/radio	□
Web sites/ISP web sites	□		

Others, please specify …….

PART 2

Q2.1. Sex Male □ Female □

Q2.2 Age

Less than 18 yrs □ 18-29 years □ 30-39 years □

40-49 years □ 50 – 59 years □ More than 60 years □

Q2.3 Monthly income of household

Rs5000 or less □ Rs5001-10000 □ Rs10001-Rs20000 □

Rs20001-Rs25000 □ Rs25001-Rs30000 □ Rs30001-Rs35000 □

Rs35001-Rs40000 □ Rs40001-Rs45000 □ Rs45001-Rs50000 □

More than Rs50 000 □

Q2.4 In which region do you live?

Urban region □ Rural region □

Q2.5 What is your profession?

Legislators, senior officials and managers	
Professionals	
Technicians and associate professionals	
Clerks	
Skilled agricultural workers	
Craft and related trades workers	
Plant and machine operators and assemblers	
Housewife	
Retired	
Student	
Others, please specify …….	

PART 3

Please indicate the likelihood that you would use these Internet Service Providers (ISPs) by rating from 0 to 10, 0 means "definitely WOULD NOT USE this ISP" and 10 meaning "definitely WOULD USE this ISP". Scores between 0 and 10 allows you to give your intermediate appreciation.

How likely would you be to use the following Internet Service Provider?
Mauripost / Clickpost Rs0.35 per minute Web pages takes a long time to appear ; emails take a while to download Connection interrupted several times per week No value added services Technical hotline available during office hours **Your score here** ☐
On this scale, « 0 » ,means « Definitely would NOT use this ISP » and « 10 » means « Definitely WOULD use this ISP »

How likely would you be to use the following Internet Service Provider?
Network Plus/NetAccess Rs0.35 per minute Web pages do not appear all at once ; emails download reasonably Connection interrupted several times per week No value added services No technical hotline **Your score here** ☐
On this scale, « 0 » ,means « Definitely would NOT use this ISP » and « 10 » means « Definitely WOULD use this ISP »

How likely would you be to use the following Internet Service Provider?
DCL (Data Communication Ltd.) / Smartnet and DCL Internet Rs0.50 per minute Web pages appear quickly ;emails download quickly Connection interrupted several times per week Value added services (email, antivirus, web pages etc.) available Technical Hotline available during office hours **Your score** ☐
On this scale, « 0 » ,means « Definitely would NOT use this ISP » and « 10 » means « Definitely WOULD use this ISP »

How likely would you be to use the following Internet Service Provider?
Network Plus/NetAccess Rs0.50 per minute Web pages appear quickly ;emails download quickly Connection interrupted about once a week Value added services (email, antivirus, web pages etc) available No technical hotline **Your score here** ☐
On this scale, « 0 » ,means « Definitely would NOT use this ISP » and « 10 » means « Definitely WOULD use this ISP »

How likely would you be to use the following Internet Service Provider?
Telecom Plus (Mauritius Telecom)/Servihoo Rs0.50 per minute Web pages appear quickly ;emails download quickly Connection always available Value added services (email, antivirus, web pages webs etc.) available No technical hotline available **Your score here** ☐
On this scale, « 0 » ,means « Definitely would NOT use this ISP » and « 10 » means « Definitely WOULD use this ISP »

How likely would you be to use the following Internet Service Provider?
Mauripost/Clickpost Rs0.20 per minute Web pages do not appear all at once ;emails download reasonably fast Connection interrupted about once a month Value added services (email, antivirus, web pages webs etc.) available No technical hotline **Your score here** ☐
On this scale, « 0 » ,means « Definitely would NOT use this ISP » and « 10 » means « Definitely WOULD use this ISP »

How likely would you be to use the following Internet Service Provider?
Network Plus/Net Access Rs0.20 per minute Web pages appear quickly, emails download quickly Connection interrupted several times a week Value added services (email, antivirus, web pages etc) available Technical hotline available 24 hours every day **Your score here** ☐
On this scale, « 0 » ,means « Definitely would NOT use this ISP » and « 10 » means « Definitely WOULD use this ISP »

How likely would you be to use the following Internet Service Provider?
Telecom Plus (Mauritius Telecom)/Servihoo Rs0.20 per minute Web pages appear quickly ; emails download quickly Connection interrupted about once a month No value added services (email, antivirus, web pages etc) Technical hotline technique available during office hours **Your score here** ☐
On this scale, « 0 » ,means « Definitely would NOT use this ISP » and « 10 » means « Definitely WOULD use this ISP »

How likely would you be to use the following Internet Service Provider?
Mauripost/Clickpost Rs0.50 per minute Web pages do not appear all at once ; emails download reasonably fast Connection interrupted several times per week No value added services No technical hotline technique **Your score here** ☐
On this scale, « 0 » ,means « Definitely would NOT use this ISP » and « 10 » means « Definitely WOULD use this ISP »

How likely would you be to use the following Internet Service Provider?
DCL (Data Communications Ltd.)/Smartnet et DCL Internet Rs0.60 per minute Web pages appear quickly ;emails download quickly Connection interrupted about once a month No value added services (email, antivirus, web pages etc) No technical hotline **Your score here** ☐
On this scale, « 0 » ,means « Definitely would NOT use this ISP » and « 10 » means « Definitely WOULD use this ISP »

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Mauripost/Clickpost Rs0.35 per minute Web pages appear quickly ;emails download quickly Connection interrupted about once per week No value added services Technical hotline available 24 hours every day **Your score here** ☐
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On this scale, « 0 » ,means « Definitely would NOT use this ISP » and « 10 » means « Definitely WOULD use this ISP »

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Telecom Plus (Mauritius Telecom)/Servihoo Rs0.35 la minute Web pages donot appear all at once ;emails download reasonably fast Connection always available Value added services (email, antivirus, web pages webs etc.) available Technical hotline available during office hours **Your score here** ☐
On this scale, « 0 » ,means « Definitely would NOT use this ISP » and « 10 » means « Definitely WOULD use this ISP »

How likely would you be to use the following Internet Service Provider?
Telecom Plus (Mauritius Telecom)/Servihoo Rs0.60 per minute Web pages take a long time to appear ;emails take a while to download Connection interrupted several times per week Value added services (email, antivirus, web pages etc) available No technical hotline **Your score here** ☐
On this scale, « 0 » ,means « Definitely would NOT use this ISP » and « 10 » means « Definitely WOULD use this ISP »

How likely would you be to use the following Internet Service Provider?
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How likely would you be to use the following Internet Service Provider?
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On this scale, « 0 » ,means « Definitely would NOT use this ISP » and « 10 » means « Definitely WOULD use this ISP »

Thank you very much for your collaboration

Appendix E : Sample Questionnaire for Quantitative Research (French version)

ETUDE SUR INTERNET

Bonjour Monsieur/Madame. Je réalise actuellement une enquête sur Internet dans le cadre de mes études de MBA à l'Université de Witwatersrand (Afrique du Sud). Merci de participer à cette enquête en répondant aux questions ci -dessous ou en cochant les cases appropriées. Vos réponses demeureront confidentielles.

Ce questionnaire doit être complété par la personne dans votre foyer qui s'est abonnée à Internet ou qui achète des cartes prépayées.

Partie 1

Q1.1 Etes-vous la personne dans votre famille qui s'est abonnée à Internet ou qui achète habituellement des cartes Internet prépayées?

Oui □ Non □

Q1.2 Quels sont les fournisseurs d'accès à Internet que vous connaissez ou dont vous avez entendu parler?

_____

_____

Q1.3 Quels sont les marques d'accès Dial up à Internet (noms des services Internet en connexion classique de 56k via votre ligne de téléphone) que vous connaissez ou dont vous avez entendu parler?

_____

_____

Q1.4 Comment avez-vous entendu parler des fournisseurs d'accès à Internet/marques d'accès Internet mentionnés dans les questions 1.2 & 1.3?*(plusieurs réponses possibles)*

Publicité dans les journaux/magazines □ Publicité à la radio □

Publicité à la télé □ Panneaux d'affichage □

Publicité sur les Bus Stops □ Publicité sur les Bus □

Parents, amis, collègues □ Publicité sur le web □

Articles dans la presse □ Infos à la télé/radio □

Sites Web/Sites webs des fournisseurs d'accès à Internet □

Autres, merci de spécifier …….

Q1.5 Globalement, diriez-vous que vous êtes tout à fait d'accord, plutôt d'accord, ni d'accord ni pas d'accord, plutôt pas d'accord, pas d'accord du tout avec les phrases suivantes.

Servihoo/Telecom Plus …

	Tout à fait d'accord	Plutôt d'accord	Ni d'accord ni pas d'accord	Plutôt pas d'accord	Pas du tout d'accord
Inspire confiance					
Offre un bon rapport qualité/prix					
Innove					
Offre un bon service					
Est orientée client					

SI VOUS CONNAISSEZ DCL INTERNET ET SMARTNET/DATA COMMUNICATION LTD, MERCI DE REPONDRE A LA QUESTION 1.6. SINON PASSEZ A LA QUESTION 1.7

Q1.6 Globalement, diriez-vous que vous êtes tout à fait d'accord, plutôt d'accord, plutôt pas d'accord, ni d'accord ni pas d'accord avec les phrases suivantes.

DCL Internet et Smartnet/Data Communications Limited (DCL) …

	Tout à fait d'accord	Plutôt d'accord	Ni d'accord ni pas d'accord	Plutôt pas d'accord	Pas du tout d'accord
Inspire confiance					
Offre un bon rapport qualité/prix					
Innove					
Offre un bon service					
Est orientée client					

SI VOUS CONNAISSEZ NETACCESS/NETWORK PLUS, MERCI DE REPONDRE A LA QUESTION 1.7. SINON PASSEZ A LA QUESTION 1.8

Q1.7 Globalement, diriez-vous que vous êtes tout à fait d'accord, plutôt d'accord, plutôt pas d'accord, ni d'accord ni pas d'accord avec les phrases suivantes.

NetAccess/Network Plus ….

	Tout à fait d'accord	Plutôt d'accord	Ni d'accord ni pas d'accord	Plutôt pas d'accord	Pas du tout d'accord
Inspire confiance					
Offre un bon rapport qualité/prix					
Innove					
Offre un bon service					
Est orientée client					

SI VOUS CONNAISSEZ CLICKPOST/MAURITIUS POST, MERCI DE REPONDRE A LA QUESTION 1.8. SINON PASSEZ A LA QUESTION 1.9

Q1.8 Globalement, diriez-vous que vous êtes tout à fait d'accord, plutôt d'accord, plutôt pas d'accord, ni d'accord ni pas d'accord, avec les phrases suivantes.

Clickpost/Mauripost …

	Tout à fait d'accord	Plutôt d'accord	Ni d'accord ni pas d'accord	Plutôt pas d'accord	Pas du tout d'accord
Inspire confiance					
Offre un bon rapport qualité/prix					
Innove					
Offre un bon service					
Est orientée client					

Q1.9 Chez quel(s) fournisseur(s) d'accès à Internet êtes-vous abonné ou utilisez-vous?

Telecom Plus	□	Data Communication Ltd. (DCL)	□
Network Plus	□	Mauripost	□

Q1.10 Recommanderiez votre fournisseur d'accès à vos parents, amis ou collègues?

Oui, certainement	□	Oui, probablement	□
Non, certainement pas	□	Non, probablement pas	□
Ne sait pas	□		

Q1.11 Avez-vous l'intention de changer de fournisseur d'accès à Internet?

Oui, certainement	□	Oui, probablement	□
Non, certainement pas	□	Non, probablement pas	□
Ne sait pas	□		

Q1.12 Comment avez-vous entendu parler de votre fournisseur d'accès à Internet?

Publicité dans les journaux/magazines	□	Publicité à la radio	□
Publicité à la télé	□	Panneaux d'affichage	□
Publicité sur les Bus Stops	□	Publicité sur les Bus	□
Parents, amis, collègues	□	Publicité sur le web	□
Articles dans la presse	□	Infos à la télé/radio	□

Sites Web/Sites webs des fournisseurs d'accès à Internet □

Autres, merci de spécifier …….

PARTIE 2

Q2.1. Sexe Homme □ Femme □

Q2.2 Age

Moins de 18 ans	□	18-29 ans	□	30-39 ans	□
40-49 ans	□	50 – 59 ans	□	Plus de 60 ans	□

Q2.3 Revenu mensuel du foyer

Rs5000 ou moins	□	Rs5001-10000	□	Rs10001-Rs20000	□
Rs20001-Rs25000	□	Rs25001-Rs30000	□	Rs30001-Rs35000	□
Rs35001-Rs40000	□	Rs40001-Rs45000	□	Rs45001-Rs50000	□
Plus de Rs50 000	□				

Q2.4 Où habitez-vous?

Région urbaine □ Région rurale □

Q2.5 Votre profession

Cadres supérieur du secteur privé et public	
Professionnels	
Techniciens	
Employé de bureau	
Travailleurs agricoles	
Artisans	
Ouvrier d'usine/machinistes	
Femme au foyer	
Retraité	
Etudiant	
Autres, merci de spécifier ……	

PARTIE 3

Merci d'indiquer la probabilité que vous utiliserez les fournisseurs d'accès à Internet (FAI) suivants en donnant des points de 0 à 10, 0 signifiant «N'utilisera certainement pas ce FAI » et 10 « Utilisera certainement ce FAI », les notes intermédiaires servant à nuancer votre jugement.

Quelle est la probabilité que vous utiliserez ce fournisseur d'accès à Internet (FAI) ?
Mauripost / Clickpost Rs0.35 la minute Les pages web prennent beaucoup de temps pour apparaître, les emails prennent du temps pour être télécharger (download) La connexion est interrompue plusieurs fois par semaine Aucun service à valeur ajoutée (email, antivirus, pages webs etc.) La hotline technique (assistance téléphonique) est disponible pendant les heures de bureau **Votre évaluation ici** ☐
Sur cette échelle, "0" signifie "**N'utilisera certainement PAS** ce FAI" et "10" signifie "**Utilisera certainement** ce FAI"

Quelle est la probabilité que vous utiliserez ce fournisseur d'accès à Internet (FAI) ?
Network Plus/NetAccess Rs0.35 la minute Les pages webs n'apparaissent pas d'un seul coup, les emails sont téléchargés à une vitesse raisonnable La connexion est interrompue plusieurs fois par semaine Aucun service à valeur ajoutée (email, antivirus, pages webs etc.) Pas de hotline technique (assistance téléphonique) **Votre évaluation ici** ☐
Sur cette échelle, "0" signifie "**N'utilisera certainement PAS** ce FAI" et "10" signifie "**Utilisera certainement** ce FAI"

Quelle est la probabilité que vous utiliserez ce fournisseur d'accès à Internet (FAI) ?
DCL (Data Communication Ltd.) / Smartnet et DCL Internet Rs0.50 la minute Les pages webs apparaissent rapidement, les emails sont téléchargés rapidement La connexion est interrompue plusieurs fois par semaine Services à valeur ajoutée (email, antivirus, pages webs etc.) sont disponibles Hotline technique (assistance téléphonique) est disponible pendant les heures de bureau **Votre évaluation ici** ☐
Sur cette échelle, "0" signifie "**N'utilisera certainement PAS** ce FAI" et "10" signifie "**Utilisera certainement** ce FAI"

Quelle est la probabilité que vous utiliserez ce fournisseur d'accès à Internet (FAI) ?
Network Plus/NetAccess Rs0.50 la minute Les pages webs apparaissent rapidement, les emails sont téléchargés rapidement La connexion est interrompue une fois par semaine Services à valeur ajoutée (email, antivirus, pages webs etc) sont disponibles Pas de hotline technique (assistance téléphonique) **Votre évaluation ici** ☐
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Telecom Plus (Mauritius Telecom)/Servihoo Rs0.50 la minute Les pages webs apparaissent rapidement, les emails sont téléchargés rapidement La connexion est toujours disponible Services à valeur ajoutée (email, antivirus, pages webs etc.) sont disponibles Pas de hotline technique (assistance téléphonique) **Votre évaluation ici** ☐
Sur cette échelle, "0" signifie "**N'utilisera certainement PAS** ce FAI" et "10" signifie "**Utilisera certainement** ce FAI"

Quelle est la probabilité que vous utiliserez ce fournisseur d'accès à Internet (FAI) ?
Mauripost/Click Post Rs0.20 la minute Les pages webs n'apparaissent pas d'un seul coup, les emails sont téléchargés à une vitesse raisonnable La connexion est interrompue une fois par mois Services à valeur ajoutée (email, antivirus, pages webs etc.) sont disponibles Pas de hotline technique (assistance téléphonique) Sur cet **Votre évaluation ici** "N **a certainement PAS** ce FAI" et "10" signifie "**Utilisera certainement** ce FAI"

Quelle est la probabilité que vous utiliserez ce fournisseur d'accès à Internet (FAI) ?
Network Plus/Net Access Rs0.20 la minute Les pages webs apparaissent rapidement, les emails sont téléchargés rapidement La connexion est interrompue plusieurs fois par semaine Services à valeur ajoutée (email, antivirus, pages webs etc) sont disponibles Hotline technique (assistance téléphonique) est disponible 24/24 tous les jours Sur cette éch **Votre évaluation ici** **ili tainement PAS** ce FAI" et "10" signifie "**Utilisera certainement** ce FAI"

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Quelle est la probabilité que vous utiliserez ce fournisseur d'accès à Internet (FAI) ?
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Sur cette échelle, "0" signifie "**N'utilisera certainement PAS** ce FAI" et "10" signifie "**Utilisera certainement** ce FAI"

Quelle est la probabilité que vous utiliserez ce fournisseur d'accès à Internet (FAI) ?
Mauripost/Clickpost Rs0.20 la minute Les pages webs prennent beaucoup de temps pour apparaître, les emails prennent du temps pour être téléchargés (download) La connexion est interrompue une fois par semaine Services à valeur ajoutée (email, antivirus, pages webs etc) sont disponibles Hotline technique (assistance téléphonique) est disponible pendant les heures de bureau **Votre évaluation ici** ☐
Sur cette échelle, "0" signifie "**N'utilisera certainement PAS** ce FAI" et "10" signifie "**Utilisera certainement** ce FAI"

Quelle est la probabilité que vous utiliserez ce fournisseur d'accès à Internet (FAI) ?
Telecom Plus (Mauritius Telecom)/Servihoo Rs0.60 la minute Les pages webs prennent beaucoup de temps pour apparaître, les emails prennent du temps pour être téléchargés (download) La connexion est interrompue une fois par semaine Aucun service à valeur ajoutée (email, antivirus, pages webs etc) Hotline technique (assistance téléphonique) est disponible 24/24 tous les jours **Votre évaluation ici** ☐
Sur cette échelle, "0" signifie "**N'utilisera certainement PAS** ce FAI" et "10" signifie "**Utilisera certainement** ce FAI"

Quelle est la probabilité que vous utiliserez ce fournisseur d'accès à Internet (FAI) ?
DCL(Data Communications Ltd.)/DCL Internet et Smartnet Rs0.35 la minute Les pages webs n'apparaissent pas d'un seul coup, les emails sont téléchargés à une vitesse raisonnable La connexion est interrompue une fois par mois Services à valeur ajoutée (email, antivirus, pages webs etc) sont disponibles Hotline technique (assistance téléphonique) est disponible 24/24 tous les jours **Votre évaluation** ☐
Sur cette échelle, "0" signifie "**N'utilisera certainement PAS** ce FAI" et "10" signifie "**Utilisera certainement** ce FAI"

Quelle est la probabilité que vous utiliserez ce fournisseur d'accès à Internet (FAI) ?
DCL(Data Communications Ltd.)/DCL Internet et Smartnet Rs0.50 la minute Les pages webs prennent beaucoup de temps pour apparaître, les emails prennent du temps pour être téléchargés (download) La connexion est toujours disponible Services à valeur ajoutée (email, antivirus, pages webs etc) ne sont pas disponibles Hotline technique (assistance téléphonique) est disponible 24/24 tous les jours **Votre évaluation ici** ☐
Sur cette échelle, "0" signifie "**N'utilisera certainement PAS** ce FAI" et "10" signifie "**Utilisera certainement** ce FAI"

Quelle est la probabilité que vous utiliserez ce fournisseur d'accès à Internet (FAI) ?
DCL(Data Communications Ltd.)/DCL Internet et Smartnet Rs0.35 la minute Les pages webs apparaissent rapidement, les emails sont téléchargés rapidement La connexion est interrompue une fois par semaine Aucun service à valeur ajoutée (email, antivirus, pages webs etc.) Pas de hotline technique (assistance téléphonique) **Votre évaluation ici** ☐
Sur cette échelle, "0" signifie "**N'utilisera certainement PAS** ce FAI" et "10" signifie "**Utilisera certainement** ce FAI"

Quelle est la probabilité que vous utiliserez ce fournisseur d'accès à Internet (FAI) ?
Mauripost/Clickpost Rs0.60 la minute Les pages webs apparaissent rapidement, les emails sont téléchargés rapidement La connexion est toujours disponible Services à valeur ajoutée (email, antivirus, pages webs etc.) sont disponibles Hotline technique (assistance téléphonique) est disponible 24/24, tous les jours **Votre évaluation ici** ☐
Sur cette échelle, "0" signifie "**N'utilisera certainement PAS** ce FAI" et "10" signifie "**Utilisera certainement** ce FAI"

Quelle est la probabilité que vous utiliserez ce fournisseur d'accès à Internet (FAI) ?
DCL(Data Communications Ltd.)/DCL Internet et Smartnet Rs0.60 la minute Les pages webs n'apparaissent pas d'un seul coup, les emails sont téléchargés à une vitesse raisonnable La connexion est interrompue une fois par semaine Services à valeur ajoutée (email, antivirus, pages webs etc.) sont disponibles Hotline technique (assistance téléphonique) est disponible pendant les heures de bureau **Votre évaluation ici** ☐
Sur cette échelle, "0" signifie "**N'utilisera certainement PAS** ce FAI" et "10" signifie "**Utilisera certainement** ce FAI"

Quelle est la probabilité que vous utiliserez ce fournisseur d'accès à Internet (FAI) ?
DCL (Data Communications Ltd.)/DCL Internet et Smartnet Rs0.20 la minute Les pages webs prennent beaucoup de temps pour apparaître, les emails prennent du temps pour être téléchargés (download) La connexion est toujours disponible Aucun service à valeur ajoutée (email, antivirus, pages webs etc.) Pas de hotline technique (assistance téléphonique) **Votre évaluation ici** ☐
Sur cette échelle, "0" signifie "**N'utilisera certainement PAS** ce FAI" et "10" signifie "**Utilisera certainement** ce FAI"

Quelle est la probabilité que vous utiliserez ce fournisseur d'accès à Internet (FAI) ?
Network Plus/NetAccess Rs0.35 la minute Les pages webs prennent beaucoup de temps pour apparaître, les emails prennent du temps pour être téléchargés (download) La connexion est interrompue une fois par mois Services à valeur ajoutée (email, antivirus, pages webs etc.) sont disponibles Hotline technique (assistance téléphonique) est disponible 24/24 tous les jours **Votre évaluation ici** ☐
Sur cette échelle, "0" signifie "**N'utilisera certainement PAS** ce FAI" et "10" signifie "**Utilisera certainement** ce FAI"

Quelle est la probabilité que vous utiliserez ce fournisseur d'accès à Internet (FAI) ?
Network Plus/NetAccess Rs0.50 la minute Les pages webs prennent beaucoup de temps pour apparaître, les emails prennent du temps pour être téléchargés (download) La connexion est interrompue une fois par mois Aucun service à valeur ajoutée (email, antivirus, pages webs etc) Hotline technique (assistance téléphonique) est disponible pendant les heures de bureau **Votre évaluation ici** ☐
Sur cette échelle, "0" signifie "**N'utilisera certainement PAS** ce FAI" et "10" signifie "**Utilisera certainement** ce FAI"

Quelle est la probabilité que vous utiliserez ce fournisseur d'accès à Internet (FAI) ?
Network Plus/NetAccess Rs0.60 la minute Les pages webs n'apparaissent pas d'un seul coup, les emails sont téléchargés a une vitesse raisonnable La connexion est toujours disponible Aucun service à valeur ajoutée (email, antivirus, pages webs etc) Hotline technique (assistance téléphonique) est disponible pendant les heures de bureau **Votre évaluation ici** ☐
Sur cette é **rtainement PAS** ce FAI" et "10" signifie "**Utilisera certainement** ce FAI"

Merci de votre collaboration

Appendix F: Rescaling procedure for the Likert Scale

F.1 RESCALING FOR TELECOM PLUS

Eigenvalue Section

Factor No.	Eigenvalue	Individual Percent	Cumulative Percent	Bar Chart
1.	0.04	62.23	62.23	|||\

F.2 RESCALING FOR DCL

Eigenvalue Section

Factor No.	Eigenvalue	Individual Percent	Cumulative Percent	Bar Chart
1	0.03299	68.91	68.91	|||\

F.3 RESCALING FOR NETWORK PLUS

Eigenvalue Section

Factor No.	Eigenvalue	Individual Percent	Cumulative Percent	Bar Chart
1	0.010902	53.51	53.51	|||\

F.4 RESCALING FOR MAURIPOST

Eigenvalue Section

Factor No.	Eigenvalue	Individual Percent	Cumulative Percent	Bar Chart
1	0.199901	63.74	63.74	|||\

Annex G: Analysis of variance report for the attributes

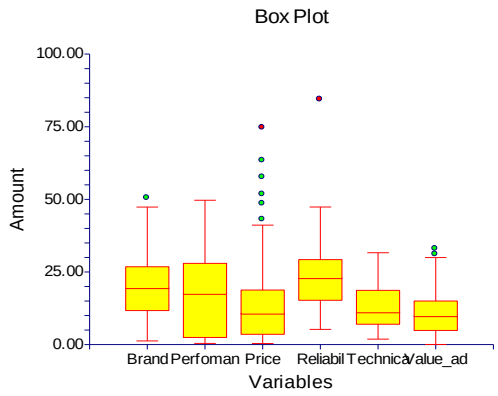
Analysis of Variance Report

Page/Date/Time	1 10/05/2005 18:35:33
Database	C:\Documents and Settings\Sa ... results\Prop1\data sheet.S0
Response	Brand,Perfomance,Price,Reliability,Technical_assistance,Value_added_services

Tests of Assumptions Section

Assumption	Test Value	Prob Level	Decision (0.05)
Skewness Normality of Residuals	9.2428	0.000000	Reject
Kurtosis Normality of Residuals	6.6300	0.000000	Reject
Omnibus Normality of Residuals	129.3868	0.000000	Reject
Modified-Levene Equal-Variance Test	10.4959	0.000000	Reject

Box Plot Section



Expected Mean Squares Section

Source Term	DF	Term Fixed?	Denominator Term	Expected Mean Square
A (...)	5	Yes	S(A)	S+sA
S(A)	504	No		S(A)

Note: Expected Mean Squares are for the balanced cell-frequency case.

Analysis of Variance Table

Source Term	DF	Sum of Squares (Alpha=0.05)	Mean Square	F-Ratio	Prob Level	Power
A (...)	5	9488.305	1897.661	14.33	0.000000*	1.000000
S(A)	504	66754.7	132.4498			
Total (Adjusted)	509	76243				
Total	510					

* Term significant at alpha = 0.05

Analysis of Variance Report

Page/Date/Time	2 10/05/2005 18:35:33
Database	C:\Documents and Settings\Sa ... results\Prop1\data sheet.S0
Response	Brand,Perfomance,Price,Reliability,Technical_assistance,Value_added_services

Kruskal-Wallis One-Way ANOVA on Ranks
Hypotheses
Ho: All medians are equal.
Ha: At least two medians are different.

Test Results

Method	DF	Chi-Square (H)	Prob Level	Decision(0.05)
Not Corrected for Ties	5	77.17928	0.000000	Reject Ho
Corrected for Ties	5	77.17942	0.000000	Reject Ho

Number Sets of Ties	32
Multiplicity Factor	246

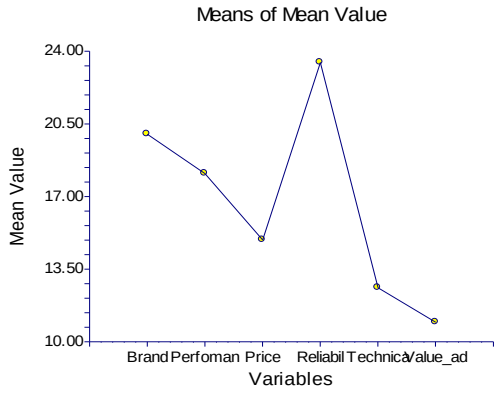
Group Detail

Group	Count	Sum of Ranks	Mean Rank	Z-Value	Median
Brand	85	26416.00	310.78	3.7882	19.54
Perfomance	85	22251.00	261.78	0.4301	17.58
Price	85	18184.50	213.94	-2.8485	10.76
Reliability	85	29466.50	346.66	6.2477	22.98
Technical_assistance	85	18208.00	214.21	-2.8296	11.22
Value_added_services	85	15779.00	185.64	-4.7880	9.88

Means and Effects Section

Term	Count	Mean	Standard Error	Effect
All	510	16.66674		16.66674
A:				
Brand	85	20.00082	1.248292	3.334079
Perfomance	85	18.10165	1.248292	1.434902
Price	85	14.90612	1.248292	-1.760628
Reliability	85	23.45106	1.248292	6.784314
Technical_assistance	85	12.60023	1.248292	-4.06651
Value_added_services	85	10.94059	1.248292	-5.726157

Plots of Means Section



Analysis of Variance Report

Page/Date/Time 3 10/05/2005 18:35:33
Database C:\Documents and Settings\Sa ... results\Prop1\data sheet.S0
Response Brand,Perfomance,Price,Reliability,Technical_assistance,Value_added_services

Tukey-Kramer Multiple-Comparison Test

Response: Brand,Perfomance,Price,Reliability,Technical_assistance,Value_added_services
Term A:

Alpha=0.050 Error Term=S(A) DF=504 MSE=132.4498 Critical Value=4.0457

Group	Count	Mean	Different From Groups
Value_added_services	85	10.94059	Perfomance, Brand, Reliability
Technical_assistance	85	12.60023	Perfomance, Brand, Reliability
Price	85	14.90612	Brand, Reliability
Perfomance	85	18.10165	Value_added_services, Technical_assistance Reliability
Brand	85	20.00082	Value_added_services, Technical_assistance Price
Reliability	85	23.45106	Value_added_services, Technical_assistance Price, Perfomance

Notes:
This report provides multiple comparison tests for all pairwise differences between the means.

Appendix H: K-Means Cluster Analysis report

K-Means Cluster Analysis Report

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Database C:\Documents and Settings\Sa ... ats results\con utilities.S0

Minimum Iteration Section

Iteration No.	No. of Clusters	Percent of Variation	Bar Chart of Percent
3	2	81.49	|||||||||||||||||||||||
6	3	63.20	||||||||||||||||||
8	4	54.06	||||||||||||||||
12	5	47.23	||||||||||||||

Iteration Section

Iteration No.	No. of Clusters	Percent of Variation	Bar Chart of Percent
1	2	93.29	||||||||||||||||||||||||||
2	2	81.79	|||||||||||||||||||||||
3	2	81.49	|||||||||||||||||||||||
4	3	72.53	||||||||||||||||||||
5	3	66.01	||||||||||||||||||
6	3	63.20	||||||||||||||||||
7	4	62.64	||||||||||||||||||
8	4	54.06	||||||||||||||||
9	4	55.77	||||||||||||||||
10	5	48.55	||||||||||||||
11	5	49.05	||||||||||||||
12	5	47.23	||||||||||||||

Cluster Means

Variables	Cluster1	Cluster2	Cluster3
Brand	17.39075	17.61636	23.84294
Price	12.6275	46.39727	7.39853
Perfomance	31.423	4.441818	6.848824
Reliability	18.09625	19.13364	31.14765
Value_added_services	8.518	5.65	15.50235
Technical_assistance	11.94475	6.761818	15.26029
Count	40	11	34

Cluster Standard Deviations

Variables	Cluster1	Cluster2	Cluster3
Brand	9.141793	6.727993	11.09526
Price	8.801768	14.58559	5.548032
Perfomance	8.687181	5.781991	6.183819
Reliability	7.702011	8.296201	12.64648
Value_added_services	6.228582	4.101039	8.160671
Technical_assistance	6.073689	3.819759	7.703761
Count	40	11	34

K-Means Cluster Analysis Report

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F-Ratio Section

Variables	DF1	DF2	Between Mean Square	Within Mean Square	F-Ratio	Prob Level
Brand	2	82	418.4725	94.81023	4.41	0.015116
Price	2	82	6516.338	75.17719	86.68	0.000000
Perfomance	2	82	6728.062	55.359	121.54	0.000000
Reliability	2	82	1683.037	100.9706	16.67	0.000001
Value_added_services	2	82	625.0903	47.30349	13.21	0.000011
Technical_assistance	2	82	316.3629	43.20835	7.32	0.001187

Distance Section

Row	Cluster	Dist1	Dist2	Dist3
1	1	1.2947	4.2380	3.1287
2	1	1.7271	4.0596	2.8156
3	1	1.7063	4.0752	3.5507
4	2	2.8968	0.7762	2.8544
5	3	3.1922	4.3343	2.3998
6	1	1.4840	3.2867	2.6247
7	1	1.6266	2.8288	2.7591
8	1	1.5273	2.9884	2.5022
9	1	1.2209	3.3511	3.4261
10	3	3.2062	3.5376	1.6342
11	3	3.0432	3.3917	1.9443
12	3	3.2726	4.2656	1.6219
13	3	3.7909	4.1023	2.6880
14	3	2.5856	3.7017	0.8992
15	3	2.6381	3.2516	1.2872
16	3	3.1916	3.3228	2.3575
17	2	3.5001	0.8799	3.8082
18	2	4.2145	2.0209	4.6377
19	3	1.6997	3.3154	1.3282
20	1	2.1286	2.4979	3.3145
21	1	1.8429	2.3710	3.1072
22	1	2.5385	4.3204	2.9968
23	2	4.9191	2.3826	5.5447
24	2	3.0726	1.8413	2.8248
25	1	0.8778	2.9728	2.1565
26	3	3.3568	4.6213	2.7571
27	1	1.6742	3.1965	2.7407
28	2	2.7028	1.3446	3.2922
29	3	3.6227	4.4678	2.4568
30	1	1.6368	3.2321	3.8547
31	3	3.2114	3.9124	1.3537
32	3	3.0015	3.8662	1.4279
33	3	2.3450	3.8159	1.8093
34	1	1.3557	3.0613	2.1503
35	3	2.5723	2.7599	1.3533
36	3	2.1567	3.3393	1.2948
37	3	2.4934	2.7294	1.0533
38	3	3.5684	4.2532	2.6445

39	3	3.2803	3.4307	1.8474
40	3	3.0318	4.1502	2.2685
41	1	1.1510	2.7387	3.1946
42	2	4.0604	1.4091	4.4670
43	1	1.6734	3.8635	2.1401
44	2	2.0399	1.1427	2.4313
45	1	2.3395	4.5312	4.0640
46	1	1.9318	3.9035	4.1616
47	3	3.0556	4.0289	1.8278
48	1	2.0110	2.6205	2.3516

K-Means Cluster Analysis Report

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Database C:\Documents and Settings\Sa ... ats results\con utilities.S0

Distance Section

Row	Cluster	Dist1	Dist2	Dist3
49	1	2.1748	3.1878	2.6300
50	3	3.9149	4.8285	2.7064
51	3	3.7650	4.1250	2.5585
52	3	3.2758	4.1600	1.2092
53	3	3.6723	4.4023	2.0250
54	3	3.2320	3.9062	1.7901
55	3	3.6232	4.7692	2.2154
56	1	1.9441	3.7639	2.2457
57	2	3.2285	1.2463	3.4472
58	1	2.4692	3.7957	2.9408
59	1	2.0459	2.7286	3.6810
60	1	0.6439	3.1869	2.8172
61	1	2.4466	3.3653	3.5837
62	1	1.7393	4.0407	2.7402
63	2	3.3204	1.0031	3.2832
64	1	2.0928	3.6358	2.1848
65	3	2.3067	3.9257	2.0526
66	1	2.0623	2.3225	3.5655
67	3	3.8310	4.3061	3.0511
68	3	1.9537	3.7999	1.6629
69	3	3.5824	3.8968	2.9002
70	1	1.3697	3.1078	2.2168
71	1	1.9929	4.6088	3.7358
72	3	1.8705	3.5885	1.2867
73	3	2.5931	3.0893	1.9662
74	1	1.3610	3.6762	2.7505
75	1	2.1171	3.3992	2.4995
76	1	0.7565	2.4093	2.2132
77	1	1.2906	4.0018	2.4275
78	1	1.7279	3.9083	2.8254
79	1	1.9821	4.1451	3.5836
80	1	1.7437	3.5350	3.0861
81	3	6.2590	6.4410	5.4321
82	1	2.1082	4.2055	2.8069
83	1	2.2877	4.0315	2.6381
84	1	1.4755	2.8726	2.4609
85	2	2.0690	1.9369	2.5043

Appendix I: Two-sample T-Test for Brand Awareness

I.1 Combination 1: Awareness for Mauritius Telecom

Two-Sample Test Report

Page/Date/Time 1 26/04/2005 20:39:41
Database C:\Documents and Settings\Sa ... rand awareness data sheet.S0
Variable MT_TP_Servihoo

Descriptive Statistics Section

Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
MT=0	58	31.21011	60.63347	7.961565	15.26735	47.15287
MT=1	27	33.15563	52.40617	10.08557	12.42444	53.88682

Note: T-alpha (MT=0) = 2.0025, T-alpha (MT=1) = 2.0555

Equal-Variance T-Test Section

Alternative Hypothesis	Power T-Value (Alpha=.01)	Prob Level	Decision (5%)	Power (Alpha=.05)
Difference <> 0	-0.1435	0.886221	Accept Ho	0.052309
Difference < 0	0.010742 -0.1435	0.443110	Accept Ho	0.066485
Difference > 0	0.014439 -0.1435	0.556890	Accept Ho	0.036951

Difference: (MT=0)-(MT=1)

0.006802

Tests of Assumptions Section

Assumption	Value	Probability	Decision(5%)
Skewness Normality (MT=0)	0.8349	0.403780	Cannot reject normality
Kurtosis Normality (MT=0)	1.7892	0.073576	Cannot reject normality
Omnibus Normality (MT=0)	3.8984	0.142387	Cannot reject normality
Skewness Normality (MT=1)	-0.3038	0.761290	Cannot reject normality
Kurtosis Normality (MT=1)	-0.3432	0.731477	Cannot reject normality
Omnibus Normality (MT=1)	0.2100	0.900304	Cannot reject normality
Variance-Ratio Equal-Variance Test variances	1.3386	0.419453	Cannot reject equal
Modified-Levene Equal-Variance Test variances	0.2573	0.613355	Cannot reject equal

I.2 Combination 2: Awareness for Telecom Plus

Two-Sample Test Report

Page/Date/Time 1 26/04/2005 20:42:40
Database C:\Documents and Settings\Sa ... rand awareness data sheet.S0
Variable MT_TP_Servihoo

Descriptive Statistics Section

Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
TP=0	47	20.46221	54.99121	8.021293	4.316188	36.60824

TP=1	38	45.8859	58.89645	9.554266	26.52712
	65.24468				

Note: T-alpha (TP=0) = 2.0129, T-alpha (TP=1) = 2.0262

Equal-Variance T-Test Section

Alternative Hypothesis	Power T-Value (Alpha=.01)	Prob Level	Decision (5%)	Power (Alpha=.05)
Difference <> 0	-2.0530	0.043223	Reject Ho	0.527634
	0.286471			
Difference < 0	-2.0530	0.021612	Reject Ho	0.652233
	0.379504			
Difference > 0	-2.0530	0.978388	Accept Ho	0.000116
	0.000007			

Difference: (TP=0)-(TP=1)

Tests of Assumptions Section

Assumption	Value	Probability	Decision(5%)
Skewness Normality (TP=0)	-1.2082	0.226963	Cannot reject normality
Kurtosis Normality (TP=0)	0.5102	0.609886	Cannot reject normality
Omnibus Normality (TP=0)	1.7201	0.423134	Cannot reject normality
Skewness Normality (TP=1)	1.7624	0.077998	Cannot reject normality
Kurtosis Normality (TP=1)	1.3863	0.165642	Cannot reject normality
Omnibus Normality (TP=1)	5.0281	0.080941	Cannot reject normality
Variance-Ratio Equal-Variance Test variances	1.1471	0.653464	Cannot reject equal
Modified-Levene Equal-Variance Test variances	0.0788	0.779653	Cannot reject equal

I.3 Combination 3: Awareness for Servihoo

Two-Sample Test Report

Page/Date/Time	1 26/04/2005 21:07:05
Database	C:\Documents and Settings\Sa ... rand awareness data sheet.S0
Variable	MT_TP_Servihoo

Descriptive Statistics Section

Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Servihoo=0	52	31.22691	60.15992	8.34268	14.47828	47.97554
Servihoo=1	33	32.77542	54.88729	9.554651	13.31323	52.23761

Note: T-alpha (Servihoo=0) = 2.0076, T-alpha (Servihoo=1) = 2.0369

Equal-Variance T-Test Section

Alternative Hypothesis	Power T-Value (Alpha=.01)	Prob Level	Decision (5%)	Power (Alpha=.05)
Difference <> 0	-0.1196	0.905104	Accept Ho	0.051602
	0.010514			
Difference < 0	-0.1196	0.452552	Accept Ho	0.063475
	0.013598			
Difference > 0	-0.1196	0.547448	Accept Ho	0.038911
	0.007263			

Difference: (Servihoo=0)-(Servihoo=1)

Tests of Assumptions Section

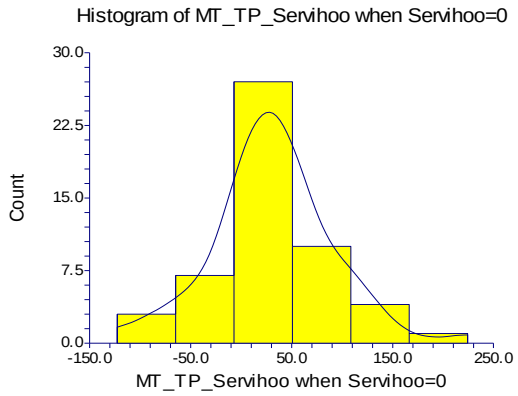
Assumption	Value	Probability	Decision(5%)

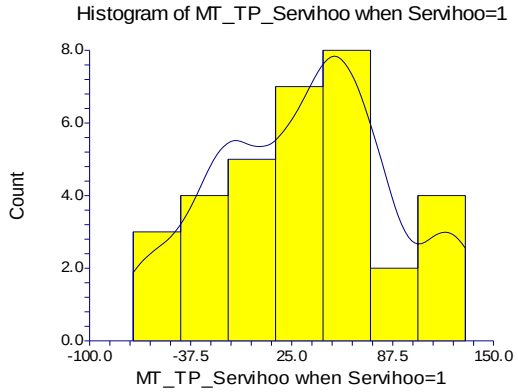
Skewness Normality (Servihoo=0)	0.8055	0.420553	Cannot reject normality
Kurtosis Normality (Servihoo=0)	2.0453	0.040822	Reject normality
Omnibus Normality (Servihoo=0)	4.8322	0.089271	Cannot reject normality
Skewness Normality (Servihoo=1)	-0.0643	0.948757	Cannot reject normality
Kurtosis Normality (Servihoo=1)	-0.8082	0.418983	Cannot reject normality
Omnibus Normality (Servihoo=1)	0.6573	0.719896	Cannot reject normality
Variance-Ratio Equal-Variance Test variances	1.2014	0.587190	Cannot reject equal
Modified-Levene Equal-Variance Test variances	0.0540	0.816825	Cannot reject equal

Kolmogorov-Smirnov Test For Different Distributions

Alternative Hypothesis	Dmn Criterion Value	Reject Ho if Greater Than	Test Alpha Level	Decision (Test Alpha)	Prob Level
D(1)<>D(2)	0.141608	0.3027	.050	Accept Ho	0.7485
D(1)<D(2)	0.141608	0.3027	.025	Accept Ho	
D(1)>D(2)	0.121795	0.3027	.025	Accept Ho	

Plots Section





I.4 Combination 4: Awareness for DCL

Two-Sample Test Report

Page/Date/Time	1 26/04/2005 20:45:37
Database	C:\Documents and Settings\Sa ... rand awareness data sheet.S0
Variable	DCL_Smartnet

Descriptive Statistics Section

Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
DCL=0	43	-7.528596	34.41512	5.248256	-18.12001	3.062813
DCL=1	42	-13.32157	32.51557	5.017262	-23.45414	-3.189009

Note: T-alpha (DCL=0) = 2.0181, T-alpha (DCL=1) = 2.0195

Equal-Variance T-Test Section

Alternative Hypothesis	T-Value	Prob Level	Decision (5%)	Power (Alpha=.05)	Power (Alpha=.01)
Difference <> 0	0.7973	0.427540	Accept Ho	0.123628	0.036777
Difference < 0	0.7973	0.786230	Accept Ho	0.007431	0.000933
Difference > 0	0.7973	0.213770	Accept Ho	0.196546	0.061545

Difference: (DCL=0)-(DCL=1)

Tests of Assumptions Section

Assumption	Value	Probability	Decision(5%)
Skewness Normality (DCL=0)	0.4900	0.624144	Cannot reject normality
Kurtosis Normality (DCL=0)	0.6336	0.526344	Cannot reject normality
Omnibus Normality (DCL=0)	0.6415	0.725593	Cannot reject normality
Skewness Normality (DCL=1)	0.3189	0.749788	Cannot reject normality
Kurtosis Normality (DCL=1)	-0.1947	0.845601	Cannot reject normality
Omnibus Normality (DCL=1)	0.1396	0.932566	Cannot reject normality
Variance-Ratio Equal-Variance Test variances	1.1203	0.717274	Cannot reject equal
Modified-Levene Equal-Variance Test variances	0.0261	0.871959	Cannot reject equal

I.5 Combination 5 for DCL Internet

Two-Sample Test Report

Page/Date/Time	1 26/04/2005 21:10:16
Database	C:\Documents and Settings\Sa ... rand awareness data sheet.S0
Variable	DCL_Smartnet

Descriptive Statistics Section

Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
DCL_Internet=0	81	-9.098211	32.3307	3.5923	-16.24712	-1.949305
DCL_Internet=1	4	-36.57017	49.35203	24.67601	-115.1003	41.95992

Note: T-alpha (DCL_Internet=0) = 1.9901, T-alpha (DCL_Internet=1) = 3.1824

Equal-Variance T-Test Section

Alternative Hypothesis	Power T-Value (Alpha=.01)	Prob Level	Decision (5%)	Power (Alpha=.05)
Difference <> 0	1.6205 0.161698	0.108925	Accept Ho	0.360267
Difference < 0	1.6205 0.000044	0.945538	Accept Ho	0.000572
Difference > 0	1.6205 0.232021	0.054462	Accept Ho	0.485000

Difference: (DCL_Internet=0)-(DCL_Internet=1)

Tests of Assumptions Section

Assumption	Value	Probability	Decision(5%)
Skewness Normality (DCL_Internet=0)	0.6867	0.492287	Cannot reject normality
Kurtosis Normality (DCL_Internet=0)	0.6443	0.519353	Cannot reject normality
Omnibus Normality (DCL_Internet=0)	0.8867	0.641882	Cannot reject normality
Skewness Normality (DCL_Internet=1)	0.0000		
Kurtosis Normality (DCL_Internet=1)		1.000000	Cannot reject normality
Omnibus Normality (DCL_Internet=1)			
Variance-Ratio Equal-Variance Test variances	2.3301	0.161109	Cannot reject equal
Modified-Levene Equal-Variance Test variances	0.1318	0.717477	Cannot reject equal

I.6 Combination 6: Awareness for Smartnet

Two-Sample Test Report

Page/Date/Time	1 26/04/2005 21:08:21
Database	C:\Documents and Settings\Sa ... rand awareness data sheet.S0
Variable	DCL_Smartnet

Descriptive Statistics Section

Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Smartnet=0	76	-11.37693	34.79098	3.990799	-19.32701	-3.426849
Smartnet=1	9	-2.065475	17.05498	5.684993	-15.17509	11.04414

Note: T-alpha (Smartnet=0) = 1.9921, T-alpha (Smartnet=1) = 2.3060

Aspin-Welch Unequal-Variance Test Section

Alternative Hypothesis	Power T-Value (Alpha=.01)	Prob Level	Decision (5%)	Power (Alpha=.05)
Difference <> 0	-1.3406 0.087208	0.197325	Accept Ho	0.244831
Difference < 0	-1.3406 0.138377	0.098662	Accept Ho	0.360720
Difference > 0	-1.3406 0.000178	0.901338	Accept Ho	0.001666

Difference: (Smartnet=0)-(Smartnet=1)

Tests of Assumptions Section

Assumption	Value	Probability	Decision(5%)
Skewness Normality (Smartnet=0)	0.8498	0.395430	Cannot reject normality
Kurtosis Normality (Smartnet=0)	-0.0527	0.957960	Cannot reject normality
Omnibus Normality (Smartnet=0)	0.7250	0.695949	Cannot reject normality
Skewness Normality (Smartnet=1)	-1.1051	0.269102	Cannot reject normality
Kurtosis Normality (Smartnet=1)	0.4501	0.652631	Cannot reject normality
Omnibus Normality (Smartnet=1)	1.4239	0.490682	Cannot reject normality
Variance-Ratio Equal-Variance Test	4.1613	0.036355	Reject equal variances
Modified-Levene Equal-Variance Test	4.4269	0.038402	Reject equal variances

I.7 Combination 7: Awareness for Network Plus

Two-Sample Test Report

Page/Date/Time 1 26/04/2005 20:47:04
Database C:\Documents and Settings\Sa ... rand awareness data sheet.S0
Variable NW_x

Descriptive Statistics Section

Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
NW_=0	55	-26.77029	45.84093	6.181189	-39.16282	-14.37775
NW_=1	30	-26.83774	44.45851	8.116976	-43.43882	-10.23666

Note: T-alpha (NW_=0) = 2.0049, T-alpha (NW_=1) = 2.0452

Equal-Variance T-Test Section

Hypothesis	T-Value	Prob Level	Decision (5%)	Power (Alpha=.05)	Power (Alpha=.01)
Difference <> 0	0.0066	0.994788	Accept Ho	0.050005	0.010002
Difference < 0	0.0066	0.502606	Accept Ho	0.049333	0.009829
Difference > 0	0.0066	0.497394	Accept Ho	0.050674	0.010173

Difference: (NW_=0)-(NW_=1)

Tests of Assumptions Section

Assumption	Value	Probability	Decision(5%)
Skewness Normality (NW_=0)	1.4207	0.155414	Cannot reject normality
Kurtosis Normality (NW_=0)	1.8370	0.066203	Cannot reject normality
Omnibus Normality (NW_=0)	5.3930	0.067440	Cannot reject normality
Skewness Normality (NW_=1)	0.7424	0.457817	Cannot reject normality
Kurtosis Normality (NW_=1)	0.5609	0.574846	Cannot reject normality
Omnibus Normality (NW_=1)	0.8659	0.648604	Cannot reject normality
Variance-Ratio Equal-Variance Test variances	1.0632	0.877983	Cannot reject equal
Modified-Levene Equal-Variance Test variances	0.0534	0.817874	Cannot reject equal

I.8 Combination 8: Awareness for NetAccess

Two-Sample Test Report

Page/Date/Time 1 26/04/2005 21:09:18
Database C:\Documents and Settings\Sa ... rand awareness data sheet.S0
Variable NW_x

Descriptive Statistics Section

Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Netaccess=0	76	-24.74285	42.58702	4.885067	-34.4744	-15.0113
Netaccess=1	9	-44.11569	62.99917	20.99972	-92.54114	4.309763

Note: T-alpha (Netaccess=0) = 1.9921, T-alpha (Netaccess=1) = 2.3060

Equal-Variance T-Test Section

Alternative Hypothesis	T-Value	Prob Level	Decision (5%)	Power (Alpha=.05)	Power (Alpha=.01)

Hypothesis	T-Value (Alpha=.01)	Level	(5%)	(Alpha=.05)
Difference <> 0	1.2223	0.225044	Accept Ho	0.226866
	0.084221			
Difference < 0	1.2223	0.887478	Accept Ho	0.002136
	0.000209			
Difference > 0	1.2223	0.112522	Accept Ho	0.332692
	0.130539			

Difference: (Netaccess=0)-(Netaccess=1)

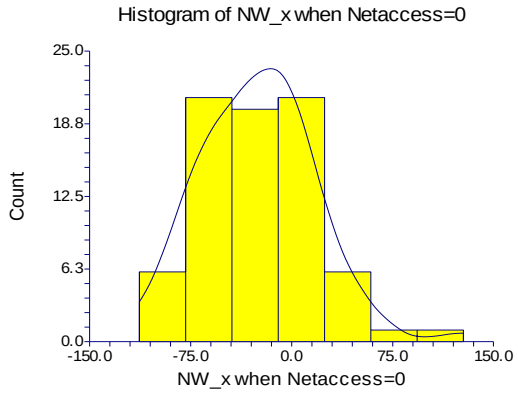
Tests of Assumptions Section

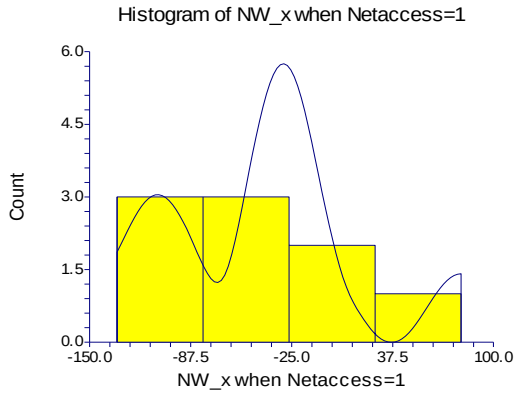
Assumption	Value	Probability	Decision(5%)
Skewness Normality (Netaccess=0)	1.8735	0.061002	Cannot reject normality
Kurtosis Normality (Netaccess=0)	1.7467	0.080696	Cannot reject normality
Omnibus Normality (Netaccess=0)	6.5608	0.037614	Reject normality
Skewness Normality (Netaccess=1)	0.8270	0.408260	Cannot reject normality
Kurtosis Normality (Netaccess=1)	0.8044	0.421145	Cannot reject normality
Omnibus Normality (Netaccess=1)	1.3310	0.514022	Cannot reject normality
Variance-Ratio Equal-Variance Test variances	2.1883	0.075370	Cannot reject equal
Modified-Levene Equal-Variance Test variances	1.1427	0.288176	Cannot reject equal

Kolmogorov-Smirnov Test For Different Distributions

Alternative Hypothesis	Dmn Criterion Value	Reject Ho if Greater Than	Test Alpha Level	Decision (Test Alpha)	Prob Level
D(1)<>D(2)	0.304094	0.4481	.050	Accept Ho	0.3674
D(1)<D(2)	0.097953	0.4481	.025	Accept Ho	
D(1)>D(2)	0.304094	0.4481	.025	Accept Ho	

Plots Section





I.9 Combination 9: Awareness for Mauripost

Two-Sample Test Report

Page/Date/Time	1 26/04/2005 20:49:35
Database	C:\Documents and Settings\Sa ... rand awareness data sheet.S0
Variable	Mauripost_Clickpost

Descriptive Statistics Section

Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Mauripost=0	65	4.608881	48.87472	6.062163	-7.501682	16.71944
Mauripost=1	20	7.78842	57.80802	12.92627	-19.26657	34.84341

Note: T-alpha (Mauripost=0) = 1.9977, T-alpha (Mauripost=1) = 2.0930

Equal-Variance T-Test Section

Alternative Hypothesis	T-Value	Prob Level	Decision (5%)	Power (Alpha=.05)	Power (Alpha=.01)
Difference <> 0	-0.2435	0.808191	Accept Ho	0.056665	0.012159
Difference < 0	-0.2435	0.404095	Accept Ho	0.080264	0.018456
Difference > 0	-0.2435	0.595905	Accept Ho	0.029620	0.005145

Difference: (Mauripost=0)-(Mauripost=1)

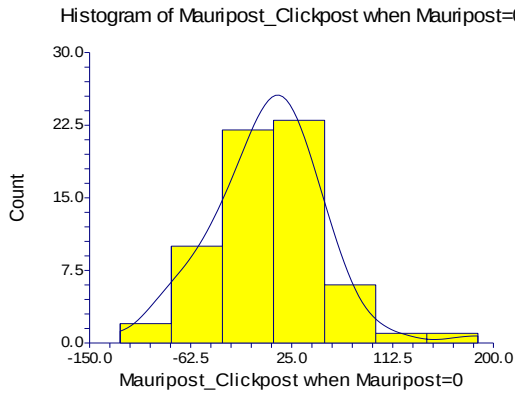
Tests of Assumptions Section

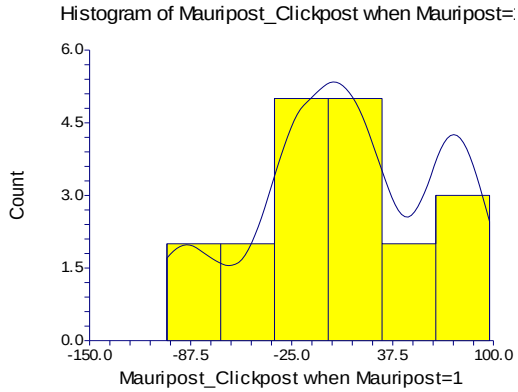
Assumption	Value	Probability	Decision(5%)
Skewness Normality (Mauripost=0)	1.3334	0.182417	Cannot reject normality
Kurtosis Normality (Mauripost=0)	2.6335	0.008451	Reject normality
Omnibus Normality (Mauripost=0)	8.7131	0.012822	Reject normality
Skewness Normality (Mauripost=1)	-0.5074	0.611848	Cannot reject normality
Kurtosis Normality (Mauripost=1)	-0.6097	0.542069	Cannot reject normality
Omnibus Normality (Mauripost=1)	0.6292	0.730077	Cannot reject normality
Variance-Ratio Equal-Variance Test variances	1.3990	0.319355	Cannot reject equal
Modified-Levene Equal-Variance Test variances	1.4719	0.228483	Cannot reject equal

Kolmogorov-Smirnov Test For Different Distributions

Alternative Hypothesis	Dmn Criterion Value	Reject Ho if Greater Than	Test Alpha Level	Decision (Test Alpha)	Prob Level
D(1)<>D(2)	0.253846	0.3292	.050	Accept Ho	0.2354
D(1)<D(2)	0.253846	0.3292	.025	Accept Ho	
D(1)>D(2)	0.092308	0.3292	.025	Accept Ho	

Plots Section





I.10 Combination 10: Awareness for Clickpost

Two-Sample Test Report

Page/Date/Time	1 26/04/2005 21:05:48
Database	C:\Documents and Settings\Sa ... rand awareness data sheet.S0
Variable	Mauripost_Clickpost

Descriptive Statistics Section

Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Clickpost=0	74	3.626049	50.38378	5.856996	-8.046926	15.29902
Clickpost=1	11	17.00164	54.31555	16.37675	-19.48804	53.49132

Note: T-alpha (Clickpost=0) = 1.9930, T-alpha (Clickpost=1) = 2.2281

Equal-Variance T-Test Section

Alternative Hypothesis	T-Value	Prob Level	Decision (5%)	Power (Alpha=.05)	Power (Alpha=.01)
Difference <> 0	-0.8136	0.418189	Accept Ho	0.126750	0.038048
Difference < 0	-0.8136	0.209094	Accept Ho	0.201057	0.063518
Difference > 0	-0.8136	0.790906	Accept Ho	0.007105	0.000883

Difference: (Clickpost=0)-(Clickpost=1)

Tests of Assumptions Section

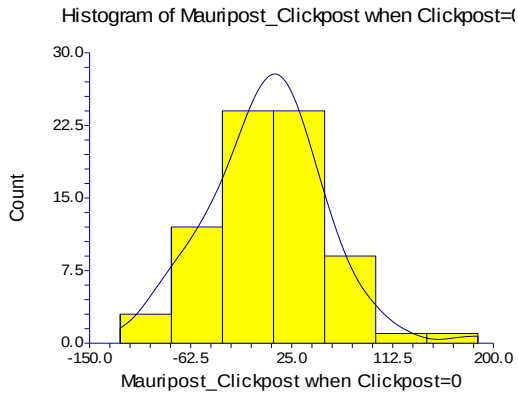
Assumption	Value	Probability	Decision(5%)

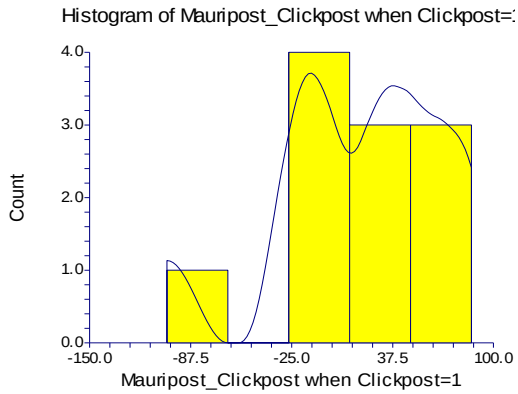
Skewness Normality (Clickpost=0)	1.2811	0.200172	Cannot reject normality
Kurtosis Normality (Clickpost=0)	2.2383	0.025204	Reject normality
Omnibus Normality (Clickpost=0)	6.6509	0.035956	Reject normality
Skewness Normality (Clickpost=1)	-1.3495	0.177186	Cannot reject normality
Kurtosis Normality (Clickpost=1)	0.9404	0.347011	Cannot reject normality
Omnibus Normality (Clickpost=1)	2.7054	0.258537	Cannot reject normality
Variance-Ratio Equal-Variance Test variances	1.1622	0.660291	Cannot reject equal
Modified-Levene Equal-Variance Test variances	0.1229	0.726822	Cannot reject equal

Kolmogorov-Smirnov Test For Different Distributions

Alternative Hypothesis	Dmn Criterion Value	Reject Ho if Greater Than	Test Alpha Level	Decision (Test Alpha)	Prob Level
D(1)<>D(2)	0.261671	0.4124	.050	Accept Ho	0.4451
D(1)<D(2)	0.261671	0.4124	.025	Accept Ho	
D(1)>D(2)	0.077396	0.4124	.025	Accept Ho	

Plots Section





Annex J: Two-sample T-Test report for Brand loyalty

Two-Sample Test Report

Page/Date/Time 1 03/05/2005 19:13:32
Database
Variable Telecom_Plus__Mauritius_Telecom___

Descriptive Statistics Section

Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Shifting_intention=1	32	19.48513	45.47364	8.03868	3.090135	35.88013
Shifting_intention=3	39	41.63863	60.09401	9.622743	22.15841	61.11886

Note: T-alpha (Shifting_intention=1) = 2.0395, T-alpha (Shifting_intention=3) = 2.0244

Equal-Variance T-Test Section

Alternative Hypothesis	T-Value	Prob Level	Decision (5%)	Power (Alpha=.05)	Power (Alpha=.01)
Difference <> 0	-1.7194	0.090017	Accept Ho	0.395845	0.184745
Difference < 0	-1.7194	0.045008	Reject Ho	0.523006	0.260922
Difference > 0	-1.7194	0.954992	Accept Ho	0.000408	0.000030

Difference: (Shifting_intention=1)-(Shifting_intention=3)

Tests of Assumptions Section

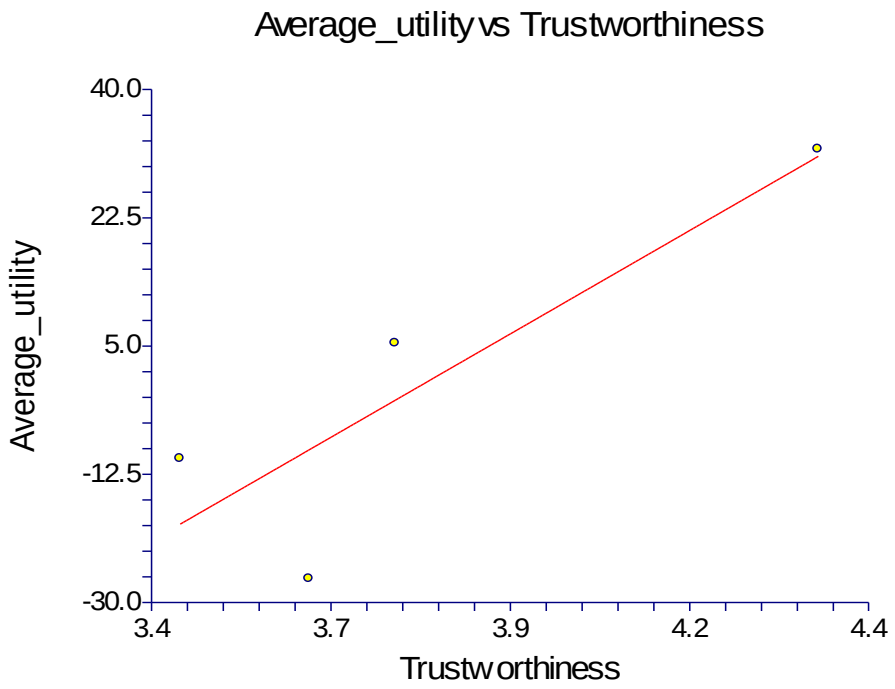
Assumption	Value	Probability	Decision(5%)
Skewness Normality (Shifting_intention=1)	-0.0925	0.926316	Cannot reject normality
Kurtosis Normality (Shifting_intention=1)	0.6446	0.519214	Cannot reject normality
Omnibus Normality (Shifting_intention=1)	0.4240	0.808962	Cannot reject normality
Skewness Normality (Shifting_intention=3)	-0.8887	0.374189	Cannot reject normality
Kurtosis Normality (Shifting_intention=3)	-0.7080	0.478924	Cannot reject normality
Omnibus Normality (Shifting_intention=3)	1.2910	0.524396	Cannot reject normality
Variance-Ratio Equal-Variance Test variances	1.7464	0.113937	Cannot reject equal
Modified-Levene Equal-Variance Test variances	3.6748	0.059381	Cannot reject equal

Annex K: Linear Regression output for trustworthiness

Linear Regression Report

Page/Date/Time 1 19/05/2005 22:57:38
Database
Y = Average_utility X = Trustworthiness

Linear Regression Plot Section



Run Summary Section

Parameter	Value	Parameter	Value
Dependent Variable	Average_utility	Rows Processed	5
Independent Variable	Trustworthiness	Rows Used in Estimation	4
Frequency Variable	None	Rows with X Missing	1
Weight Variable	None	Rows with Freq Missing	0
Intercept	-213.3131	Rows Prediction Only	0
Slope	56.3947	Sum of Frequencies	4
R-Squared	0.7583	Sum of Weights	4.0000
Correlation	0.8708	Coefficient of Variation	259046690.6218
Mean Square Error	225.7418	Square Root of MSE	15.02471

Linear Regression Report

Page/Date/Time 2 19/05/2005 22:57:38
Y = Average_utility X = Trustworthiness

Summary Statement

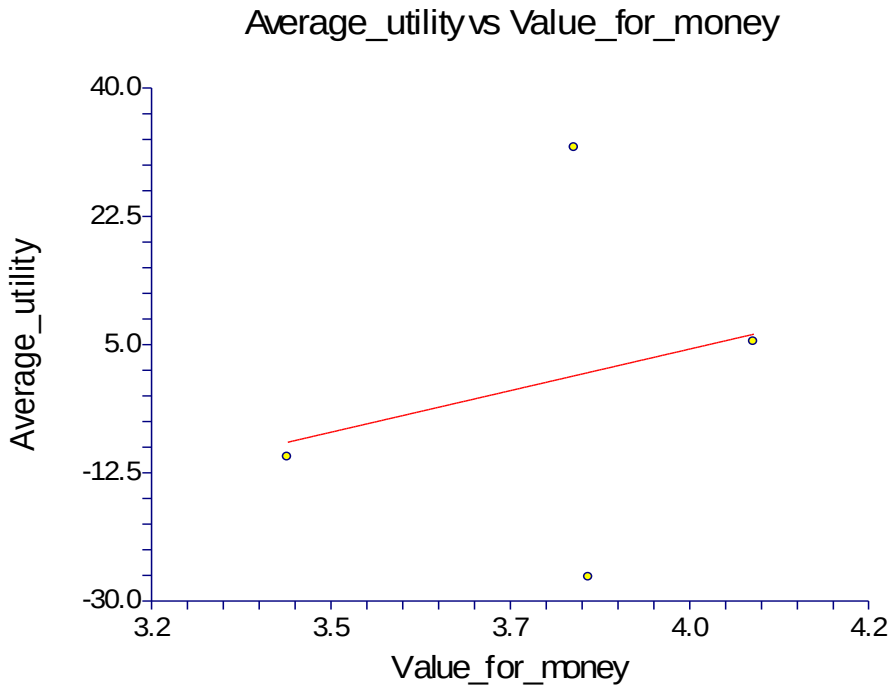
The equation of the straight line relating Average_utility and Trustworthiness is estimated as: Average_utility = (-213.3131) + (56.3947) Trustworthiness using the 4 observations in this dataset. The y-intercept, the estimated value of Average_utility when Trustworthiness is zero, is -213.3131 with a standard error of 85.4976. The slope, the estimated change in Average_utility per unit change in Trustworthiness, is 56.3947 with a standard error of 22.5160. The value of R-Squared, the proportion of the variation in Average_utility that can be accounted for by variation in Trustworthiness, is 0.7583. The correlation between Average_utility and Trustworthiness is 0.8708.

Annex L: Linear regression report for “Value for money” statement

Linear Regression Report

Page/Date/Time 1 19/05/2005 22:58:39
Database
Y = Average_utility X = Value_for_money

Linear Regression Plot Section



Run Summary Section

Parameter	Value	Parameter	Value
Dependent Variable	Average_utility	Rows Processed	5
Independent Variable	Value_for_money	Rows Used in Estimation	4
Frequency Variable	None	Rows with X Missing	1
Weight Variable	None	Rows with Freq Missing	0
Intercept	-85.2240	Rows Prediction Only	0
Slope	22.6810	Sum of Frequencies	4
R-Squared	0.0602	Sum of Weights	4.0000
Correlation	0.2454	Coefficient of Variation	
Mean Square Error	510753729.1667 877.5645	Square Root of MSE	29.62372

Linear Regression Report

Page/Date/Time 2 19/05/2005 22:58:39
Y = Average_utility X = Value_for_money

Summary Statement

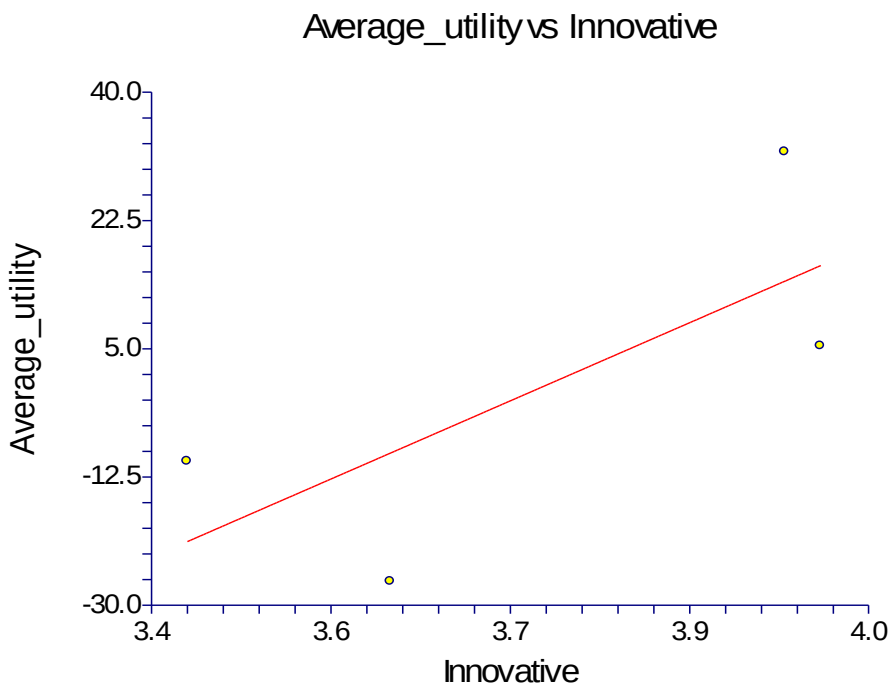
The equation of the straight line relating Average_utility and Value_for_money is estimated as: Average_utility = (-85.2240) + (22.6810) Value_for_money using the 4 observations in this dataset. The y-intercept, the estimated value of Average_utility when Value_for_money is zero, is -85.2240 with a standard error of 238.4944. The slope, the estimated change in Average_utility per unit change in Value_for_money, is 22.6810 with a standard error of 63.3490. The value of R-Squared, the proportion of the variation in Average_utility that can be accounted for by variation in Value_for_money, is 0.0602. The correlation between Average_utility and Value_for_money is 0.2454.

Annex M: Linear regression report for “Innovative” statement

Linear Regression Report

Page/Date/Time 1 19/05/2005 22:59:16
Database
Y = Average_utility X = Innovative

Linear Regression Plot Section



Run Summary Section

Parameter	Value	Parameter	Value
Dependent Variable	Average_utility	Rows Processed	5
Independent Variable	Innovative	Rows Used in Estimation	4
Frequency Variable	None	Rows with X Missing	1
Weight Variable	None	Rows with Freq Missing	0
Intercept	-265.0627	Rows Prediction Only	0
Slope	71.0624	Sum of Frequencies	4
R-Squared	0.5402	Sum of Weights	4.0000
Correlation	0.7350	Coefficient of Variation	357246018.8338
Mean Square Error	429.3295	Square Root of MSE	20.72027

Linear Regression Report

Page/Date/Time 2 19/05/2005 22:59:16
Y = Average_utility X = Innovative

Summary Statement

The equation of the straight line relating Average_utility and Innovative is estimated as: Average_utility = (-265.0627) + (71.0624) Innovative using the 4 observations in this dataset. The y-intercept, the estimated value of Average_utility when Innovative is zero, is -265.0627 with a standard error of 173.2147. The slope, the estimated change in Average_utility per unit change in Innovative, is 71.0624 with a standard error of 46.3551. The value of R-Squared, the proportion of the variation in Average_utility that can be accounted for by variation in Innovative, is 0.5402. The correlation between Average_utility and Innovative is 0.7350.

Annex N: Linear regression report for “Good service” statement

Linear Regression Report

Page/Date/Time 1 19/05/2005 22:59:49
Database
Y = Average_utility X = Good_service

Linear Regression Plot Section



Run Summary Section

Parameter	Value	Parameter	Value
Dependent Variable	Average_utility	Rows Processed	5
Independent Variable	Good_service	Rows Used in Estimation	4
Frequency Variable	None	Rows with X Missing	1
Weight Variable	None	Rows with Freq Missing	0
Intercept	-170.0846	Rows Prediction Only	0
Slope	46.2815	Sum of Frequencies	4
R-Squared	0.3809	Sum of Weights	4.0000
Correlation	0.6172	Coefficient of Variation	
	414559372.7114		
Mean Square Error	578.1353	Square Root of MSE	24.04444

Linear Regression Report

Page/Date/Time 2 19/05/2005 22:59:49
Y = Average_utility X = Good_service

Summary Statement

The equation of the straight line relating Average_utility and Good_service is estimated as: Average_utility = (-170.0846) + (46.2815) Good_service using the 4 observations in this dataset. The y-intercept, the estimated value of Average_utility when Good_service is zero, is

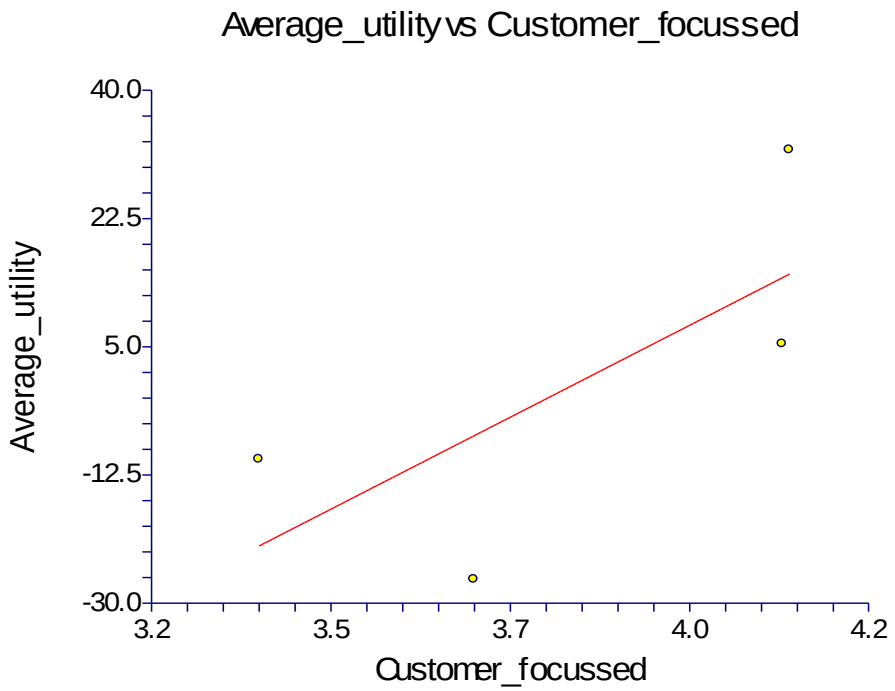
-170.0846 with a standard error of 153.8043. The slope, the estimated change in Average_utility per unit change in Good_service, is 46.2815 with a standard error of 41.7235. The value of R-Squared, the proportion of the variation in Average_utility that can be accounted for by variation in Good_service, is 0.3809. The correlation between Average_utility and Good_service is 0.6172.

Annex O: Linear regression report for “customer-focussed” statement

Linear Regression Report

Page/Date/Time 1 31/05/2005 20:44:00
Database C:\Documents and Settings\Sa ... ements vs average quality.S0
Y = Average_utility X = Customer_focussed

Linear Regression Plot Section



Run Summary Section

Parameter	Value	Parameter	Value
Dependent Variable	Average_utility	Rows Processed	5
Independent Variable	Customer_focussed	Rows Used in Estimation	4
Frequency Variable	None	Rows with X Missing	1
Weight Variable	None	Rows with Freq Missing	0
Intercept	-190.2266	Rows Prediction Only	0
Slope	50.1586	Sum of Frequencies	4
R-Squared	0.5217	Sum of Weights	4.0000
Correlation	0.7223	Coefficient of Variation	
	364377243.7664		
Mean Square Error	446.6409	Square Root of MSE	21.13388

Linear Regression Report

Page/Date/Time 2 31/05/2005 20:44:01
Y = Average_utility X = Customer_focussed

Summary Statement

The equation of the straight line relating Average_utility and Customer_focussed is estimated as: Average_utility = (-190.2266) + (50.1586) Customer_focussed using the 4 observations in this dataset. The y-intercept, the estimated value of Average_utility when Customer_focussed is zero, is -190.2266 with a standard error of 129.2266. The slope, the estimated change in Average_utility per unit change in Customer_focussed, is 50.1586 with a standard error of 33.9601. The value of R-Squared, the proportion of the variation in Average_utility that can be accounted for by variation in Customer_focussed, is 0.5217. The correlation between Average_utility and Customer_focussed is 0.7223.