



PERCEPTION OF BRAND EQUITY OF TWO LAPTOP BRANDS: FUJITSU
AND SONY: A COMPARATIVE STUDY OF CONSUMERS IN BANGKOK

By

RAI NETTALA

A Thesis submitted in partial fulfillment
of the requirements for the degree of

Master of Business Administration

Graduate School of Business
Assumption University
Bangkok, Thailand

November 2004

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ABSTRACT

The competitive advantage of firms that have brands with high equity includes the opportunity for successful extensions, resilience against competitors' promotional pressures, and creation of barriers to competitors. The concept of brand equity is given much importance in recent days in order to attain a competitive edge over other firms. Hence customer based brand equity is a consumer perception and it is important to understand from customer perspective

The primary objective of the research was to compare the difference in consumer perception on each brand equity dimensions of two laptop brands Fujitsu and Sony. Brand equity dimensions are defined by operating performance, social image, value, trustworthiness and attachment. Secondary objective of the study was to understand the difference in consumers' perception of brand equity of Fujitsu and Sony brands.

For this purpose, six hypotheses were formulated. To test the hypothesis statements, survey research was conducted with non-probability sampling where data was collected from 384 respondents in Bangkok. The target respondents were both male and female who owns Fujitsu or Sony laptop.

Data was measured by using the Statistical Package for Social Analysis (SPSS 11.5). In order to compare the mean difference between two brands an Independent t-Test was used. Each of the brand equity dimensions was taken into consideration to find difference in consumer perception. Findings revealed that all the null hypotheses were rejected concluding that there is a difference in consumer perception in terms of brand equity between two brands. It also showed that each brand equity dimension has difference in terms of consumer

perception. Key findings also showed that Sony has higher mean when compared to Fujitsu brands. All the dimensions of brand equity showed higher mean value for Sony brands.

Managers and marketers can benefit from the findings of this study. Fujitsu can set Sony as benchmark for its future marketing strategy to remain in healthy competition. Further, this study can help Sony's management to understand consumers, because ultimately it is customer who decides the success of any business.



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CHAPTER I

INTRODUCTION

This chapter describes the background of the research study and its relevance to current literature in the field. It contains a description of the research problem investigated in this study. The scope and significance of the research are discussed along with the objectives of the study. It also describes major assumptions and limitations underlying in this study.

1.1 Background of the Research

Brand equity is regarded as very important concept in business practice as well as in academic research because marketers can gain competitive advantage through successful brands. For many businesses, brand equity represents the most important factor in attaining a competitive advantage. Although brand equity had a long role in business practice, it was not until the twentieth century that branding became so central to competitive advantages (Lassar, et al., 1995). In a similar context Aaker (1991) explained that ‘the idea has been to move beyond commodities to branded products, to reduce the primacy of price upon purchase decision’. Brand equity is a multidimensional factor which can be viewed from different perspectives. For example, as an investor, a manufacturer, a retailer or a consumer has a distinct view on what brand equity means to them.

Knapp (2000) defined brand equity as the totality of the brand’s perception by the customer, including the relative perceived quality of the products and services, financial performances, customer loyalty, satisfaction and overall esteem toward the brand.

Supporting this statement, Aaker (1991) stated that brand equity can be grouped as brand loyalty, brand awareness, perceived quality, brand association and other brand assets like patents, trade mark, among others Marketing Science Institute described brand equity as the set of associations and behaviors on the part of consumers which allows the brand to greater advantage.

It would be fair to arrive to a conclusion that brand equity is a multifactor term, and each factor has its own influence on the customer. To support this statement, Korchia (1999) concluded that brand association is an important factor in brand equity; however Roman (1999) stated that brand awareness is the important factor. The competitive advantage of firms that have brands with high equity includes the opportunity for successful extensions, resilience against competitors' promotional pressures and creation of barriers to competitive entry (Farquhar, 1989). Once the positive image is imprinted into the consumer's attitude toward the brand, the next step is to build loyalty to that particular brand (Blackston, 1995).

Conceptualizing the brand equity from customer perspective is useful because it suggests both specific guide lines for making strategic and tactics and areas where research can be useful in assisting managerial decision making (Keller, 1993). Basically, brand equity stems from the greater confidence that consumers place in a brand than they do in its competitors. This confidence translates into consumers' loyalty and their willingness to pay a premium price for the brand (Pope, 1993). This study will focus on investigating the major factors that influence consumers' perception with respect to brand equity and are sub divided into operating performance, social image, value, trustworthiness and attachment. A

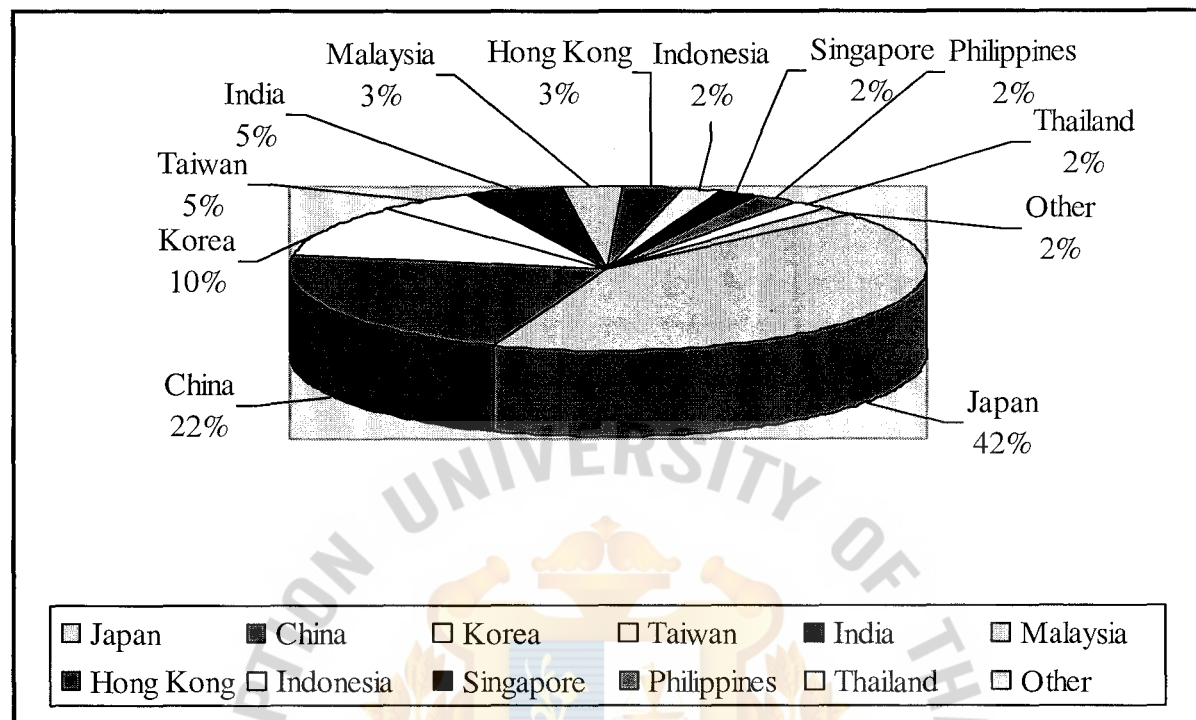
customer based brand equity approach is very essential because Aaker (1991) stated that it is consumer that is the most critical component in defining brand equity.

This research primarily focuses on product laptops and it aims to compare the consumer based brand equity of the two brands Fujitsu and Sony. For this purpose, the researcher has considered the Personal Computer (PC) market in Thailand. The next section, therefore, gives a brief insight into the market.

1.1.1 Thailand Computer Market

In 2001, the Thai Information Technology (IT) Market posted a year to-year growth rate of 20% despite the global economic slowdown. A joint study conducted by Association of Thai Computer Industry (ATCI), the Association of Thai Software Industry (ATSI) and the Computer Association of Thailand (CAT), estimated the value of the Thai computer market at US\$ 1.34 billion – up from US\$ 1.15 billion the previous year. The Thai IT market is relatively small in the region, ranked 9th after (Figure 1.1) China, Korea, Taiwan, Hong Kong, India, Singapore, Indonesia, and Malaysia (Figure 1.1). Industry estimates for Thailand estimate the market size, in 2001, to be US \$1.6 billion (www.thailandoutlook.com, 10/06/'04).

Figure 1.1: Personal Computer Market Share in Asia



Source: Thailand IT Market Outlook 2004

According to the CAT, Thailand has a total installed base of 1.47 million PCs. This equates to 1 PC for every 41.2 people. Hardware accounted for 63% of this market, with the remainder split between professional services (19%) and software (18%). This distribution reflects one of the strongest drivers of growth for the IT market, the government's commitment to IT development (Thailand IT Market Outlook, 2004).

Following the economic crisis in 1997, the Thai IT market declined sharply in 1998 before rebounding in 1999. Although the global IT market has been affected by the downturn of hi-tech industry, the Thai IT market is expected to grow at 14% in the year 2002 from onwards. The total IT spending as a share of Gross Domestic Production (GDP) has doubled from 0.56% in 1998 to 1.2% in 2002 (Thailand IT Outlook Market, 2004).

Strong economic growth in Thailand was encouraged by robust private consumption, gross fixed investment, and manufacturing output. Low interest rates in Thailand supported domestic consumption, and the external factor benefited from a revival in growth in key export markets such as Japan and the US. Indeed, brighter global growth prospects as well as improving business confidence are expected to continue to encourage growth in Thailand into the year 2004 as the country's 2004 GDP growth expectation was adjusted upward to 6.7%. However, extremist activities in Southwestern Thailand could be a source of downside risk for the country (Thailand IT Market Outlook, 2004).

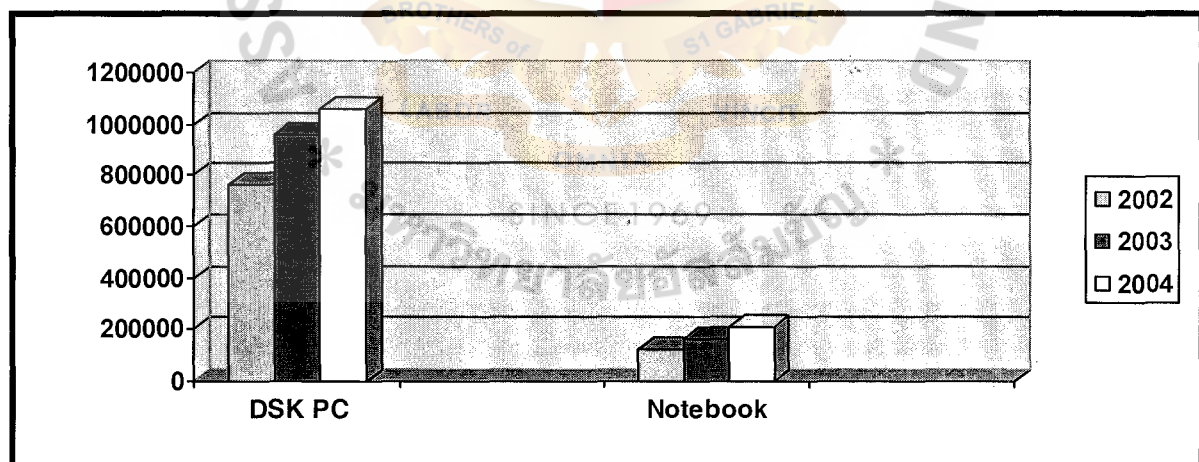
The PC industry has become one of the favorable industries for investment due to the two significant factors. Firstly, the demand for PC in domestic market is likely to increase in concert with the technological development particularly the growth of internet. At present, there are more rooms for a newcomer to make a profit in this business. Secondly, PC assembly requires any of machinery; thereby it does not need a lot of investment capital for construction of a large factory and machinery purchase.

As buyers have ample selections of PC peripherals for purchase, the PC market of Thai operators is likely to consistently expand. In addition, the National Electronics and Computer Technology Center (NECTEC) have promoted the usage of PC and related products assembled in the country under the project of PC quality certification. The certification will enable local assemblers to be competitive in the government auction. The local PC brands so far have rarely been selected as a result of any guarantees of product quality and standard. The NECTEC certificate helps to increase home users' confidence in

the local PC standard. The total of investment capital of PC assembly is usually spent on raw materials, accounting for 95% of total raw material costs.

The ministry has also been charged with the responsibility of raising IT awareness among Thai citizens and bringing technology to a wider audience. Part of this initiative has seen the subsidizing of PCs for first-time users, and soon the ministry will also move to raise the adoption rates of broadband in the country by significantly reducing the cost of access, which will help spur the local software and content development sector. Personal desk top computer and laptop sales in Thailand showed a constant growth in 2002 and 2003. It was noticed that, there was 25.4% increase in desktop PC sales from 2002 to 2003 and 10% from 2003 to 2004. Similarly, there was 30% increase in laptop sales from 2002 to 2003 and from 2003 to 2004 (see Figure 1.2).

Figure 1.2: Desktop Computer & Laptop Sales in units, Thailand



Source: Thailand IT Market Outlook 2004.

The companies selling notebooks in Thailand are Sony, Fujitsu, Toshiba, Compaq, Acer, IBM, DELL and many small local companies. Out of these Sony and Fujitsu are the main competitors in premium segment level. For a business to keep up its growth it will

have to raise its competitive advantage over its competitor. Although IBM, Compaq and Acer are the top three players according to market share, these are not direct competitors as they have different positioning strategies and brand image. Sony entered the Thailand market with its “Vaio” range of notebooks which directly competes with Fujitsu’s “Life book series” note books. It entered in premium segment with huge advertising and promotion (www.brandage.com, 22/06/’04).

1.2 Statement of the Problem

The need of measuring brand equity with respect to customers’ perspective is very essential because customers are the pivotal role for any brand’s success. It is ‘the enhancement in perceived utility and desirability of a brand name confers on a product. An individual consumer’s perception of brand equity is reflected by the increase in attitude strength for a product using the brand, and association with an object (e.g., the brand’s product) and the evaluation of that object (product) stored in an individual’s memory (Lassar et al., 1995). Positive attitude of the customer toward brand can create competitive advantage in a business for the firm. Brand equity is multidimensional factor, product and services, also a complete set of perceived values, characteristics and attributes that differentiate it from other similar products and services (Keller, 1993).

It is very important for managers to be able to understand at the customer level. Thus researcher would like to have better understanding on premium laptop business in Thailand in terms of consumer’s perspective to create competitive advantage through this equity under the brand of Fujitsu and their main competitor Sony by comparing both brands with respect to brand equity. Therefore, this study focuses mainly to measure customer based brand equity and compare the consumer’ perception about brand equity of

the two laptop brands, Fujitsu and Sony brands. Hence, statement of the problem is, **“What is the difference in consumers’ perception of brand equity between two laptop brands Fujitsu and Sony”?**

1.3 Research objectives

The objective of this research was to understand the consumers’ perception about brand equity. More generally, the objective was to understand the difference in consumer’s perception about the two laptop brands, Fujitsu and Sony.

Hence, the objectives of the research could be outlined as follows,

1. To understand the difference in consumers’ perception of brand equity of Fujitsu and Sony brands.
2. To compare the difference in consumer perception on each brand equity dimensions of Fujitsu and Sony which is defined by operating performance, social image, value, trustworthiness and attachment.

1.4 Scope of the Research

This research intends to study and compare the consumer perception of brand equity of two laptop brands, Fujitsu and Sony. Hence influential motives of brand equity are identified through literature review and from previous studies. With the use of questionnaire for survey research, this research covers the spatial boundary of Bangkok, Thailand. The target respondent is person who owns either Fujitsu laptops of ‘Life Book’ series or Sony laptops of ‘Vaio’ series.

1.5 Limitation of the Research

Undoubtedly the researcher will have some limitations, which are the possible problems that would arise if people were to apply the findings. Primarily this research work will be conducted under certain time frame. Therefore the findings may not be identical for other time frame. Furthermore, this research considers only Bangkok as spatial boundary; therefore research results may not be applicable for other context. Also, this study focuses only two laptop brands hence results of the study limited to certain brands only. Further the questionnaire was prepared only in English language and assumed that it was clearly understood by all respondents.

1.6 Significance of the Research

This research work is conducted to better understanding of a specific market, that is laptop market and to understand how each brand can develop a competitive advantage over other brands in terms of their brand equity. This study will enhance a firm to develop new strategy and change its approach towards its customers. The direct linkage will be laptop manufacturer of Fujitsu and Sony. The indirect significance would be to brand managers of the firm by understanding the consumers' perception of their brand. Due to fact that consumers' perception is important for success in business, managers need to understand what consumers exactly needs. Findings from this study will help mangers to develop new strategy to improve the brand equity. Also Thai Government is taking positive shift towards increasing IT awareness and to improve the computer usage in Thailand. Hence this study would bridge the gap between the laptop service providers and the customers need. Even though the research is being carried out only specific market, it is a consumer perception study which will also provide useful information to the similar other firms in

the market. The research will be useful to other academic researchers for further testing of the theory or even using the findings for their own literature. Therefore it can help managers and marketers along with future researchers for better understanding of the consumers' needs and perceptions. Thus, the study could also serve as a source of understanding humans as consumers and the kind of consumers they are with their different perceptions and beliefs.



1.7 Definition of Terms

Attitude: A person's consistently favorable or unfavorable evaluation, feelings, and tendencies toward an object or idea (Kotler and Armstrong, 2004).

Brand: A brand is 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 differentiate them from those of competitors (Kotler, 2000).

Brand Awareness: The proportion of target customers that recall a brand. Realization by a consumer of the existence and availability of a particular product. Brand awareness is a common measure of marketing communications effectiveness. Unaided awareness is spontaneous; aided or prompted awareness is when the name is recognized among others that are listed or identified (www.allaboutbranding.com/index.lasso, 15/07/04).

Brand Association: The association that customers make with a brand. These associations might include product attributes, a celebrity spokesperson or a particular symbol (Aaker, 1996).

Brand Equity: It is the totality of the brand's perception by the customer, including the relative perceived quality of the products and services, customer attachment, satisfaction and overall esteem toward the brand (Knapp, 2000).

Brand Familiarity: How well relevant customer knows about the company and company's product. It can be closely associated with awareness (James and Jack, 1997).

Brand Image: Brand image means how the product “feels” (e.g. sporty, luxurious, high-tech) and whether that feeling matches the image the customer wants to project (Donald and Lehmann, 1994).

Brand Loyalty: When customer have positive feelings regarding a brand and they use the brands products and services on regular basis ; the expected result when a brand establishes as a priority to be perceived first and foremost as d “friend” to customers (Knapp, 2000).

Brand Personality: It is a combination of all the perceptions and beliefs that the consumer holds about the brand. The objective is to link words, statement, pictures, sound, smell etc to a brand (Susannah and John, 1998).

Consumer: People who buy or use products to satisfy needs and wants (Wells, 2000).

Customer Retention: Providing value to customers continuously so they will the company rather than switch to another firm (Schiffman and Kanuk, 2004).

Customer Satisfaction: The extent to which a product’s perceived performance matches buyer’s expectations (Kotler and Armstrong, 2004).

Differentiation: Creating a perception of uniqueness and superiority, thus creating preference (Jack and James, 1997).

Perception: It is the process by which an individual selects, organizes, and interprets information inputs to create a meaningful picture (Kotler, 2000).

Performance: Consumer's judgment about a brand's fault free and long lasting physical operation and flawlessness in the product's physical construction (Lassar, Mittal and Sharma, 1995).

Perceived quality: Product's quality is either hard to assess before purchasing (sometimes these products are referred to as experience goods, because one has to actually try the product to know how good it is) or difficult to assess at all. It will be the post purchase experience nothing but perceived quality (Donald and Russell, 1994).

Perceived Value: A product (services) for which the customer can calculate the money saved by purchasing it or a product (services) for which the benefits are perceptual; customers always have some notion of what constitutes a good or bad price. This notion is developed by comparing the price being charged to the perceived value or benefits that would be derived through purchasing. It also can be termed as received value (Donald and Russell, 1994).

Purchase Intention: A decision plan to buy a particular product or brand created through a choice/decision (www.marketingpower.com, 23/07/'04).

Service: Any act or performance that one can offer to another that is essentially intangible and does not result the ownership of anything. Its production may or may not be tied to a physical product (Kotler, 2000).

Social Status: The amount of status those members of one social class have in comparison with members of other social classes (Schiffman and Kanuk, 2004).

Trustworthiness: The confidence, a consumer places on brand and brand's communications, and as to whether the brand's actions would be in the consumer's interest (Lassar, Mittal and Sharma, 1995).

Value: The difference between the values the customer gains from owning and using the product and the costs of obtaining the product (Kotler and Armstrong, 2004).

1.8 Abbreviations

ATCI: Association of Thai Computer industry.

ATSI: Association of Thai Software Industry

CAT: Computer Association of Thailand.

GDP: Gross Domestic Production

HP: Hewlett Packard.

IBM: International Business Machines.

IT: Information technology.

NECTEC: National Electronics and Computer Technology Center.

PC: Personal Computer.



CHAPTER II

LITERATURE REVIEW

This chapter explores the various literature and research work related to this study. It aims at allowing the reader to better understand the framework adopted and to make the variables used clearer. At first glance, the researcher focuses on brand equity and then relates it to research framework. The ideas presented in this chapter will help readers interpret the true meanings that the researcher intended to do.

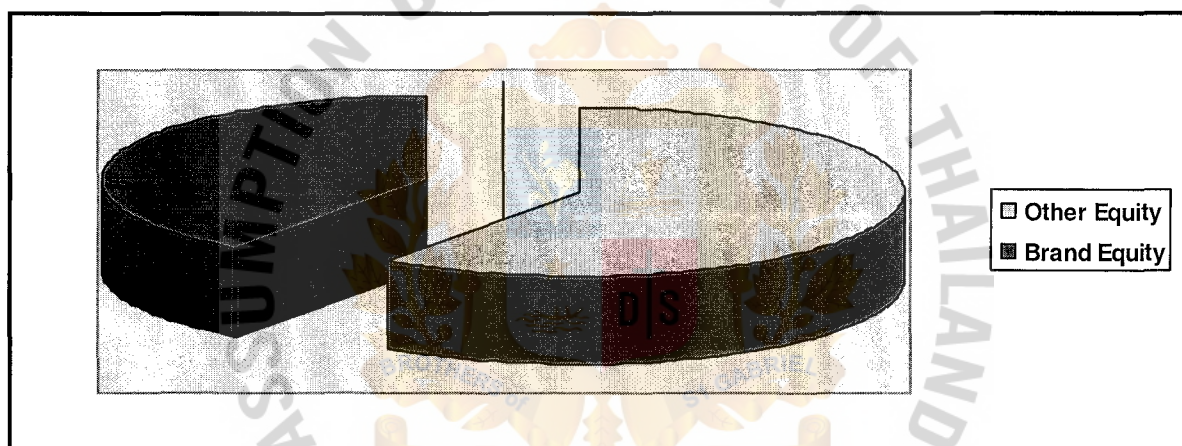
2.1 Brand Equity

Brand equity is a focal point for all the positive and negative impressions created by the buyer over time as he comes into contact with the brand's product (Kapfer, 1992). Brands are chosen as a result of habit of an impulse or of a well thought choice. The challenge of the brand owners is to exploit the features of each factors of brand equity so that the automatic purchase of the product is reinforced. Mahajan, Rao and Srivastava (1994) claimed that customer based brand equity could be measured by level of consumers' perception. Brand equity can be viewed as the perceived value of the product in consumers' mind. On the other hand, Faruquhar (1990) and Ijiri (1998) suggested that, instead of consumer perception, it can be viewed by judging the corporation's marketing efforts on its brand.

Upshaw (1995) puts brand equity as the total accumulated value or worth of brand; the tangible and intangible assets that the brand contributes to its corporate parent, both financially and in terms of selling leverage. Those who support the aspects of financial

approach (Aaker 1992, Davis and Douglass 1995) stated that, without putting a monetary value to each brand, corporate executives have no way knowing the total worth of their companies. Knapp (2000) explained that when organizations embrace the concept of thinking like a brand, everything they do and every product, service, and customer interaction is towards increasing brand's equity. As indicated in Figure 2.1, total equity is the summation of brand equity and other equity, the idea is to harness a brand's energy so that it adds to overall equity.

Figure 2.1: Total Equity



Source: The Brand Mind Set. Knapp, (2000).

The importance behind the need for this knowledge comes into play when a company is posturing itself for acquisition or attempting to ward off a take over. By far, the largest groups of scholars are those who hold consumer as the central point for the meaning of brand equity. Researchers of the consumer based segment, examine the attitudinal and behavioral patterns of the consumer to determine brand equity. The key components of these patterns which describe brand equity that researchers pointed out are brand image, loyalty, association, perceived quality, awareness and, received value.

Pokorny (1995) defined that brand image is the result of the personality of both the brand itself and the company producing the brand. The researcher was able to measure how positive or negative these factors are by 'objective descriptions attributes or characteristics consumers apply to the company'. Pokorny (1995) continued to state that brand image is the attitude of the consumers towards the brand and believes that perceptions developed about the product are realities that exist in the minds of consumer. Researcher suggested that companies need to identify those brand relationship that will incrementally build customer loyalty. Keller (1993) and Krishnan (1996) in their research on the brand stated that the back bone to building brand loyalty is by first establishing a strong brand knowledge base. Blackstone's (1995) thoughts for increasing brand loyalty were advertising. He suggested that moving from "persuasion" measure to those that promote "feelbetter" about using/buying/owning attributes. Nurturing these attributes helps to develop brand loyalty which "determine brand choice and creates repetitive brand purchasing"

Dayson, Farr and Hollis (1996) explained that brand loyalty in three categories as performance, advantage and bonding. To begin with a brand must have a presence in the market place. The brand has to have relevance to needs and wants of consumers. It must fulfill some of the consumer's core needs. The brand performance must live up to the claims producers as well as beat any standard set by competition. The brand must exhibit a quantifiable advantage over its competitors. Once these two are fulfilled, there exists bonding between the brand and its end user. The bonding is a result of a continuation of attributes that promote loyalty to the particular brand now and into the future as well. According to Krishnan (1996), consumer's knowledge of a brand is a result of the memory

of various brand associations the consumer has. A complex memory structure for that brand result. The more association, the richer the memory becomes.

According to Keller (1993) consumers' positive attitude towards brand is an important factor to be considered. Researcher believed that by building favorable brand association, the consumer will develop a positive attitude toward the brand. The more needs the brand satisfies, the more positive the attitude, the more positive the brand knowledge imprint. As the strength of the memory imprint increases, there is greater likelihood the information (knowledge) will become accessible to the consumer when he or she actively thinks about a product. Aaker (1996) stated that perceived quality is "usually at the heart of what customers are buying, and in that sense, it is a bottom line measure of the impact of brand identity". The other part of these factors is that it reflects a measure of goodness that spreads over all elements of the brand. Most of the studies show that perceptions about those benefits are closely related to perceived quality.

Keller (1998) continued state that 'customer based brand equity occurs when the consumer has a high level of awareness and familiarity'. Establishing brand awareness in consumers' memory in terms of a strong, favorable, and unique way will produce a knowledge structure that can affect consumer response and produce different types of consumer based brand equity. Aaker (1996) referred awareness to the strength of the brand's presence in the consumers mind. Dyson, Farr and Hollis (1996) clearly suggested that a brand must have presence in the market place and it must possess unaided brand awareness in order to influence the purchase intention. Awareness provides the brand with a strong familiarity. The most recent study of brand equity was about awareness with brand

association and brand equity (Yoo, Donthu and Lee 2000). These researchers indicated that brand awareness with brand association has a significant positive effect on brand equity. In order to build strong brand, firm must concern on brand identity, brand responses, brand meaning and brand relationship (Keller, 2001).

Years of research have shown that consumer perceptions and attitudes measured collectively, and commonly described as consumer brand equity. It has direct relationship to a brand's market position and business results. Marketers believe rely on advertising as a primary tool to develop and nurture brand equity (www.ipsos-asi.com, 16/04/'04).

Although there have been product specific measures of customer based brand equity (Park and Srinivasan, 1994), there exists only one study on empirical measurement of customer perceived brand equity (Martin and Brown, 1990). However this has not been used extensively. Lassar, Mittal and Sharma (1995), proposed five dimensions of brand equity namely performance, social image, attachment, value, trustworthiness. The rationale for including the five components of brand equity is that, performance is of critical essence for any brand. If a brand does not perform the functions for which it is designed and purchased, consumer will have low level of brand equity. Value is included because consumer choice of brand depends on a perceived balance between the price and product utility. Trust worthiness is included because consumer place high brand equity the brand they trust. Similarly, attachment or identification is included because consumer comes to identify with some brands and develop sentimental attachment with those brands (Lassar et al., 1995).

2.1.1 Operating Performance

Performance is of critical essence for any brand. If brand does not perform the functions for which it is designed and purchased, consumers would not buy the product and the brand will have very low levels brand equity. Researcher used performance as an inclusive term, to refer to the totality of the physical job. It is defined as ‘consumer’s judgment about a brand’s fault free and long lasting physical operation and flawlessness in the product’s physical construction’ (Lassar et al., 1995). The reason that brand name is used by consumers to infer quality of an unfamiliar product is because that brand name has built, based on its association with other quality products carrying that name, a value or utility; that is beliefs about quality have gone into that brand name’s value or equity (Brucks and Zeithaml, 1991). The significance of delivering reliable quality in order to accomplish a branded promise cannot be under estimated apparent quality provides a reason to buy, a point of segregation a prospect for premium pricing, channel interest and basis for brand extensions. The key is to deliver quality are to categorize those quality magnitude that are important to consumer and to communicate that message in reliable manner (Lassar et al., 1995).

A brand has to do with customers’ perceptions of the business and the type of service they expect. The study conducted by Young and Rubicam (1993) provides solid proof of how this can work. Young and Rubicam conducted survey of 13,000 brands among 95000 consumers around the world, the largest and most complete survey of its kind. The research study called “Brand Asset valuator (BVA)”, which began in 1993, gives Young and Rubicam strategic insight into the strengths and weaknesses of a client’s brand. This research tool demonstrates that a brand’s strength is primarily built through

differentiation and performance. Young and Rubicam (1993) stated that performance and expectation goes together in line. When product does not fulfill the expectations of consumer, a low level of impression created in consumer's mind. In lay terms, this means a brand needs to be different from other similar products in terms of performance and relevant to consumers' lives. Knowing this, companies differentiate their brands even though, they exist in a commodity market projecting better performance, by providing better quality, value and most important customer services (Knapp, 2000). If brand does not perform the functions for which it is designed and purchased, consumers would not buy the product and the brand will have very low level of brand equity. Therefore to fulfill customers' expectation, product needs to perform the function that designed for (Lassar et al., 1995).

2.1.2 Social Image

It is consumer's perception of the esteem in which the consumer's social group holds the brand. Social image includes the attributions a consumer makes towards the brand. Social image is value adding because of the social reputation associated with owning or using a brand. For example, although Timex and Swatch watches may perform equally, the Swatch brand name connects greater value among the American youth, social image contributes more to brand's equity in product categories such as designer clothing and perfumes (Lassar et al., 1995).

Feldwick (1996) stated that organizational association is one important factor explaining that the association reflects the fact that products are used to express life styles where as other associations involving product applications, type of people who might use

the product, stores that carry the product, or sales people who handle the product or even the country of origin. Emotional flow and integration can affect consumers' intentions through their effects on brand image, relevance, and self-brand image congruity. Because emotional integration clearly resulting from product use, and because emotional integration and dynamic flow produce empathy, self-relevance, and self-brand image congruity, these variables may encourage consumers to use the product (Kamp and Edward, 1995). Consumers will prefer the brand if it expresses their (desired) character and identity, if an experience with it can tell a crisp and a precise story to the world about them. They want the encounter with the brand to define their identity and express it, to draw a complete picture of his character, personality and identity. The brand can be viewed as a person. A brand can be perceived as being competent, trustworthy, active, or youthful (Aaker, 1996). A brand personality may help communicate a product's attribute and thus contribute to a functional benefit. Similarly, it can help create a self-expressive benefit that becomes a vehicle for the customer to express his or her own personality.

2.1.3 Value

Value is defined as 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. It is consumers' choice of a brand depends on a perceived balance between the price of a product and all its utilities. Some brands have higher brand equity because of their price value (Lassar et al., 1995). In markets with more complex products where differences in value can be accounted for both by functional differences and the impact of the brand, getting at the value of the brand with respect price paid it is very important to customer point of view to measure what value they receive from the product. When price is

higher relative to the utility received by customer the value of the brand is perceived to be low because value is estimated by what is paid and utility received (Dwyer and Tanner, 2002).

According to Woodall (2003) value for the customer is any demand side, personal perception of advantage arising out of a customer's association with an organization's offering, and can occur as reduction in sacrifice, presence of benefit (perceived as either attributes or outcomes), the resultant of any weighed combination of sacrifice and benefit (determined and expressed either rationally or intuitively); or an aggregation, over time, of any or all of these. The key factor in brand extension, according to Murphy (1990), is to understand main value the brand conveys to its customer. To develop a well structured plan of action for brands' equity is the value that consumer receives from the product or service they consume.

2.1.4 Trustworthiness

To develop the right relation with a brand that can lead to a long lasting bond, a brand can have an important emotional stance with trustworthiness. Consumers will prefer the product or service because they trust the brand and brand's product. What is developed from building a perception of trustworthiness is brand equity. The brands' value increases each time one delivers on one's promise. Firm may do all the right things in planning its marketing strategy, segment the market, develop a position, establish a balanced marketing mix with the reasonable expectation that it will succeed but more than these all it is important to build trust into firm's brand (Richman, 2001). According to Cateora (1996), a firm can position its brand with respect to a competitor because "some time it is not

important how good customers think a firm is, but how they believe it is better than its competitor”.

Lane and Bachmann (1998) defined trust as a degree of interdependence between the trustor and the trustee, it can be seen as a way to cope with risk or uncertainty, a belief or expectation that the other party in the relationship will not take advantage of the vulnerability that arises when the risk is accepted. When applied to business terms trustworthiness would be perceived as honesty in communication and dealings with consumer and product brand. It basically takes into consideration about product capabilities and its communication which provided by the brand.

It is proposed that the importance of trust arises from the uncertainty of human behavior. Situations involving trust are a subclass of those involving risk and if the individual did not face risk, he would not be engaged in a trusting behavior (Kennedy, 2001). Furthermore, it is argued that when an individual trusts another person, risk arises because he will be exposed to the possibility that the other person may take advantage of him. In addition, trust can be related to a situation of risk where the individual can lose for example time, reputation, money and, information (Humphrey, 1998).

It is argued that trust is related to risk since the necessity of trust arises when a bad outcome would make an individual regret his actions, in other words, trust presupposes a situation of risk (Madhok, 1995). Therefore, customer trust is a core identity of corporate brand, provides a strong basis for good relationship between customer and brand (Aaker, 1991). Building a powerful brand goes beyond creating a name, visual design, symbols, colors, or a tag-line. A brand to the company is the promise made to the customer to

deliver customer with the features, benefits and services consistently. A trust is a relation developed between customer and firm. An advertisement campaign can create brand awareness and even acceptability but brand experience (the entire set of actions and feeling that surround experience with brands) does the actual brand building. So, the organization has to make sure the brand experience of the consumer must be in line with what he perceives so that a strong brand is built (Humphrey, 1998).

2.1.5 Attachment

Consumers come to identify with some brands and develop sentimental attachment with those brands. For example, the vehement protests which the brief removal of “old” Coca-Cola brought forth by its loyal fans exemplify this dimension and its power in augmenting a brand’s utility. Lassar, Mittal and Sharma, (1995) defined it as “the relative strength of a consumer’s positive feelings toward the brand”. Brand loyalty, long a central construct in marketing, is a measure of ‘attachment’ that a customer has to a brand. It reflects how likely a customer will be to switch to another brand, especially when that brand makes a change, either in price or in product features. As brand loyalty increases, the vulnerability of the customer base to competitive action is reduced. It is one indicator of brand equity (Aaker, 1991).

2.1.6 Consumer Perception

Before buying or using a product, consumers have an idea about the product's characteristics and the extent to which it will satisfy their needs and wants. Depending on the amount of information they received regarding the product and their experience, the

certainty with which they can predict the product's properties will vary. Consumers base product choice decisions largely on these expectations (Kotler et al., 1999).

Leon (1998) stated that perception is the interpretation process by which consumers make sense of their own environment. Many people believe that perception is passive or rather than we see and hear what is out there very objectively. However, the truth is quite the contrary. People actually actively perceive stimuli and objects in their surrounding environments. Consumers see what they expect to see, and what they expect to see usually depends on their general beliefs and stereotypes. Since different groups (segments) of people have different general beliefs and stereotypes, they tend to perceive stimuli in the marketing environment differently. “What does all of this mean for marketers? Basically, that marketers need to be aware of this fact about perception so that they may be able to tailor their marketing stimuli (such as, ads, packaging and, pricing) differently for the different segments they are targeting”.

According to Kotler (1996) perception is the process of becoming aware of many stimulates impinging on one's sense-influences, what messages one takes in and what meaning to individual. It is how consumers see and experience about the product and brand. People act on the basis of their perception regardless whether is accurately or inaccurately reflect reality. Infact reality is what person perceives it to be. Perception is the process by which an individual selects, organizes, and interprets information inputs to create a meaningful picture of the world. Perception depends not only on the physical stimuli, but also on the stimuli's relation to the surrounding field and on conditions with in the individual. The key point is that perceptions can vary widely among individuals exposed to

the same reality. One person might perceive a fast talking salesperson as aggressive and insincere, another as intelligent and helpful. Each will respond differently to the sales person. In marketing field people's perceptions are more important than reality.

2.1.7 Perception of Stimuli

Perception is the process by which consumer select, organize, and interpret stimuli to make sense of them Schiffman and Kanuk (2004). Stimuli are more likely to be perceived when they:

- Confirm to consumers' past experience.
- Confirm to consumers' current beliefs about brand and its product.
- Are not too complex.
- Are believable.
- Relate to a set of current needs.
- Do not produce excessive fears and anxieties.

It is clear that consumers' perceptions of stimuli, as well as their exposure to stimuli, are selective. Ads that reinforce consumers' beliefs and experiences are more likely to be noticed and retained. By perceiving stimuli selectively, consumers attempt to achieve a state of psychological equilibrium. Once exposed to the stimulus, consumers' perceptions go through three distinct phases: attention, comprehension, and retention.

Attention is the process of noticing a stimulus or certain portions of it. Attention is selective; that is, consumers are more likely to notice the portions of a stimulus that relates to their needs and confirms to their experiences.

Comprehension is understanding and interpreting the message. It, too, is a selective process; consumers are more likely to interpret a message to agree with their beliefs. Two

consumers may interpret the same ad differently because of difference in beliefs, attitudes, and experiences regarding the product being advertised.

Retention is phenomenon of keeping the stimuli in mind. A message can be noticed, and quickly forgotten. Consumers are more likely to retain in their memory those messages that are most relevant to their needs. Retained information is stored in consumers' memory, which is post composed of past information and experience. New information on brands and products may stimulate recall of past information, and is then retained in memory.

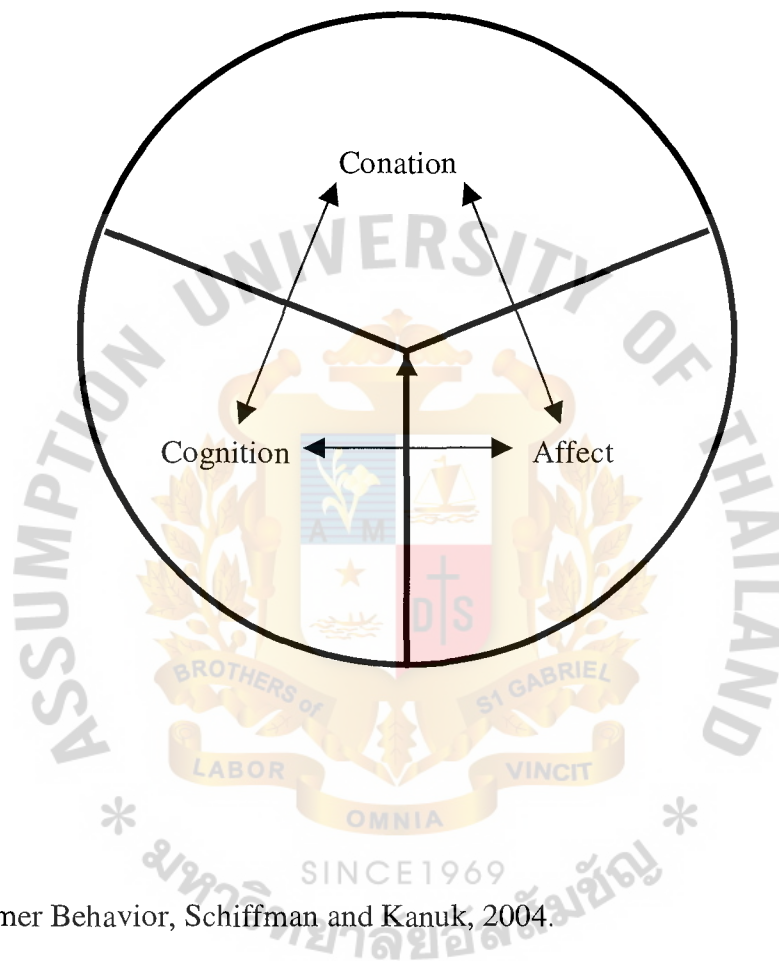
2.1.8 Attitude

There are different definitions for attitude, however, that advanced by Schiffman and Kanuk (2004) contains most of the major concepts, a learned predisposition to behave in a consistently favorable or unfavorable way with respect to a given object. The tri-component attitude model views overall attitude as consisting of the cognitive, affective and conative components. Using this model, it would provide with information about the knowledge consumers have about both products, based on direct experience and related information source. The cognitive component; the affective component would provide information about the consumers' emotions or feelings about the products and their overall assessment.

The first part of the tricomponent attitude model consists of person's cognitions, that is, the knowledge and perception that are acquired by a combination of direct experience with the attitude object and related information from various sources. This knowledge and resulting perceptions commonly take the form of belief; that is, the

consumer believes that the attitude object possesses various attributes and that specific behavior will lead to specific outcomes.

Figure 2.2: Tricomponent Attitude Model



Source: Consumer Behavior, Schiffman and Kanuk, 2004.

The second part of the tricomponent model consists of person's emotions or feelings about a particular product or brand and it is called affective component of an attitude. These emotions and feelings are frequently treated by consumer as primary evaluative measure. Schiffman and Kanuk (2004) stated that emotional states may enhance or amplify positive or negative experiences and those later recollections of such experiences may impact what comes to mind and how the individual acts.

Conation, the final component of the tricomponent attitude model, is concerned with the likelihood or tendency that an individual will undertake a specific action or behave in a particular way with regard to the attitude object.

2.2 Summary

It should be apparent that the methods of defining brand equity vary widely. Many reasons can be cited for inability to reach agreement on one definition. Supporting this, as Feldwick (1996) stated that, it is pointless to argue about which (meanings) is right or wrong. However the researcher would like to conclude first and foremost by openly admit that, there is no common way to define brand equity. It is all about how consumers, customers, employees, and all the stake holders feel about a brand. This study basically focuses on the customer based perspective of brand equity. Because customer based brand equity is driving force for incremental financial gains to the firm. Also customers' perception of brand is overall superiority of the brand.

2.3 Previous Empirical Research and Methodology

Lassar et al. (1995) studied customer based brand equity to compare three television monitor products namely RCA, Sony and Goldstar. The objective of the research was to compare the brand equity of the three different brands of same product category. Descriptive research was carried out as research method. The descriptive research was conducted in order to describe the respondent's perception about brand equity dimensions and also demographic characters. Questionnaires were administered to 113 respondents. The questionnaire included questions that were to answered on the scale 1 to 7, where 1

indicates “strongly disagree” and 7 indicates “strongly agree”. They developed questionnaire so that consumers could use to compare the three brands simultaneously. Lassar et al. (1995) concluded that Sony was rated the highest and also the highest prices. Although RCA and Goldstar had similar ratings, it is found that Sony’s price is higher than RCA and Goldstar. In conclusion they stated that prices reflected the equity associated with the brand.

Kim (2004) conducted a study to compare the brand equity of high performing and low performing restaurant. The objective of the study was to understand the difference in consumer perception about the high performing and low performing restaurant. According to the study, each respondent was requested to answer questionnaire for a specific restaurant that he or she could most certainly remember from his or her most recent visit. This provided an underlying premise of an independent t-test, such that dividing restaurant into two different performing groups would result in two corresponding independent groups of respondents. A total of 394 respondents participated in the survey. Dividing the restaurants into high-performing and low-performing groups, the researchers found that customers differentiated the high-performing restaurants on several product-quality measures, including knowledgeable employees and food served on time and as ordered. Oddly, high-and low-performing restaurants were not differentiated on such other quality factors as making quick corrections to errors, experienced personnel, and cleanliness. Comparing two groups, respondents showed less loyalty to high performing restaurants.

Punj and Hillyer (2004) conducted a research on purchase intention using a cognitive model of customer-based brand equity. The main purpose of the research was to

identify the underlying cognitive structure of brand equity. Existing research on brand equity is used to identify four cognitive "components" of customer-based brand equity. These are labeled as global brand attitude, strength of preference, brand knowledge, and brand heuristic. A conceptual framework of how these components (or sub-constructs) are empirically tested using data from two frequently purchased product categories. Covariance structure modeling was used as the analysis methodology. The results indicate that all the identified cognitive "components" are important determinants of customer-based brand equity. Specifically, the brand heuristic component serves as an important mediator in two "cognitive chains" that link global brand attitude to brand knowledge and global brand attitude to strength of preference respectively. The study findings have important implications for designing equity maintenance strategies for frequently purchased products.

Samaipattana (2003) conducted a research to compare the consumer satisfaction between 'Big C super center' and 'Tesco lotus'. The instrument for this survey was questionnaire. The objective of the research is to find out difference in consumer perception between Big 'C' center and Tesco lotus. Target population is this study was both male and female, aged 18 years old and above, in all education levels and all occupations who have visited the store. The primary data collected through survey by using questionnaire that was distributed the sample of 382 respondents. In first stage researcher used quota sample to show the proportion of the sample setting 50:50 samples for each store in order to get total sample respondents to be equal to 382. Second stage researcher used systematic sampling method in order to collect data. Five point Likert scale was used to gather the despondence's response. t- Test was used to as statistical tool to test

the hypothesis. The findings indicated that the majority of the customers are positively satisfied toward the two stores, but 'Big C' super center has less mean scores than the Tesco lotus.



CHAPTER III

RESEARCH FRAMEWORK

This chapter was designed to provide the research framework used in this study. Before proceeding to this chapter it would be worthwhile to recall the objective of this research study. This study was mainly focused on comparing consumers' perception about brand equity of two brands; also chapter includes the conceptual framework, research hypothesis and operationalization of variables.

3.1 Theoretical Framework

Customer based brand equity has been defined the totality of the brand's perception by the customer, including the relative perceived quality of the products and services, customer attachment, satisfaction and overall esteem toward the brand (Knapp, 2000). Thus, brand equity was conceptualized from the perspective of the individual consumer and customer based brand equity occurs when the consumer were familiar with the brand's product and holds some favorable, strong and unique brand association in memory. Based on this definition Lassar et al. (1995) derived five important considerations to define brand equity, such as operating performance, social image, value, trustworthiness, and attachment. They stated that brand equity refers to consumer perception rather than any objective indicators.

In proposing these components Lassar et al. (1995) regarded brand equity as associations consumer hold. The rationale for including the five components of brand equity is that, performance is of critical essence for any brand. If a brand does not perform

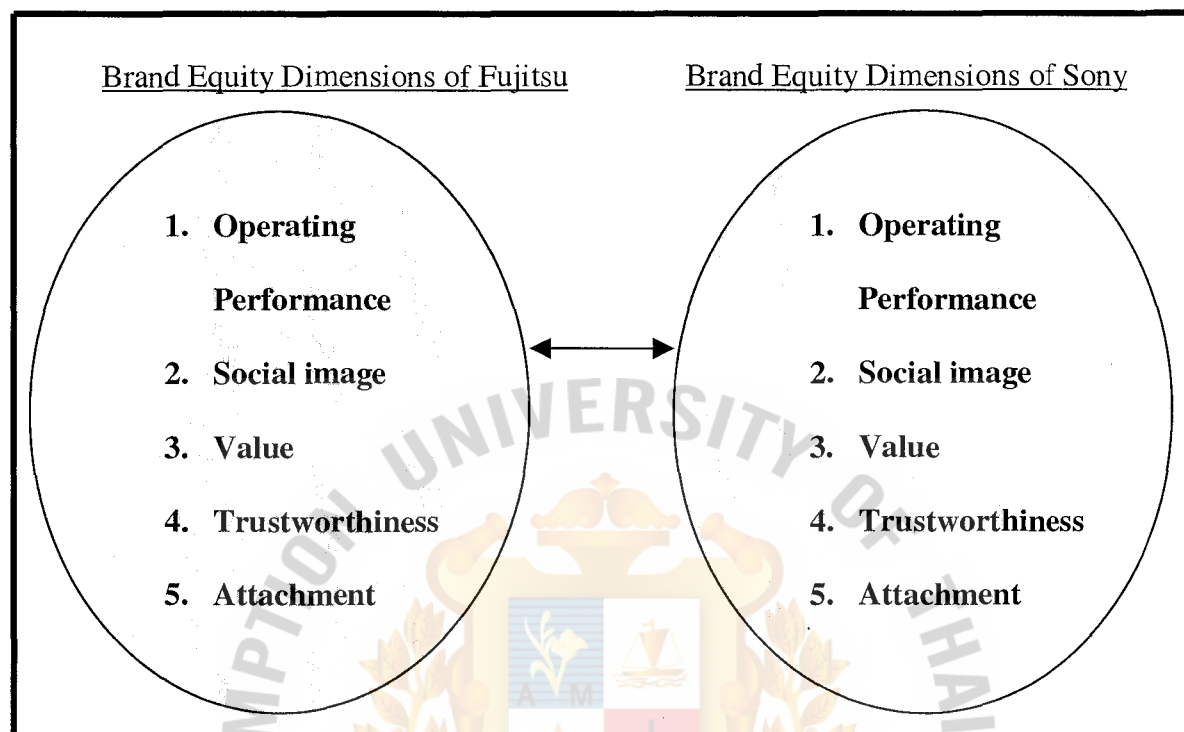
the functions for which it is designed and purchased, consumer will have low level of brand equity. Brand equity refers to customer perceptions rather than any objective indicators. It refers to a global value associated with the brand. Trustworthiness is important factor because consumer place high brand equity the brand they trust. Similarly, attachment or identification is included because consumer comes to identify with some brands and develop sentimental attachment with those brands (Lassar et al., 1995).

3.2 Conceptual Framework

The development of a conceptual framework is arguably the most important part of any research. The conceptual framework involves concepts, which are general representation of the phenomena to be studied. The development of a conceptual framework involves four element; identification of concepts, definition of concept, relationship and operationalisation of the concepts. The operationalisation concept involves deciding how they might be measured, if quantitative in nature (Ticehurst and Veal, 2000).

This study focuses on five dimensions of brand equity, in particular from Lassar et al. (1995) and used their concept to adjust conceptual framework.

Figure 3.1: Conceptual Framework



Source: Model adapted from Lassar et al. (1995).

The underlying principle for including the above components of brand equity is that, performance is of significant essence for any brand. If a brand does not achieve the functions for which it is designed for, consumer will have low level of brand equity. Value is included because consumer choice of brand depends on a perceived balance between the price and product utility. Trustworthiness is included because consumer places high on brand equity the brand they trust, the higher the trust, the higher the brand equity on consumers' mind. Similarly, attachment is taken into account because consumer comes to identify with some brands and develop sentimental attachment with those brands.

3.3 Hypothesis Statements

From the conceptual framework, following hypothesis are developed.

H₀₁ – There is no difference in consumers' perception in terms of performance of Fujitsu and Sony brands.

H_{a1} - There is a difference in consumers' perception in terms performance of Fujitsu and Sony brands.

H₀₂ – There is no difference in consumers' perception in terms of social image of Fujitsu and Sony brands.

H_{a2} - There is a difference in consumers' perception in terms of social image of Fujitsu and Sony brands.

H₀₃ - There is no difference in consumers' perception in terms of value of Fujitsu and Sony brands.

H_{a3} - There is a difference in consumers' perception in terms of value of Fujitsu and Sony brands.

H₀₄ - There is no difference in consumers' perception in terms of trustworthiness of Fujitsu and Sony brands.

H_{a4}- There is a difference in consumers' perception in terms of trustworthiness of Fujitsu and Sony brands.

H₀₅ - There is no difference in consumers' perception in terms of attachment of Fujitsu and Sony brands.

H_{a5} - There is a difference in consumers' perception in terms of attachment of Fujitsu and Sony brands.

H₀₆ - There is no difference in consumers' perception in terms of brand equity of Fujitsu and Sony brands.

Ha₆ - There is a difference in consumers' perception in terms brand equity of Fujitsu and Sony brands.

3.4 Operationalization of Variables

Table 4.2: Operationalization of Variables

Variable	Definition	Operational Definition	Level of Measurement	Questionnaire No
Operating Performance	Consumer's judgment about a brand's fault free and long lasting physical operation and flawlessness in the product's physical construction (Lassar et al. 1995).	The extent to which consumer would agree for trouble free functioning of the laptop.	Interval	1-4
Social Image	The consumers' perception of the esteem in which the consumers' social group holds the brand (Lassar et al. 1995).	Level of recognition among the social friends.	Interval	5-8
Value	A product (services) for which the customer can calculate the money	Degree of agreement towards what is	Interval	9-11

	<p>saved by purchasing it or a product (services) for which the benefits are perceptual; customers always have some notion of what constitutes a good or bad price. This notion is developed by comparing the price being charged to the perceived value or benefits that would be derived from the product. It also can be termed as received value (Donald and Russell, 1994).</p>	<p>paid (price) for the product and benefits received.</p>		
Trustworthiness	<p>The confidence a consumer places in a brand and brand's communications, and as to whether the brand's actions would be in the consumer's interest</p>	<p>Degree of dependability towards brand.</p> <p>Level of confidence in a brand and its people.</p>	Interval	12-14

	(Lassar et al., 1995).			
Attachment	The relative strength of consumers' positive feelings toward the brand (Lassar et al., 1995).	The level or extent to which an individual feels emotionally close towards brand.	Interval	15-17
Brand equity	It is the totality of the brand's perception by the customer, including the relative perceived quality of the products and services, customer attachment, satisfaction and overall esteem toward the brand (Knapp, 2000).	All above factors from performance, social image, value, trustworthiness, and attachment together considered for the totality of the brand equity.	Interval	1-17

CHAPTER IV

RESEARCH METHODOLOGY

This chapter discusses the methodology adopted in this study. From chapter three, we can observe a potential significance of the conceptual model. To implement the thoughts from chapter three this chapter would help the reader to understand the proposed sampling plan and the procedure adopted is explained. The major task of this chapter is to describe the research method, selection of population and sample size, method of data collection and analysis.

4.1 Research Method

This part explains the research method used in this study. Descriptive research method was used in this study. Descriptive research is a type of research which generally adopted for researches like consumer behavior, consumer perception which includes image studies, which determine consumer perception of the firm and its product, product usage studies, consumer perception, pricing studies etc (Malhotra, 2002). This method would be best suitable for this study because basically this study aims at consumer perception.

4.2 Respondents and Sampling Procedure

4.2.1 Target Population

This research was basically aimed to study consumers' perception of brand equity of the two laptop brands in the Bangkok area. The target population is the collection of element or objects that possess the information sought by the researcher and in terms of

which inferences are to be made (Malhotra, 2004). Therefore the target population was both male and female people who own laptop brands of either Fujitsu Life book laptop or Sony Vaio laptop. Researcher collected data from the respondents in Fujitsu and Sony laptop and service centers.

4.2.2 Sampling Procedure

Non Probability sampling method is used, the process is as follows:

Stage 1 – Quota sample ensures that the composition of the sample is the same as the composition of with respect to the characteristics of interest (Malhotra, 2004). Therefore, the questionnaires were divided into (50:50) two sets for two groups of respondents taking into consideration equal importance for both the brands and to collect the data separately in different places, it was divided as follows, (total sample size estimated 384, shown in section 4.2.3):-

Fujitsu laptop users-192

Sony laptop users- 192

Stage 2 – Judgment sampling is a form of sampling that is selected based on judgment of the researcher (Malhotra, 2004). Therefore questionnaires were distributed and collected from following places:

1. Fujitsu Laptop Service Center, Plonchit, Bangkok.
2. Fujitsu Laptop Shop and Service Center, Sukhumvit, Bangkok.
3. Fujitsu Laptop Shop and Service Center, Pantip Plaza, Bangkok.
4. Fujitsu laptop shop and Service center, Petchburi, Bangkok.
5. Fujitsu Laptop shop and Service center, Silom, Bangkok.
6. Sony Laptop Shop and Service Center, Pantip Plaza, Bangkok.

7. Sony Laptop Shop and Service Center, Vibhavadi Rangsit, Bangkok.
8. Sony Laptop Shop and Service Center Bankapi, Bangkok.
9. Sony Laptop Shop and Service Center, Petchburi, Bangkok.
10. Sony Laptop Shop and Service Center, Silom, Bangkok.

All the places were located in Bangkok. All the locations were located in center of the Bangkok.

Stage 3 - The researcher used non probability convenience sampling technique to collect data from respondent. Convenience sampling attempts to obtain a sample of convenient element. Often, respondents are selected because they happen to be in the right place at right time (Malhotra, 2004). Therefore researcher collected the data from above mentioned places by distributing questionnaire to the respondents who own either Fujitsu or Sony laptops.

4.2.3 Sample Size

The target population was for this study would be the owners of Fujitsu and Sony laptops. But the exact numbers of these two laptops users were unknown in Bangkok area. Therefore sample size was determined by estimating the proportion. Respondents were chosen, with 95% confidence level and 5 % sampling error, therefore sample size can be estimated by following way (Malhotra, 2004).

$$\text{Sample size} = \frac{Z^2 \times pq}{e^2}$$

$$\text{Sample size} = \frac{Z^2 \times p(1-q)}{e^2}$$

$$\text{Sample size} = \frac{(1.96)^2 \times (0.5)(1-0.5)}{0.05^2}$$

$$\text{Sample size} = 384$$

Where Z = score based on desired level of confidence. The researcher has set at 95% confidence level, Therefore, standard score of Z associated with the above mentioned confidence level is equal to 1.96.

p =the population proportion for the research calculated by the percentage of respondent. It is assumed to 0.5 (50%).

$$q=1-p,$$

e =the allowable error (precision), it is 0.05.

4.3 Research Instrument

To collect the data for this study a closed questionnaire was used. It was used to ask respondents specific questions to obtain the research objectives. For this purpose questionnaire was formed by adapting Lassar, Mittal and Sharma (1995) model of similar research. The questionnaire was, more specifically, the structured indirect questionnaire. The questionnaire was structured so that the questions (Appendix A) are asked in exactly the same order to all the respondents. Each questionnaire had two parts, total 23 questions, and part one contained seventeen questions which studied the variables and it was measured in 7 point Likert scale where 1 indicated 'strongly disagree' and 7 indicated 'strongly agree', and part two was used to study general demographic information such as age, gender, education, nationality, occupation, and income.

4.4 Data Collection

Primary Data

As discussed earlier, data was collected from the target respondents of people in Bangkok who own the Fujitsu or Sony laptops regardless of gender and marital status. The respondents were approached and survey questionnaire was distributed. The questionnaire was issued personally to each of the respondents. The collection process was face-to-face questioning of specially designed questionnaire. Data was collected during working hours of each day. Primary data were gathered and assembled specifically for the study.

Secondary Data

Secondary data or historical data is that, which are previously collected and assembled for study concerned. For this research, the secondary data has been collected and gathered from journals, internet, consumer behavior, business research text books. Secondary analysis involves the utilization of existing data, collected for the purposes of a study, in order to pursue a research interest which is useful for understanding of the study.

4.5 Statistical Treatment

The analysis was done by using Statistical Package for Social Science (SPSS). For this study, independent sample t Test was used to test the hypothesis. An independent sample t-Test is used when it required to compare the means of a dependent variable for two independent groups. Also, if samples were collected from two different individuals within the same population at different times, independent sample t-test would be the best suited (Malhotra, 2002). The t-test takes into consideration the means and standard deviation of the two groups on the variable and examines if the numerical difference in means is significantly different from zero as postulated in null hypothesis.

4.5.1 Statistical method used for the hypothesis

Hypothesis Statement	Statistic Used
<p>H₀₁ – There is no difference in consumers’ operating perception in terms of performance of Fujitsu and Sony brands.</p> <p>H_{a1} - There is difference in consumers’ perception in terms of operating performance of Fujitsu and Sony brands.</p>	<p>Independent Sample</p> <p>t-test</p>
<p>H₀₂ – There is no difference in consumers’ perception in terms of social image of Fujitsu and Sony brands.</p> <p>H_{a2} - There is difference in consumers’ perception in terms of social image of Fujitsu and Sony brands.</p>	<p>Independent Sample</p> <p>t-test</p>
<p>H₀₃ - There is no difference in consumers’ perception in terms of value of Fujitsu and Sony brands.</p> <p>H_{a3} - There is difference in consumers’ perception in terms of value of Fujitsu and Sony brands.</p>	<p>Independent Sample</p> <p>t-test</p>
<p>H₀₄ - There is no difference in consumers’ perception in terms of trustworthiness of Fujitsu and Sony brands.</p> <p>H_{a4}- There is difference in consumers’ perception in terms of trustworthiness of Fujitsu and Sony brands.</p>	<p>Independent Sample</p> <p>t-test</p>
<p>H₀₅ - There is no difference in consumers’ perception in terms of attachment of Fujitsu and Sony brands.</p>	<p>Independent Sample</p> <p>t-test</p>

Ha ₅ - There is difference in consumers' perception in terms of trustworthiness of Fujitsu and Sony brands.	
H ₀₆ - There is no difference in consumers' perception in terms of brand equity of Fujitsu and Sony brands.	Independent Sample t-test
Ha ₆ - There is difference in consumers' perception in terms of brand equity of Fujitsu and Sony brands.	

4.6 Pre-Testing

The testing of the questionnaire on a small sample of respondents for the purpose of improving the questionnaire by identifying and eliminating potential problem before using it in the survey is called pretesting (Malhotra, 2002). Similar meaning Breen (2001) stated that the objective of the pre testing of the questionnaire on small sample of respondents is to identify and eliminate the short comings of the questionnaire. The questionnaires were pre-tested with 40 respondents. Then the feed back from the result obtained were reviewed and modifications were made to the questionnaire. Some changing like simplification of words and changes the tenses of the questions were made. Also in demographic factors some of the subsections are changed, for example in education, sub section 'others' was included.

The researcher conducted the pretest also to test the reliability of questionnaire to test whether the questions describe the same idea to all respondents. The researcher used the Cronbach's coefficient alpha scales to test the reliability of the test. The result of the test was found at more than 0.6. In this case, the question is considered to be reliable. The

closer the Cronbach's alpha is to 1, the higher the internal consistency and reliability Zikmund (2003). A result of reliability test is summarized in Table 4.3.

Table 4.3: Results of reliability test

Variable	Reliability Score
Performance	0.7494
Social Image	0.8144
Value	0.6765
Trustworthiness	0.9053
Attachment	0.8991
Overall	0.9448

CHAPTER V

DATA ANALYSIS

This chapter explains the analysis of data collected from the questionnaire survey. It mainly includes descriptive static analysis and inferential statistics. Descriptive analysis and hypothesis testing are used to infer the findings from the study. It examines the analysis of data collected, which contains profile of the sample, test of hypothesis result, including an explanation of the results respectively. The data was interpreted by using Statistical Package for Social Science.

5.1 Descriptive Analysis

Descriptive analysis refers to the transformation of raw data into a form that will allow the reader to understand the data more easily. It is the method used including the collection, presentation and characterization of a set of data in order to properly describe the various features of the information collected (Carlson and Thorne, 1996).

Descriptive statistics was used for this study, and it is actually an efficient means of summarizing the characteristics of the collected data. The results of the analysis are then displayed on tables referred to as frequency tables. Since there are two sets of respondents of Fujitsu and Sony, both were analyzed separately and results are shown under each subheading.

Gender:

Fujitsu

As it can be seen from Table 5.1, there were total of 130 (67.7%) male respondents and 62 (32.3%) female respondents for the Fujitsu laptop holders.

Table 5.1 Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	130	67.7	67.7	67.7
	female	62	32.3	32.3	100.0
	Total	192	100.0	100.0	

Sony

Similarly, from the Table 5.2 it can be seen that there were 135 (70.3%) male respondents and 57 (29.7%) female respondents participated in the questionnaire survey.

Table 5.2 Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	135	70.3	70.3	70.3
	female	57	29.7	29.7	100.0
	Total	192	100.0	100.0	

Age

Fujitsu

Out of 192 respondents, 8 (4.2%) participants fall into the age group of 14-19, the major part belongs to age group of 20-29 that is 75 (39.1%), similarly 70 (36.5%) belongs to age group of 30-39 and 39 (20.35%) belongs to 40-49 year age group.

Table 5.3 Age

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 14-19	8	4.2	4.2	4.2
20-29	75	39.1	39.1	43.2
30-39	70	36.5	36.5	79.7
40-49	39	20.3	20.3	100.0
Total	192	100.0	100.0	

Sony

From Table 5.4, it can be seen that most of the Sony laptop owners fall into 30-39 years age group, 73 (38.5) and followed by 20-29 year age group, 70 (36.5%). There were 40 (20.8%) respondents belongs to 40-49 years age group and only 9 (4.75%) respondents from age group of 14-19.

Table 5.4 Age

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 14-19	9	4.7	4.7	4.7
20-29	70	36.5	36.5	41.1
30-39	73	38.0	38.0	79.2
40-49	40	20.8	20.8	100.0
Total	192	100.0	100.0	

Nationality

Fujitsu

A total of 164 (85.5%) respondents were Thai and remaining 28 (14.6%) represented non Thai.

Table 5.5 Nationality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Thai	164	85.4	85.4	85.4
	non-Thai	28	14.6	14.6	100.0
	Total	192	100.0	100.0	

Sony

A total of 169 (88%) respondents were Thai and remaining 23 (12%) represented non Thai.

Table 5.6 Nationality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Thai	169	88.0	88.0	88.0
	non-Thai	23	12.0	12.0	100.0
	Total	192	100.0	100.0	

Education

Fujitsu

It was found out that, 126 (65.6%) of the total respondents were graduate, there were 35 (18.2%) master and above, diploma and under graduates were represented by 17 (8.9%) and 14 (7.3%) respectively.

Table 5.7 Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	under graduate	14	7.3	7.3	7.3
	diploma	17	8.9	8.9	16.1
	graduate	126	65.6	65.6	81.8
	master and above	35	18.2	18.2	100.0
	Total	192	100.0	100.0	

Sony

Similarly, 119 (62%) of the total respondents were graduate, there were 47 (24.5%) master and above, diploma and under graduates were represented by 11 (5.7%) and 15 (7.8%) respectively.

Table 5.8 Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	under graduate	15	7.8	7.8	7.8
	diploma	11	5.7	5.7	13.5
	graduate	119	62.0	62.0	75.5
	master and above	47	24.5	24.5	100.0
	Total	192	100.0	100.0	

Occupation

Fujitsu

It is found that, 90 (46.9%) respondents were private employees and 65 (33.9%) were self employed, which consisted major part of the respondents. Remaining were, 28 (14.6%) students and 9 (4.7%) were public employees.

Table 5.9 Occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	student	28	14.6	14.6	14.6
	private employee	90	46.9	46.9	61.5
	public employee	9	4.7	4.7	66.1
	self owned business	65	33.9	33.9	100.0
	Total	192	100.0	100.0	

Sony

Similarly, 75 (39.1%) respondents were self employed and 72 (37.5%) were privately employed, which consisted major part of the respondents. Remaining were, 33 (17.2%) students and 12 (6.3%) were public employees.

Table 5.10 Occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	student	33	17.2	17.2	17.2
	private employee	72	37.5	37.5	54.7
	public employee	12	6.3	6.3	60.9
	self owned business	75	39.1	39.1	100.0
	Total	192	100.0	100.0	

Income

Fujitsu

Here income is being referred to as monthly basis in bahts. As it can be seen from Table 5.10 most of the respondent's income is above 50,000 baht and it was represented by 60 (31.3%) respondents. Likewise, 45 (23.4%) falls in category of income between 30,000 to 39,999. Between 20,000 to 29,999 baht income per month was represented by 30 (15.6%) respondents. Similarly 29, 23, 5 respondents fall in the category of 40,000 to 49,999 and 10,000 to 19,999 and below 10,000 respectively.

Table 5.11 Income

In Bahts	Frequency	Percent	Valid Percent	Cumulative Percent
Valid <10000	5	2.6	2.6	2.6
10000-19999	23	12.0	12.0	14.6
20000-29999	30	15.6	15.6	30.2
30000-39999	45	23.4	23.4	53.6
40000-49999	29	15.1	15.1	68.8
=>50000	60	31.3	31.3	100.0
Total	192	100.0	100.0	

Sony

Similarly it can be seen from Table 5.11 that most of the respondent's income is above 50,000 baht and it was represented by 61 (31.8%) respondents. Second major income group falls in the category between 30,000 to 39,999 baht and it was 42 (21.9%) respondents. Other category of income group such as between 40,000 to 49,999, 20,000

to 29,999 and 10,000 to 19,999 and below 10000 were 34 (17.7%), 33 (17.2%), 17 (8.9%) and 5 (2.6%) respectively.

Table 5.12 Income

In Bahts/	Frequency	Percent	Valid Percent	Cumulative Percent
Valid <10000	5	2.6	2.6	2.6
10000-19999	17	8.9	8.9	11.5
20000-29999	33	17.2	17.2	28.6
30000-39999	42	21.9	21.9	50.5
40000-49999	34	17.7	17.7	68.2
=>50000	61	31.8	31.8	100.0
Total	192	100.0	100.0	

Mean and Standard Deviation

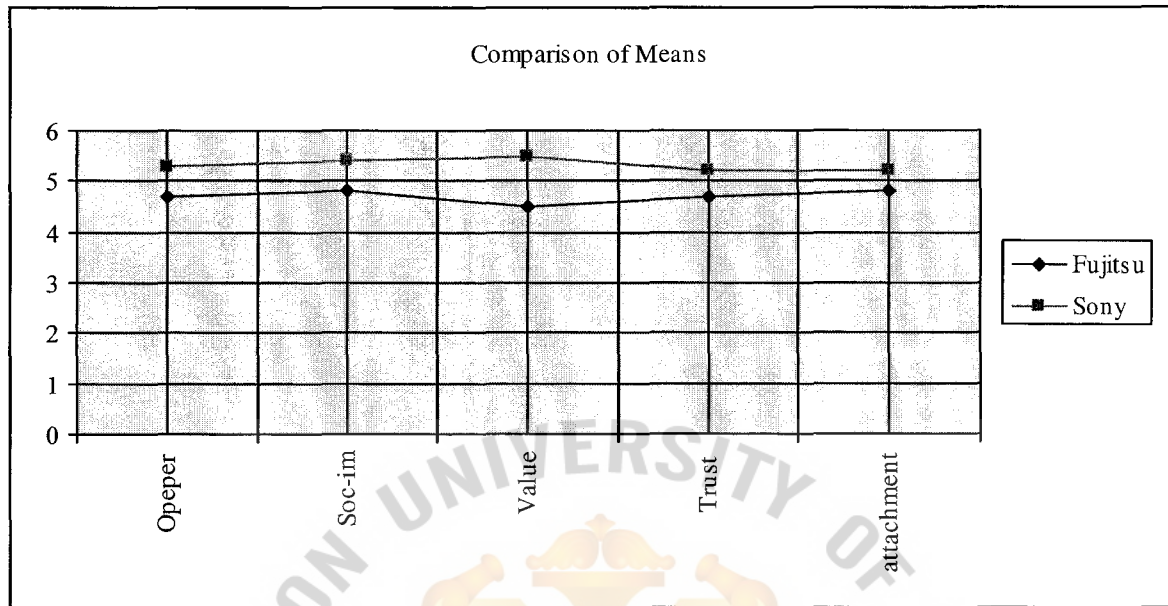


Figure 5.1 Comparison of mean of two brands with respect each brand equity dimensions.

Source: From SPSS out put, Mean Values are summarized (shown in appendix B).

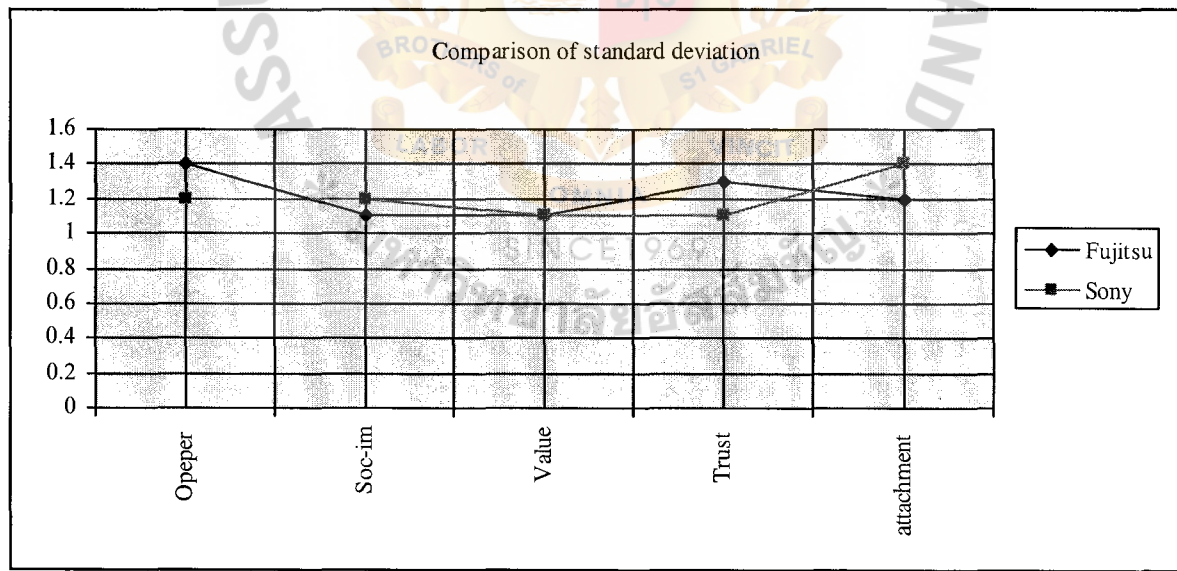


Figure 5.2 Comparison of Standard deviations of two brands with respect each brand equity dimensions.

Source: From SPSS out put, Standard deviation Values are summarized (shown in appendix B).

The x-axis represents each dimension of customer based brand equity and y-axis indicates the value of the mean and standard deviation of each state in Figure 5.1 and Figure 5.2 respectively. The mean value of each dimensions of brand equity is high for Sony respondents when compared to Fujitsu respondents. However, these values are analyzed in conjunction with the standard deviation values, a more reliable answer can be put forth. Respondents answered comparatively the highest for Sony; also standard deviation values are comparatively similar for both the respondents. A low standard deviation implies the respondents answers are very near to mean value.



5.2 Hypothesis Testing

The Independent t-Test was used to test the difference in the consumers' perception on each brand equity dimensions and all together defining brand equity of Fujitsu and Sony.

Hypothesis 1

H_{01} – There is no difference in consumers' perception in terms of performance of Fujitsu and Sony brands.

H_{a1} - There is a difference in consumers' perception in terms performance of Fujitsu and Sony brands.

Table 5.13 Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
OPER	Equal variances assumed	2.338	.127	-4.900	382	.000	-.6432	.13126	-.90131	-.38515
	Equal variances not assumed			-4.900	374.623	.000	-.6432	.13126	-.90133	-.38513

The Independent t-test analysis in Table 5.13 indicates that there is statistically significant difference between Fujitsu and Sony laptop owners regarding operating performance. With a 2 –tailed significance 0.000 which is less than 0.05 ($0.000 < 0.05$),

accordingly, the null hypothesis is rejected, indicating there is a difference in consumers' perception in terms of performance of Fujitsu and Sony brands.

Hypothesis 2

H_{02} – There is no difference in consumers' perception in terms of social image of Fujitsu and Sony brands.

H_{a2} - There is a difference in consumers' perception in terms of social image of Fujitsu and Sony brands.

Table 5.14 Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
SOIM AGE	Equal variances assumed	.004	.952	-4.807	382	.000	-.5716	.11890	-.80540	-.33783
	Equal variances not assumed			-4.807	380.857	.000	-.5716	.11890	-.80540	-.33783

As shown in Table 5.14, the null hypothesis is tested using independent t-Test. The result indicated that there was statistically significant difference in consumer perception about social image between Fujitsu and Sony brands at the significance of 0.000 which is less than 0.05. Therefore, the null hypothesis is rejected, concluding that, there is a difference in consumers' perception in terms of social image of Fujitsu and Sony brands.

Hypothesis 3

H_{03} - There is no difference in consumers' perception in terms of value of Fujitsu and Sony brands.

H_{a3} - There is a difference in consumers' perception in terms of value of Fujitsu and Sony brands.

Table 5.15 Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
V A L U E	Equal variances assumed	.538	.464	-8.463	382	.000	-.9583	.11324	-1.18098	-.73569
	Equal variances not assumed			-8.463	381.994	.000	-.9583	.11324	-1.18098	-.73569

The Independent t-test analysis in Table 5.15 indicates that there is statistically significant difference in value between Fujitsu and Sony laptop owners. With a 2 –tailed significance 0.000 which is less than 0.05 ($0.000 < 0.05$), accordingly, the null hypothesis is rejected, indicating there is a difference in consumers' perception in terms of value between Fujitsu and Sony brands.

Hypothesis 4

H_{04} - There is no difference in consumers' perception in terms of trustworthiness of Fujitsu and Sony brands.

H_{a4} - There is a difference in consumers' perception in terms of trustworthiness of Fujitsu and Sony brands.

Table 5.16 Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
TRUST	Equal variances assumed	5.204	.023	-3.768	382	.000	-.4601	.12210	-.70013	.22000
	Equal variances not assumed			-3.768	375.945	.000	-.4601	.12210	-.70015	.21999

From Table 5.16, it can be inferred that there is a statistically significant difference in consumers' perception in terms of trustworthiness between Fujitsu and Sony brands. Because 2 tailed significance (0.000) is less than 0.05. Therefore, the null hypothesis is rejected, concluding that, there is a difference in consumers' perception in terms of trustworthiness between Fujitsu and Sony brands.

Hypothesis 5

H₀₅ - There is no difference in consumers' perception in terms of attachment of Fujitsu and Sony brands.

H_{a5} - There is a difference in consumers' perception in terms of attachment of Fujitsu and Sony brands.

Table 5.17 Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
ATTACHMENT	Equal variances assumed	4.761	.030	-2.578	382	.010	-.3333	.12928	-.58752	-.07915
	Equal variances not assumed			-2.578	374.360	.010	-.3333	.12928	-.58753	-.07913

From Table 5.17, it can be inferred that there is a statistically significant difference in consumers' perception in terms of attachment between Fujitsu and Sony brands. Because 2 tailed significance (0.010) is less than 0.05. Therefore, the null hypothesis is rejected, concluding that, there is a difference in consumers' perception in terms of attachment between Fujitsu and Sony brands.

Hypothesis 6

H_{06} - There is no difference in consumers' perception in terms of brand equity of Fujitsu and Sony brands.

H_{a6} - There is a difference in consumers' perception in terms brand equity of Fujitsu and Sony brands.

Table 5.18 Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
BE	Equal variances assumed	.123	.726	-5.704	382	.000	-.5953	.10436	-.80047	-.39010
	Equal variances not assumed			-5.704	381.871	.000	-.5953	.10436	-.80047	-.39010

From Table 5.18, it can be inferred that there is statistically significant difference in consumers' perception in terms of brand equity of Fujitsu and Sony brands. Because 2 tailed significance (0.000) is less than 0.05. Therefore, the null hypothesis is rejected, concluding that, there is a difference in consumers' perception in terms brand equity of Fujitsu and Sony brands.

Table 5.19 Summary of results from the hypothesis testing

Hypothesis	Significance	Result
<p>H₀₁ – There is no difference in consumers’ operating perception in terms of performance of Fujitsu and Sony brands.</p> <p>Ha₁ - There is difference in consumers’ perception in terms of operating performance of Fujitsu and Sony brands.</p>	0.000	Null Hypothesis Rejected
<p>H₀₂ – There is no difference in consumers’ perception in terms of social image of Fujitsu and Sony brands.</p> <p>Ha₂ - There is difference in consumers’ perception in terms of social image of Fujitsu and Sony brands.</p>	0.000	Null Hypothesis Rejected
<p>H₀₃ - There is no difference in consumers’ perception in terms of value of Fujitsu and Sony brands.</p> <p>Ha₃ - There is difference in consumers’ perception in terms of value of Fujitsu and Sony brands.</p>	0.000	Null Hypothesis Rejected
<p>H₀₄ - There is no difference in consumers’ perception in terms of trustworthiness of Fujitsu</p>	0.000	Null Hypothesis Rejected

and Sony brands. Ha ₄ - There is difference in consumers' perception in terms of trustworthiness of Fujitsu and Sony brands.		
H ₀₅ - There is no difference in consumers' perception in terms of attachment of Fujitsu and Sony brands. Ha ₅ - There is difference in consumers' perception in terms of attachment of Fujitsu and Sony brands.	0.010	Null Hypothesis Rejected
H ₀₆ - There is no difference in consumers' perception in terms of brand equity of Fujitsu and Sony brands. Ha ₆ - There is difference in consumers' perception in terms of brand equity of Fujitsu and Sony brands.	0.000	Null Hypothesis Rejected

CHAPTER VI

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

In this chapter the findings from the study is discussed. It mainly includes three sections. The first section summarizes the summary of the findings, which focuses on the demographic findings and hypothesis testing. The second section discusses the conclusions drawn against the research objectives and the last section outline the recommendation and offers suggestion for future research.

6.1 Summary of the Findings

Demographic segmentation divides the respondents based on variables such as age, gender, nationality, education, occupation and income. It is an important factor to understand that a consumer's needs, wants, and usage rates often closely vary with demographic factors. Table 6.1 summarizes the major findings from the demographic information.

6.1.1 Summary of demographic findings

Table 6.1 Major Findings from Demographic Information

Demographic factor	Major segment	Fujitsu (persons in number and percentage, N=192)	Sony (persons in number and percentage, N=192)
Gender	Male	130 (67.7%)	135 (70.3%)
	Female	62 (32.3%)	57 (29.7%)
Age group	20-29	75 (39.1%)	70 (36.5%)

in years	30-39	70 (36.5%)	73 (38%)
Nationality	Thai	164 (85.4%)	169 (88%)
	Non-Thai	28 (14.6%)	23 (12%)
Education	Graduate	126 (65.6%)	119 (62%)
	Master and above	35 (18.2%)	47 (24.5%)
Occupation	Private employee	90 (46.9%)	72 (37.5%)
	Self owned business	65 (33.9%)	75 (39.1%)
Income per month in baht	Above 50,000	60 (31.3%)	61 (31.8%)
	30,000-39,999	45 (23.4%)	42 (21.9%)

As it can be seen from Table 6.1, the largest group of respondents was male for both Fujitsu and Sony respondents (total of 69.01%, total sample size is 384). Almost identical respondents participated in the questionnaire survey for both the groups of respondents. A total of 130 (67.7%) and 135 (70.3%) were male respondents and the remaining were the female respondents.

Most of the respondents fall in the age group between 20 to 29 years for Fujitsu laptop owners and it is 75 (39.1%) respondents, followed by 30 to 39 years (70 respondents, 36.5%) but for Sony respondents, it is mainly from 30 to 39 years age group, and it is 73 (38.5%) respondents followed by 20 to 29 years.

The respondents of both the groups (Fujitsu and Sony) were Thai people. More precisely there were 164 (85.4%) respondents for Fujitsu laptop owners and 169 (88%) respondents for the former.

The highest education level of majority of sample group was bachelor degree (245 respondents in total, 63.8%). This consists of 136 from Fujitsu respondents and 119 were from Sony laptop holders. Second major group belongs to master degree holders (82 respondents, 21.4%).

Highest percentages of the respondents were self owned business people and private employee people. For Fujitsu laptop holders, private employees, there were 90 respondents and for self owned business respondents there were 65. Similarly, for Sony laptop holders, 75 consisted of self owned business people and 70 respondents were private employees.

When considering income per month, it was found that 121 (31.5% of total respondents) respondents have an income of above 50,000 baht per month. This is true when considering Fujitsu and Sony laptop owners individually. The values are 60 and 61 respondents for Fujitsu and Sony respectively.

6.1.2 Summary of hypothesis testing

Table 6.2 shows summarized findings of the hypothesis testing. For this study, independent sample t Test was used to test the hypothesis.

Table 6.2 Hypothesis result

Hypothesis	Significance	Result
H ₀₁ – There is no difference in consumers' operating perception in terms of performance of Fujitsu and Sony brands.	0.000	Rejected
H ₀₂ – There is no difference in consumers' perception in terms of social image of Fujitsu and Sony brands.	0.000	Rejected
H ₀₃ - There is no difference in consumers' perception in terms of value of Fujitsu and Sony brands.	0.000	Rejected
H ₀₄ - There is no difference in consumers' perception in terms of trustworthiness of Fujitsu and Sony brands.	0.000	Rejected
H ₀₅ - There is no difference in consumers' perception in terms of attachment of Fujitsu and Sony brands.	0.010	Rejected
H ₀₆ - There is no difference in consumers' perception in terms of brand equity of Fujitsu and Sony brands.	0.000	Rejected

The results of hypothesis showed that, all the null hypothesis are rejected. The two tailed significance were 0.000, 0.000, 0.000, 0.000, 0.010, and 0.000 for six hypotheses respectively. This values are less than 0.05, hence alternative hypothesis failed to reject.

6.2 Conclusion

The objective of this study is to understand and to compare the difference in consumer perception on each brand equity dimensions of Fujitsu and Sony which is defined by operating performance, social image, value, trustworthiness and attachment. Also to understand the difference in consumers' perception of brand equity of Fujitsu and Sony brands. Results showed that there is a difference in consumer perception between Fujitsu and Sony laptop brands. Marketing managers of Fujitsu and Sony can put more emphasis on marketing communication through different approaches because brand equity implies a high level of awareness, which should increase the effectiveness of marketing communication (Aaker, 1991).

Operating Performance

It refers to the totality of the physical job. It is the consumers' judgment about a brand's fault free and long lasting physical operation and flawlessness in a product's physical operation. This study showed that there is a difference in consumers' perception in terms of operating performance of Fujitsu and Sony brands. It also showed that mean of Sony users is higher than the Fujitsu laptop owners. A similar result was obtained from the study by Lassar et al. (1995), in which the television monitors of Sony, Goldstar and RCA were compared. Sony was rated highest and RCA was next. The reason brand name is used by consumers to infer quality of a familiar product is because brand name is built based on its association with the quality product carrying that name, a value or utility; that is, belief about quality (operating performance) have gone into that brand name's value or equity (Brucks and Zeinthal, 1991). Mean value with low standard deviation of Sony respondents showed better perception when compared to Fujitsu

respondents. Low standard deviation indicates that respondents answered with less deviation from the mean value. This shows that Sony's operating performance is perceived to be higher when compared to Fujitsu's operating performance. The significance of delivering reliable quality in order to accomplish a branded promise cannot be underestimated. Apparent quality provides a reason to buy, a point of segregation a prospect for premium pricing, channel interest and basis for brand extensions. The key to deliver quality are to categorize those quality magnitudes that are important to consumer and to communicate that message in reliable manner (Lassar, Mittal and Sharma, 1995).

Social Image

It is the consumer's perception of the esteem in which the consumer's social group holds the brand. Social image includes the attributions a consumer makes towards the brand. Social image is value adding because of the social reputation associated with owning or using a brand. The study showed that there is a difference in consumers' perception in terms of social image of Fujitsu and Sony brands. Consumers will prefer the brand if it expresses their (desired) character and identity, if an experience with it can tell a crisp and a precise story to the world about them. They want the encounter with the brand to define their identity and express it, to draw a complete picture of its character, personality and identity. The mean values from the study showed that Sony's social image was higher when compared to Fujitsu brands. It can imply that consumers perceived proud in using Sony and finds it fit with their personality when they own Sony Laptop rather than Fujitsu brand.

Value

According to the study, the result showed that, there is a difference in consumers' perception in terms of value of Fujitsu and Sony brands. It is 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. The consumers' choice of a brand depends on a perceived balance between the price of a product and all its utilities. The mean value between Fujitsu and Sony brands reflected that the perceived value for money's worth showed higher for Sony brands. This can be viewed Sony's pricing strategy. Wright (2004) stated that Sony's pricing strategy varies according to exchange rates, import taxes, freight charges and relative positioning of different products. But emphasize given to competitor and market situation ensuring products to be within a reasonable range. Similar research from Lassar et al. (1995) also concluded that if consumers evaluate a brand to perform well, consumers also expect the brand to have high level of value. The mean of the two brands for value dimension was higher for Sony laptop owners.

Trustworthiness

The study result showed that, there is a difference in consumers' perception in terms of trustworthiness of Fujitsu and Sony brands. Firms may do all the right things in planning its marketing strategy, segment the market, develop a position, establish a balanced marketing mix with the reasonable expectation that, it will succeed but more than these all it is important to build trust into firm's brand (Richman, 2001). The mean value of trustworthiness showed that Sony brand users had higher mean compared to Fujitsu brand users. Also standard deviation suggested that Sony respondents showed less

standard deviation than Fujitsu respondents which indicate scatter ness of the response. Lower the standard deviations better the meaning. This implies that consumers of Sony laptop brands have a more significant trust in the company and they perceived that the company pays attention to consumers' interest more than by Fujitsu people.

Attachment

The study tested positive for the alternative hypothesis explaining there is difference in consumers' perception in terms of attachment of Fujitsu and Sony brands. Attachment shows the relative strength of consumer's positive feeling toward the brand. The mean value suggested that attachment toward Sony brands was higher than the Fujitsu brand. Similar findings can be sighted from Lassar et al. (1995) from their study. Their study compared three television monitors namely Sony, RCA and Goldstar which showed Sony has rated highest. Also it is possible that Sony has different product category when compared to Fujitsu. Starting from mobile to many product categories, Sony has its impact which indirectly creates more attachment than Fujitsu, which has got a small product line.

Brand Equity

All the above factors are taken together to compare the customer based brand equity, namely operating performance, social image, value, trustworthiness, and attachment. It is the totality of the brand's perception by the customer, including the relative perceived quality of the products and services, customer attachment, satisfaction and overall esteem toward the brand. The results showed that there is a statistically significant difference in consumers' perception about brand equity between Fujitsu and

Sony brands. The mean value suggested that Sony respondents showed overall better rating for the brand equity than the Fujitsu respondents.

Altogether the study showed that there is a difference in consumer perception about brand equity of the two laptop brands. This also proved that each brand equity dimension showed statistically significant difference on consumer perception. The mean value of all the variables was rated high for Sony than Fujitsu with comparative same standard deviation.

6.3 Recommendation

It is recommended that firms measure the equity associated with their brands on a regular basis. Thus the brand equity evaluation will enable companies to evaluate their marketing programs. Also, if the brand equity is seen to suffer, further feed back can be obtained from consumers. This feed back will aid in identifying product performance problems, identifying advertising and positioning problems. Also it will provide feedback to the firm's employees on where improvements need to be made. The customer based brand equity scale is based on five underlying dimensions of brand equity; operating performance, social image, value, trustworthiness and commitment. One of the major implications in this study is that companies have to manage all the elements to enhance brand equity. The measurement of the brand equity may aid in the evaluation of the marketing mix elements of a brand. It showed that Sony has better perception in terms of brand equity when compared to Fujitsu brand. Therefore, managers need to understand in customer level because ultimately consumers are pivotal role in deciding companies' success. It also showed that mean values of each dimension of the brand equity of the Sony brand is higher than Fujitsu brand. From the study it is very evident that Sony has a

better image and value in consumers' mind when compared to Fujitsu brand. Therefore, Fujitsu people can keep this as a bench mark for their further marketing communication to deliver the promise. To remain in a competitive world it is very important to understand the competitors' strength. From this study Fujitsu management can understand from the customer point of view about their about their product and brand. It is very helpful for the management to establish new advertising movement, pricing strategy or a new repositioning strategy. Even though Sony is rated high, it needs to realize that to remain in this competitive world one need to maintain the status and improve if possible.

6.4 Future Research

This research can be used for the same context with similar objectives over a longer duration and overcoming the limitation that, this research currently has. The result may differ from context to context. Furthermore, as the study has spatial boundary and time limitations which can be over come in further research. This research used simple scale to measure customer based brand equity. A broader scale can also be adopted in future research explaining better meaning of brand equity. This study considered only two brands, but in further research this can be stretched into more brands.

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By Charles Wright, February 12, 2004.



APPENDIX A

QUESTIONNAIRE



Questionnaire

Dear Sir/Madam

This academic research is conducted as partial requirement for the completion of master degree in Management Business Administration, in Assumption University. In following questionnaire researcher would like you to evaluate each statement. It is important to the researcher that you to answer all the questions as accurately as possible.

Instructions to fill the questionnaire,

Please put tick mark (✓) on the box which best fits your answer.

Your response varies from 1 to 7, indicating 1 = Strongly disagree, 2 = Disagree, 3 = Moderately Disagree, 4 = Neutral, 5 = Moderately Agree, 6 = Agree, 7 = Strongly Agree.

Which brands of laptop do you own? (Choose only one)

Fujitsu Life book Laptop ☐ (Please proceed to answer from Part I)

Sony Vaio Laptop ☐ (Please proceed to answer from Part I)

Others ☐ (Please end Questionnaire)

Part I

	Operating Performance	1	2	3	4	5	6	7
1	From this brand of laptop, I could find superior level of functioning.							
2	During use, this brand of laptop is highly unlikely to be defective.							
3	This brand of laptop is made so as to work trouble free.							
4	This brand works very well.							

Your response varies from 1 to 7, indicating 1 = Strongly disagree, 2 = Disagree,

3 = Moderately Disagree, 4 = Neutral, 5 = Moderately Agree, 6 = Agree,

7 = Strongly Agree.

	Social Image	1	2	3	4	5	6	7
5	This brand of laptop fits my personality.							
6	I would be proud to own a laptop of this brand.							
7	This brand of laptop was well regarded by my friends.							
8	In its status, this brand matches my life style.							

	Value	1	2	3	4	5	6	7
9	Considering what I paid for this brand of laptop, the utility I have received much more than my money's worth.							
10	The brand has given me the maximum quality for the money I spent.							
11	I consider this brand of laptop to be a bargain because of the benefits I received.							

Your response varies from 1 to 7, indicating 1 = Strongly disagree, 2 = Disagree, 3 = Moderately Disagree, 4 = Neutral, 5 = Moderately Agree, 6 = Agree, 7 = Strongly Agree.

	Trustworthiness	1	2	3	4	5	6	7
12	I consider the company which stand behind this laptop brand to be very trustworthy.							
13	With regard to consumer interests, this company seems to be very caring.							
14	I believe that this company does not take advantage of consumers.							

	Attachment	1	2	3	4	5	6	7
15	After using this brand, I have grown to become fond of it.							
16	For this brand of laptop, I have positive personal feelings.							
17	With time, I have developed a good feeling toward this brand of laptop.							

Part II

General Demographic Information

18. Gender Male ☐ Female ☐

19. Age Years 14-19 ☐ 20-29 ☐ 30-39 ☐
 40-49 ☐ 50-59 ☐ 60+ ☐

20. Nationality Thai ☐ Non Thai ☐ Please specify.....

21. Education Higher Secondary ☐ Under Graduate ☐
 Diploma ☐ Graduate ☐
 Master and Above ☐ Others ☐

22. Occupation Status Student ☐ Private Employee ☐
 Public Employee ☐ Self owned business ☐
 Others.....

23. Income/month in Baht Below 10,000 ☐ 10,000 to 19,999 ☐
 20,000 to 29,999 ☐ 30,000 to 39,999 ☐
 40,000 to 49,999 ☐ 50,000 and above ☐

Thank You



Fujitsu Respondents GENDER

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	130	67.7	67.7	67.7
	female	62	32.3	32.3	100.0
	Total	192	100.0	100.0	

Sony Respondents GENDER

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	135	70.3	70.3	70.3
	female	57	29.7	29.7	100.0
	Total	192	100.0	100.0	

Fujitsu Respondents AGE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	14-19	8	4.2	4.2	4.2
	20-29	75	39.1	39.1	43.2
	30-39	70	36.5	36.5	79.7
	40-49	39	20.3	20.3	100.0
	Total	192	100.0	100.0	

Sony Respondents AGE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	14-19	9	4.7	4.7	4.7
	20-29	70	36.5	36.5	41.1
	30-39	73	38.0	38.0	79.2
	40-49	40	20.8	20.8	100.0
	Total	192	100.0	100.0	

Fujitsu Respondents NATIONALITY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	thai	164	85.4	85.4	85.4
	non-thai	28	14.6	14.6	100.0
	Total	192	100.0	100.0	

Sony Respondents NATIONALITY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Thai	169	88.0	88.0	88.0
	non-Thai	23	12.0	12.0	100.0
	Total	192	100.0	100.0	

Fujitsu Respondents EDUCATION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	under graduate	14	7.3	7.3	7.3
	diploma	17	8.9	8.9	16.1
	graduate	126	65.6	65.6	81.8
	master and above	35	18.2	18.2	100.0
	Total	192	100.0	100.0	

Sony Respondents EDUCATION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	under graduate	15	7.8	7.8	7.8
	diploma	11	5.7	5.7	13.5
	graduate	119	62.0	62.0	75.5
	master and above	47	24.5	24.5	100.0
	Total	192	100.0	100.0	

Fujitsu Respondents OCCUPATION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	student	28	14.6	14.6	14.6
	private employee	90	46.9	46.9	61.5
	public employee	9	4.7	4.7	66.1
	self owned business	65	33.9	33.9	100.0
	Total	192	100.0	100.0	

Sony Respondents OCCUPATION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	student	33	17.2	17.2	17.2
	private employee	72	37.5	37.5	54.7
	public employee	12	6.3	6.3	60.9
	self owned business	75	39.1	39.1	100.0
	Total	192	100.0	100.0	

Fujitsu Respondents INCOME

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<10000	5	2.6	2.6	2.6
	10000-19999	23	12.0	12.0	14.6
	20000-29999	30	15.6	15.6	30.2
	30000-39999	45	23.4	23.4	53.6
	40000-49999	29	15.1	15.1	68.8
	=>50000	60	31.3	31.3	100.0
	Total	192	100.0	100.0	

Sony Respondents INCOME

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<10000	5	2.6	2.6	2.6
	10000-19999	17	8.9	8.9	11.5
	20000-29999	33	17.2	17.2	28.6
	30000-39999	42	21.9	21.9	50.5
	40000-49999	34	17.7	17.7	68.2
	=>50000	61	31.8	31.8	100.0
	Total	192	100.0	100.0	

Group Statistics

	which brand of laptop do you own	N	Mean	Std. Deviation	Std. Error Mean
OPEPER	fujitsu	192	4.6927	1.37335	.09911
	sony	192	5.3359	1.19243	.08606

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
OPEPER	Equal variances assumed	2.338	.127	-4.900	382	.000	-.6432	.13126	-.90131	-.38515
	Equal variances not assumed			-4.900	374.623	.000	-.6432	.13126	-.90133	-.38513

Group Statistics

	which brand of laptop do you own	N	Mean	Std. Deviation	Std. Error Mean
SOIMAGE	fujitsu	192	4.7839	1.13264	.08174
	sony	192	5.3555	1.19648	.08635

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
SOIMAGE	Equal variances assumed	.004	.952	-4.807	382	.000	-.5716	.11890	-.80540	-.33783
	Equal variances not assumed			-4.807	380.857	.000	-.5716	.11890	-.80540	-.33783

Group Statistics

	which brand of laptop do you own	N	Mean	Std. Deviation	Std. Error Mean
VALUE	fujitsu	192	4.4948	1.10737	.07992
	sony	192	5.4531	1.11163	.08022

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
VALUE	Equal variances assumed	.538	.464	-8.463	382	.000	-.9583	.11324	-1.18098	-.73569
	Equal variances not assumed			-8.463	381.994	.000	-.9583	.11324	-1.18098	-.73569

Group Statistics

	which brand of laptop do you own	N	Mean	Std. Deviation	Std. Error Mean
TRUST	fujitsu	192	4.6979	1.26994	.09165
	sony	192	5.1580	1.11780	.08067

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
TRUST	Equal variances assumed	5.204	.023	-3.768	382	.000	-.4601	.12210	-.70013	-.22000
	Equal variances not assumed			-3.768	375.945	.000	-.4601	.12210	-.70015	-.21999

Group Statistics

	which brand of laptop do you own	N	Mean	Std. Deviation	Std. Error Mean
ATTACHME	fujitsu	192	4.8385	1.17269	.08463
	sony	192	5.1719	1.35410	.09772

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
ATTACHME	Equal variances assumed	4.761	.030	-2.578	382	.010	-.3333	.12928	-.58752	-.07915
	Equal variances not assumed			-2.578	374.360	.010	-.3333	.12928	-.58753	-.07913

Group Statistics

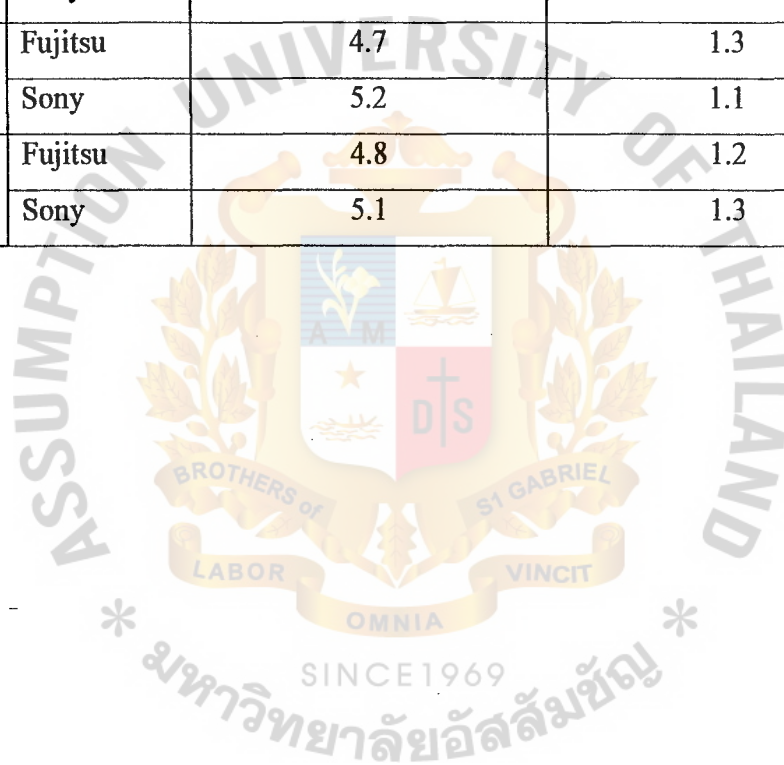
	which brand of laptop do you own	N	Mean	Std. Deviation	Std. Error Mean
BE	fujitsu	192	4.7056	1.03181	.07446
	sony	192	5.3009	1.01305	.07311

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
BE	Equal variances assumed	.123	.726	-5.704	382	.000	-.5953	.10436	-.80047	-.39010
	Equal variances not assumed			-5.704	381.871	.000	-.5953	.10436	-.80047	-.39010

Mean and Standard Deviation Values

Brand Equity Dimension		Mean	Standard Deviation
Operating Performance	Fujitsu	4.7	1.4
	Sony	5.3	1.2
Social Image	Fujitsu	4.8	1.1
	Sony	5.4	1.2
Value	Fujitsu	4.5	1.1
	Sony	5.5	1.1
Trust	Fujitsu	4.7	1.3
	Sony	5.2	1.1
Attachment	Fujitsu	4.8	1.2
	Sony	5.1	1.3



Reliability

***** Method 2 (covariance matrix) will be used for this analysis *****



RELIABILITY ANALYSIS - SCALE (ALPHA)

N of Cases = 40.0

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	4.6875	4.4750	4.9250	.4500	1.1006	.0490

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
PER1	14.2750	9.0763	.4059	.3913	.7604
PER2	13.8250	9.7891	.5306	.4778	.7231
PER3	14.2250	6.8455	.6602	.6591	.6206
PER4	13.9250	5.7635	.6797	.6963	.6143

Reliability Coefficients 4 items

Alpha = .7494 Standardized item alpha = .7609



Reliability

***** Method 2 (covariance matrix) will be used for this analysis *****



RELIABILITY ANALYSIS - SCALE (ALPHA)

N of Cases = 40.0

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	4.8625	4.7000	5.0750	.3750	1.0798	.0294

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
SI1	14.7500	10.4487	.4926	.2690	.8262
SI2	14.7000	8.0103	.6335	.4153	.7704
SI3	14.5250	7.4353	.6762	.6170	.7516
SI4	14.3750	8.6506	.7919	.6795	.7056

Reliability Coefficients 4 items

Alpha = .8144 Standardized item alpha = .8212



Reliability

***** Method 2 (covariance matrix) will be used for this analysis *****



RELIABILITY ANALYSIS - SCALE (ALPHA)

N of Cases = 40.0

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	4.6667	4.3250	4.9750	.6500	1.1503	.1065

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
VAL1	9.0250	2.7942	.5907	.5198	.4368
VAL2	9.3000	4.5744	.2446	.0865	.8369
VAL3	9.6750	2.4814	.6888	.5473	.2769

Reliability Coefficients 3 items

Alpha = .6765 Standardized item alpha = .6580



Reliability

***** Method 2 (covariance matrix) will be used for this analysis *****



RELIABILITY ANALYSIS - SCALE (ALPHA)

N of Cases = 40.0

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	4.6417	4.2750	4.9250	.6500	1.1520	.1108

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
TRU1	9.6500	10.6436	.8382	.8145	.8593
TRU2	9.0000	7.9487	.9000	.8578	.7874
TRU3	9.2000	9.6513	.7316	.5711	.9333

Reliability Coefficients 3 items

Alpha = .9053 Standardized item alpha = .9107



Reliability

***** Method 2 (covariance matrix) will be used for this analysis *****



RELIABILITY ANALYSIS - SCALE (ALPHA)

N of Cases = 40.0

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	4.9333	4.7250	5.1000	.3750	1.0794	.0365

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
ATCH1	9.7000	5.4974	.8891	.8002	.8158
ATCH2	9.8250	9.3276	.7629	.5951	.9028
ATCH3	10.0750	8.1737	.8425	.7454	.8294

Reliability Coefficients 3 items

Alpha = .8991 Standardized item alpha = .9116



Reliability

***** Method 2 (covariance matrix) will be used for this analysis *****



RELIABILITY ANALYSIS - SCALE (ALPHA)

*** Warning *** Determinant of matrix is zero

Statistics based on inverse matrix for scale ALPHA
are meaningless and printed as .

N of Cases = 40.0

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	4.7603	4.2750	5.1000	.8250	1.1930	.0602

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
PER1	76.4500	246.0487	.5261	.	.9445
PER2	76.0000	251.4872	.5395	.	.9446
PER3	76.4000	232.4513	.7952	.	.9394
PER4	76.1000	228.6051	.7559	.	.9401
SI1	76.2250	249.1532	.4938	.	.9449
SI2	76.1750	231.2250	.8046	.	.9392
SI3	76.0000	235.3846	.6554	.	.9423
SI4	75.8500	241.0026	.7276	.	.9413
VAL1	75.9500	236.2026	.7865	.	.9399
VAL2	76.2250	257.5635	.2309	.	.9485
VAL3	76.6000	238.7590	.6964	.	.9415
TRU1	76.6500	233.8744	.6869	.	.9416
TRU2	76.0000	216.9231	.8546	.	.9380
TRU3	76.2000	219.4462	.8532	.	.9379
ATCH1	75.8250	218.5583	.8027	.	.9396
ATCH2	75.9500	240.6128	.6154	.	.9429
ATCH3	76.2000	229.2923	.8397	.	.9384

Reliability Coefficients 17 items

Alpha = .9448 Standardized item alpha = .9432

