Customer Based Brand Equity and Intangibles
- The case of the Swedish mobile network operators

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Abstract

Problematization: Studies indicate that there is a lack of strong brands among the Swedish mobile network operators. Problems of retaining customers are common among the big operators. Few studies on brand equity for intangible products have been done.

Purpose: The purpose of this paper is to investigate which factors influence brand equity in the Swedish service sector of mobile network operators.

Theory: This paper is limited to one aspect of brand equity, namely customer based brand equity. Common constructs of customer based brand equity are: brand awareness, brand associations, brand loyalty, and perceived quality.

Methodology: The data was collected with self-administered delivery and collection questionnaires, which were distributed among university students.

Data: 400 questionnaires were handed out and 363 responses were valid.

Results and Conclusion: This study indicates the importance of brand associations, brand loyalty, and brand trust for establishing customer based brand equity among the Swedish mobile network operators.

Keywords: Customer based brand equity, Service sector, Swedish mobile network operators, Brand associations, Brand loyalty, Brand trust.
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Uppsala, 2012

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1. Introduction

In this part of the thesis, background information regarding the Swedish mobile network operators, an introduction to the field of brand equity, the purpose of the paper, and the research question are presented.

1.1 Mobile Network Operators in Sweden

Sweden ranks as one of the leading countries in technology services, such as broadband systems and wireless communications. For example, Sweden was the first country to introduce nationwide 3G coverage in 2004 to its mobile phone users (Euromonitor international, 2010) and in 2009, the country introduced the first functional 4G network in the world. In the Swedish telecom industry one can see a trend that users are moving from fixed telephone lines services towards mobile telephone services (Post- och telestyrelsen, 2011). In the year of 2009, 98 per cent of the Swedish household had at least one mobile phone subscription (Euromonitor international, 2010). It was also during this year the usage of mobile phone services surpassed the usage of fixed telephone lines (Post- och telestyrelsen, 2011). In 2009, 22.8 per cent of the total revenue generated in the Swedish telecom industry came from the mobile phone services (Euromonitor international, 2010).

Today, Sweden has four dominant mobile network operators: Telia, Tele2, Telenor and 3. The two other well known brands, Halebop and Comviq are owned by Telia and Tele2 respectively. Telia (including Halebop) is the biggest player with a 41 per cent market share while Tele2 (including Comviq) has a 31 per cent market share whereas Telenor and 3 have 16, and 9 per cent of the market respectively (Post- och telestyrelsen & TNS SIFO, 2010).

Since the actual network services provided by mobile network operators are very similar it has become hard for individuals to separate and distinguish the operators from each other. As a result operators are required to use their brand to attract the attention and business of the customers. Internationally, several mobile network operators with strong brands exist (Intangible Business, 2008), however, in the Swedish market there seems to be a lack of strong brands among the mobile network operators (Boom, 2008).

Post- och telestyrelsen & TNS SIFO (2010) explain in their report ‘Svenskarnas användning av telefoni & internet 2010’ that the customers of the three biggest players are frequently switching
operators; changing their operators back and forth amongst the three biggest players. According to Arnold (1992), one way of the most important aspects for retaining customers is to build strong brands. Thus, suggesting that it is of high importance, for the Swedish mobile network operators, to establish strong brands.

1.2 Brand Equity
A top priority for many firms today is building a strong brand. A strong brand has been shown to grant companies with several financial benefits such as, less vulnerability to marketing crises and competitive marketing actions, greater cooperation and support from intermediates, brand extension possibilities, greater customer loyalty, increased effectiveness of marketing communication, more favorable customer response to price increases, and thus larger profit margins (Keller, 2001).

A key indicator of the condition and strength of a brand is brand equity. The importance of managing and monitoring brand equity has been argued, by several scholars, to be of high importance when building a strong brand (Aaker, 1991; Aaker, 1992; Biel, 1992; Shocker et al., 1994; Pappu et al., 2005). Yoo et al. (2000, p. 208) even go as far to say that “Brand equity provides sustainable competitive advantages because it creates meaningful competitive barriers”.

There are disagreements, among the scholars in the field, regarding which perspective is the most suitable for studying brand equity, while some scholars favor financial techniques others focus on a customer oriented context of brand equity (Vázquez et al. 2002; Chieng & Goi, 2011). For the field of business management, customer based analysis have been argued to be the more successful approach (Vázquez et al. 2002).

Even though there seems to be some variance between the different approaches used by scholars, Chieng and Goi (2011) explain that nearly all of the scholars use some of the dimensions derived from Aaker’s (1991) model, which includes the following dimensions: brand loyalty, perceived quality, brand associations, brand awareness, and other brand proprietary assets. Various marketing strategies and activities can be used to achieve these dimensions of brand equity (Tong & Hawley, 2008).
It has been shown by Dawar and Parker (1994) that the attitudes and opinions, regarding different marketing activities, vary among consumers across the globe. This was further supported by Yoo and Donthu (2002) who noted differences between the US market and the Korean market regarding the effectiveness of different brand equity building activities.

In a literature review regarding customer based brand equity (CBBE) by Christodoulides and de Chernatony (2010), the authors indicate that most of the studies done in the field of CBBE are product oriented. Therefore, they call out for studies testing the measurements of CBBE for the service industry. The authors also explain that most of the studies done in the field have been performed in the US, therefore, they also call out for studies testing the measurements in other national contexts.

As, Simon and Sullivan (1993) proposed that the cost of creating brands is escalating, thus, the authors of this paper believe in order for the Swedish mobile network operators to be able to create strong brands, with high brand equity, thus, being able to grasp the numerous benefits which comes along with strong brands, it is important to understand how strong brands can be created in this industry. This in turn require an understanding of which factors play the most significant roles in influencing CBBE.

1.3 Purpose
The purpose of this paper is to investigate which factors influence brand equity in the Swedish service sector of mobile network operators.

1.4 Research Question

Which factors influence brand equity for Swedish mobile network operators?
2. Literature Review

In this part of the thesis, brand equity, measurements of customer based brand equity, different dimensions of customer based brand equity used by scholars, and branding in the service sector are discussed. In the end of the chapter a model illustrating the factors influencing customer based brand equity is presented.

2.1 Brand Equity

One of the key marketing assets is brand equity (Davis, 2000; Ambler, 2003) and according to Falkenberg (1996), a key objective for a company is to grow its brand equity, thus, planting positive associations and feelings, about the company or the product, in the mind of the intended consumers. This argument is further strengthened by Keller (2001) who says that a top priority for many companies is to build strong brands since a stronger brand has shown to grant a company with several financial benefits. Several other scholars have also argued that it is of high importance for a company to manage and monitor its brands (Aaker, 1991; Aaker, 1992; Biel, 1992; Shocker et al., 1994; Pappu et al., 2005).

There are several definitions for brand equity. One of the widely accepted and general definition of brand equity is provided by Aaker (1991). He defines brand equity as “a set of brand assets and liabilities linked to a brand, its name and symbol, that add to or subtract from the value provided by a product or service to a firm and/or to that firm’s customers” (p.15).

2.2 Customer and Financial Perspective of Brand Equity

There is a lot of literature about brand equity all with their differences and similarities. Even though there are a lot of differences between different studies and authors in the field of brand equity most of the literature can be classified into two major perspectives. The first one being the financial perspective and the other being the customer based perspective (also often called consumer based). The financial perspective which is also often referred to as firm based brand equity (FBBE) focuses on the financial value the brand equity creates for the business. One way of determining the financial value of the brand, and perhaps also the simplest way, is to look at the value stated in the balance sheet when the brand or the company is sold. However, it is the consumer’s response to the brand name which determines the financial value of the brand equity. Thus, the second perspective, consumer based perspective, is based on customers’ perception.
such as associations and beliefs connected to the brand (Christodoulides & de Chernatony, 2010).

According to Vázquez et al. (2002) in their paper 'Consumer-based brand equity: Development and Validation of a Measurement Instrument' there have been far going debates of which perspective is the most suitable for studying brand equity. Early research in the field focused on financial techniques to measure brand equity, while the later researchers have focused on a more customer oriented context (Vázquez et al. 2002; Chieng & Goi, 2011). Vázquez and his colleagues continues to explain that for the field of business management the consumer based analysis is the most important, in order to identify the sources for brand equity (Vázquez et al. 2002). Today most scholars agree with Vázquez and his colleagues, that the customer based brand equity is the preferred way of evaluating the value of a brand (Winters, 1991; Chaudhuri, 1995; Chieng & Goi, 2011). Thus, this paper will focus on customer based perspective.

### 2.2.1 Customer Based Brand Equity

In 1991, Aaker conceptualized five dimensions of brand equity. Those are brand awareness, brand associations, perceived quality, brand loyalty, and other proprietary brand assets (which include patents, channel relationships and trademarks). Proprietary brand assets are not directly associated with consumer perceptions whereas consumer perceptions and reactions to the brand are represented by the four remaining dimension of the brand equity (Christodoulides & de Chernatony, 2010). Keller (1993) is one of the scholars who have looked into the customer based brand equity (CBBE) and has left the financial dimensions out of consideration. He defines CBBE as “the differential effect of brand knowledge on consumer response to the marketing of the brand” (p.2). This means that CBBE of the product is the difference between the consumers reaction to the elements of the marketing mix for a specific branded product in comparison to an identical product which is un-branded (Keller, 1993). In contrast to Aaker (1991), Keller (1993) only highlights two dimensions of customer based brand equity; brand awareness and brand image. These are viewed as the two separate construct which together constitutes brand knowledge.

According to Keller (1993, p.3) “brand knowledge is conceptualized as consisting of a brand node in memory to which a variety of associations are linked”. It is important to understand the
content and structure of brand knowledge because this is something that influences what comes to mind when thinking about a brand.

2.3 Measurements of CBBE
Even though many authors have made their own conceptualization of customer based brand equity, not all of them have operationalized a scale for its measurement. However, some scholars have operationalized the measurement of CBBE but have used complicated statistical procedures which make it difficult to comprehend (Christodoulides & de Chernatony, 2010).

Scholars have used two different approaches for measuring CBBE. Those are the direct and the indirect approach (ibid.).

2.3.1 Direct Approach: Under the direct approach the preferences of the customers are in focus and the phenomenon is measured directly which means that under this approach scholars are trying to make a clear distinction between the value of the product and the value of the brand (Christodoulides & de Chernatony, 2010). According to Keller (1993 p.12) “the “direct” approach attempts to measure customer based brand equity more directly by assessing the impact of brand knowledge on consumer response to different elements of marketing program”. The limitation of this approach is that it does not explain the source of the brand equity and normally includes complex statistical models, therefore, it might be argued that this kind of approach would be of limited value for practitioners (Christodoulides & de Chernatony, 2010). Further, Tong and Hawley (2009) suggest that in the direct approach one is merely looking at the performance of the brand in the marketplace and does not take in account how the brand should be managed.

2.3.2 Indirect Approach: Under this approach, instead of measuring actual customer preferences, scholars try to identify the actual sources of CBBE (Keller, 1993). Since it is the differential customer response that creates brand knowledge, Keller (1993) suggests that the indirect approach is more useful in indentifying what aspects are actually responsible for creating CBBE. In simple words what is actually measured is the consumers’ perception of overall brand equity in relation to their perceptions of the dimensions of brand equity (Tong & Hawley, 2009).
Different scholars have used different dimensions when trying to identify the CBBE under the indirect approach and still there is no consensus on which dimensions should be used for identifying CBBE (Keller, 1993; Vazquez et al., 2002; Keller, 2003).

A short review of some scholars and the different dimensions they have used to describe CBBE are presented below.

2.4 Different Dimensions Used by Scholars
Aaker (1991) is one of the earliest scholars in the field of brand equity. As mentioned earlier, he came up with a conceptual framework consisting of five dimensions which are brand awareness, brand associations, perceived quality, brand loyalty, and other proprietary brand assets. However, it should be mentioned once again that the fifth dimension is not considered by other scholar to be associated with customer perceptions (Christodoulides & de Chernatony, 2010).

Some other conceptual papers which were written in the following years have used fewer dimensions, like Keller (1993), who looked merely into measures of brand knowledge which included brand awareness and brand image. What Keller (1993) refers to as brand image is similar to what Aaker (1991) describes as brand associations. Berry (2000) conceptualizes a model explaining that brand awareness and brand meaning are the two dimensions that build CBBE.

In the years following Berry’s (2000) article, several scholars empirically tested several different dimensions including the ones which had been proposed earlier by Aaker, Keller, and Berry as well as some newly conceptualized dimensions. Yoo and Donthu (2001) empirically tested Aaker’s four dimensions on Korean and American customers for three product categories (color television, athletic shoes and film for cameras). Their results show that the four dimensions are reliable and valid across both cultures and all the product categories that were tested. Vazques et al. (2002) came up with four new dimensions which were entirely different from formerly conceptualized dimensions. The dimensions conceptualized by Vazques are product functional utility, product symbolic utility, brand name functional utility, and brand name symbolic utility, which were empirically tested on a Spanish population with the product category athletic shoes. The results show “reasonable degree of validity” (Vazques et al., 2002 p.41) for all four dimensions. Washburn and Plank (2002), similar to Yoo & Donthu (2001), empirically tested the
four dimensions: brand awareness, brand associations, perceived quality and brand loyalty in the context of co-branded products. Washburn and Plank (2002) also found support for all four dimensions, however, they concluded that further research is necessary for unconditional acceptance of the dimensions. De Chernatony et al. (2004) used brand loyalty as a dimension but also included two new dimensions: satisfaction and reputation. These three dimensions were empirically tested on the financial services and the result show that all three dimensions are valid. However, it should be mentioned that their study used another definition of brand equity proposed by Marketing Science Institute which does not solely focus on the perceived value of the consumers but also includes parent corporation and channel members. Pappu et al. (2005) empirically tested the four dimensions conceptualized by Aaker on two product categories, cars and televisions, in Australia. The results of Pappu et al. also provide evidence for the validity of the four dimensions.

Christodoulides et al. (2006) took the brand equity studies into the unexplored area of E-commerce. Their results show that for what they call ‘online retail/service brand equity’, the dimensions are different. They identified emotional connection, online experience, fulfillment, trust, and responsive service nature as dimensions of brand equity through interviews conducted with experts of E-commerce. All the dimensions were later tested through online surveys and were proven to be valid. Koçak et al. (2007) further tested the different dimension proposed by Vazques et al (2002) in different cultural context. They tested the dimensions in Turkey and they found them to be applicable, although, the survey questions needed minor adjustments in order to fit the Turkish context. Build et al. (2008) did a cross-national test of the four dimensions derived from Aaker but they divided ‘brand associations’ into three sub dimensions namely perceived value, brand personality, and organizational associations. The results validated the importance of all the dimensions in both countries in which they were empirically tested.

Among the above mentioned studies there has been an emphasis on understanding the dimensions of CBBE of products and scholars are requesting studies on CBBE for service industry (van Riel et al., 2001; Build et al. 2008; Christodoulides & de Chernatony, 2010).

In response to this lack of studies, in the recent years there have been few studies conducted on the service sector. Kayaman and Arasli (2007) studied the hotel industry in North Cyprus and tested whether the four dimensions, derived from Aaker, are valid or not for the service industry.
Their study found support for three of the dimensions: brand associations, brand loyalty, and perceived quality, however, there was no significance for the dimension brand awareness in their study. Pinar et al. (2011) did a study to test if CBBE of banks differs based on ownership structure in which they used Aaker’s four dimensions. In this study only two of the dimensions were found to be valid namely brand loyalty and perceived quality. Hsu et al. (2012) studied CBBE in the Chinese upscale hotel industry. They tested the four dimensions derived from Aaker and two additional dimensions. The additional dimensions proposed by them were management trust and brand reliability where management trust is the trust of the customer towards the individual personas of the hotel managers whereas brand reliability looked into the trust that the customer has for the service of the brand, e.g. “you know what to expect…” (Hsu et al., 2012 p.85). The two additional dimensions as well as the four ‘traditional dimensions’ were all found to be valid.

In order to give a simplified overview of the various dimensions proposed by different scholars, the authors of this paper composed a table summarizing the above discussion. This table can be found below.

<table>
<thead>
<tr>
<th>Dimensions of Brand Equity</th>
<th>Scholars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand awareness</td>
<td>Aaker, Keller, Berry, Yoo &amp; Donthu, Washburn &amp; Plank, Pappu et al., Build et al., Hsu et al.</td>
</tr>
<tr>
<td>Brand Association</td>
<td>Aaker, Keller, Yoo &amp; Donthu, Washburn &amp; Plank, Pappu et al., Build et al., Kayaman &amp; Arasli, Hsu et al.</td>
</tr>
<tr>
<td>Brand Loyalty</td>
<td>Aaker, Yoo &amp; Donthu, Washburn &amp; Plank, de Chernatony et al., Pappu et al., Build et al., Kayaman &amp; Arasli, Pinar et al., Hsu et al.</td>
</tr>
<tr>
<td>Perceived quality</td>
<td>Aaker, Yoo &amp; Donthu, Washburn &amp; Plank, , Pappu et al., Build et al., Kayaman &amp; Arasli, Pinar et al., Hsu et al.</td>
</tr>
<tr>
<td>Product functional utility</td>
<td>Vazques et al., Koçak et al.</td>
</tr>
<tr>
<td>Product symbol utility</td>
<td>Vazques et al., Koçak et al.</td>
</tr>
<tr>
<td>Brand name functional utility</td>
<td>Vazques et al., Koçak et al.</td>
</tr>
<tr>
<td>Trust / Management trust</td>
<td>Christodoulides et al., Hsu et al.</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>de Chernatony et al.</td>
</tr>
<tr>
<td>Reputation</td>
<td>de Chernatony et al.</td>
</tr>
<tr>
<td>Emotional connection</td>
<td>Christodoulides et al.</td>
</tr>
<tr>
<td>Online experience</td>
<td>Christodoulides et al.</td>
</tr>
<tr>
<td>Responsive service nature</td>
<td>Christodoulides et al.</td>
</tr>
<tr>
<td>Fulfillment</td>
<td>Christodoulides et al.</td>
</tr>
<tr>
<td>Brand reliability</td>
<td>Hsu et al.</td>
</tr>
<tr>
<td>Brand meaning</td>
<td>Berry</td>
</tr>
</tbody>
</table>

Table 1 - Summary of dimensions used by different scholars
The question of which dimensions constitute CBBE does not seem to have a clear answer since previous authors have used several different combinations of dimensions (see Table 1). Several scholars have also acknowledged the debate on the lack of consensus on universal measures of CBBE (Barwise 1993; Chaudhuri 1995; Feldwick 1996; Ambler & Styles 1997). However, according to the discussion and the table above, one can see that the four dimensions originally conceptualized by Aaker, brand associations, brand awareness, perceived quality, and brand loyalty, seem to be the dimensions which have been most frequently used by the scholars. This goes in line with the findings of Christodoulides and de Chernatony (2010) as well as Chieng and Goi (2011), who also found that Aaker’s dimensions are the mostly used dimensions among the scholars. Therefore, the authors of this paper propose that the four dimensions conceptualized by Aaker should be included in this study. However, since some studies have shown that various other dimensions could be included, the authors of this paper argue that CBBE does not only consist of brand awareness, brand associations, perceived quality and brand loyalty instead CBBE might be more complex. Still these dimensions should be seen as constructs which influence CBBE.

This argumentation, that the dimensions proposed by Aaker (1991) have influence on CBBE is also supported by several scholars. Faircloth et al. (2001 p.69) found a “…positive direct influence of brand image on brand equity”. As described before brand image according to Keller (1993) is similar to what Aaker (1991) describes as brand associations, thus, brand associations have an influence on brand equity. Brand associations having an influence on CBBE was also supported by Yasin et al. (2007), further, the authors also found that brand awareness has an influence on CBBE. The influence that brand awareness has on brand equity was also corroborated by Kim et al. (2008 p.81) who found that brand awareness “…significantly influenced brand equity positively…”. Moreover, perceived quality was shown to have influence on CBBE by Morrison and Eastburn (2006). Finally, CBBE has been shown to be influenced by brand loyalty by Yasin et al. (2007).

Therefore, in the following sections the concepts of brand associations, brand awareness, perceived quality, and brand loyalty will be discussed in more detail.

2.4.1 Brand Awareness
Aaker (1991, p. 61) defines brand awareness as “the ability for a buyer to recognize or recall that a brand is a member of a certain product category”, whereas, according to Keller (2003, p.76)
brand awareness is “the customers’ ability to recall and recognize the brand as reflected by their ability to identify the brand under different conditions and to link the brand name, logo, symbol, and so forth to certain associations in memory”. There are several layers of brand awareness. The layers range from brand dominance, where the brand in question is the only brand recalled by the customer, down to brand recognition, where the customer merely recognizes the brand as one of several brands (Pappu et al., 2005). Keller (1993) also acknowledged that there are two sub dimensions within brand awareness: brand recognition and brand recall where brand recognition is the ability to merely be able to recognize a particular brand among several others. While brand recall is a higher level of brand awareness where the consumer thinks of a certain brand when a product category is mentioned (Keller, 1993). Brand recognition plays an important role in CBBE because it helps the customer to make decision regarding what brand to buy at the point of purchase (ibid.).

2.4.2 Brand Associations
Aaker (1991, p 109) defines brand associations as “anything linked in memory to a brand” and continues to explain that several associations put together creates a brand image. The more associations a customer has to a brand, the stronger the link between the customer and the brand (Aaker & Keller, 1990; Aaker, 1991; Keller, 1993). The associations a consumer has to a brand gives the brand its meaning for that consumer (Keller, 1993). According to Keller (1993), brand associations can be divided into three categories: attributes, benefits and attitudes. Attributes are the features which are descriptive in nature and gives the product or service its characteristics. In other words attributes define what the product or service stands for in the mind of a consumer. Benefits are the utilities that the customer believes that he will receive from the attributes of the product or service. Finally the “overall valuation of a brand” (Keller, 1993 p.4) is defined as brand attitude (ibid.).

2.4.3 Perceived Quality
A customer’s perception of a product or service superiority or overall quality is how Aaker (1991) describes perceived quality. It does not say anything about the actual or objective quality but it merely indicates how the quality of the product or service is perceived by the customer. It is described as being intangible in nature and based on an overall feeling about the brand. High perceived quality can be useful for a brand in several ways. It can be, a platform for brand extensions, a reason for customer to pay a premium price, a catalyst to increase the interest of
channel members for the product or service, a way to differentiate a product or service, and finally it can also provide the customer with a reason to buy the product or service (Aaker, 1991). Further, Kayaman and Arasli (2007) say that if the perceived quality of a product or service is high then the customer is more likely to become loyal to that brand.

2.4.4 Brand Loyalty
Aaker (1991, p. 39) defines brand loyalty as “the attachment that a customer has to a brand”. If properly managed and exploited, the existing customers who are loyal to the brand can provide value in several ways, thus, being a strategic asset for the brand. It can reduce marketing cost because retaining loyal customers do not require as much marketing activities as compared to attracting new customers. Brand loyalty can lead to attracting new customers because a loyal and satisfied customer base can provide assurance to non existing customers and can reduce the apprehension of risk among potential new customers, thus, providing them with a feeling that the product or service is a safe choice. Brand loyalty can further provide the company with trade leverages in the sense that the intermediate supplier of the product or service can also become loyal due to the belief that the brand has loyal customers who will always buy the product or services (Aaker, 1991). Further, Bowen and Shoemaker (1998) have argued that loyal customers are likely to make more frequent purchases than the customers who are not loyal.

As mentioned earlier, most of the studies in the field of CBBE have been product oriented (Christodoulides & de Chernatony, 2010). However, this study is not aimed on products, instead it is aimed toward the service industry. Therefore, in the next section the authors of this paper will describe some important aspects of branding in the service sector.

2.5 Branding in the Service Sector
According to Berry (2000), a big difference between products and services is that in product based industry, product is the primary brand, whereas in the service industry, the primary brand is the company. Products or tangible goods have an advantage when it comes to branding compared to services or intangible products. For the tangible products, potential customers are able to evaluate them by, feeling them, looking at them, smelling them, inspect the packaging, and the way the product is displayed. However, for intangible products or services the customers are often not able to evaluate them on the basis of feeling, looks, smell etc. Thus, for tangible products a customer can evaluate the product to some degree before he makes an purchase,
however, when it comes to intangible products, the possibility to do a ‘pre-purchase evaluation’ is much more limited. For intangible products most of the evaluation is done after the service is purchased (Berry 2000). Zeithaml (1981) also acknowledged that the lack of physical appearance among the services makes it harder to differentiate one service from another, therefore, he emphasizes that brand building is crucial for services. Berry (2000, p.128) goes even further and claims that “branding is not just for tangible goods; it is a principal success driver for service organizations as well”.

A strong brand can act as a tool for potential customers to visualize and build a better understanding of intangible products. Therefore, the brand helps the customers by reducing the perceived social, safety, and monetary risk connected with the buying decision (Berry, 2000). Further, studies have shown that high performance service companies tend to use their brand as a way of building trustful relationships with their customers (Berry, 1999).

2.5.1 Brand Trust
Wierstra et al. (2001 p.9) defines trust in consumer relationship as “the willingness of the average consumer to rely on the ability of the brand to perform its stated function”. This is similar to how Hsu et al. (2012) describes what they called brand reliability. Further, trust has been shown by both Zviran (2008) and Wei et al. (2009) to be of high importance for marketing of products or services where the consumers are not able to experience the product before they purchase it. When a customer has developed trust for a company or a brand, he/she has the confidence that the performance of the service will meet the functionalities promised by the company (Chaudhuri & Holbrook, 2001). Thus, trust can reduce the feeling of vulnerability that the customer might have during a purchase of something they have not yet tried (Hartmann & Ibanez, 2007; Lee & Back, 2008).

Apart from the feelings of confidence, reliability, and safety that trust can provide to the consumer (Chaudhuri & Holbrook, 2001; Lee & Back, 2008), it has been shown that trust can help the company to build a positive relationship with the customer which includes intensified purchase behavior, commitment to the brand, and brand loyalty (Morgan & Hunt, 1994). Further, it has also been shown that trust plays an important role in building brand for internet service provider (Chiu et al., 2010), thus, the authors of this paper believe that trust might also be an important part of brand building among mobile network operators.
2.6 Summary and Redefined Concept

In the literature review above, the authors of this paper have shown that, the four dimensions originally proposed by Aaker (1991): brand awareness, brand associations, perceived quality, and brand loyalty, are the most widely used dimensions of customer based brand equity. The literature review above also shows that those four dimensions have been empirically tested for several product categories and in most cases proven to be valid. Washburn and Plank (2002) also found support for all four dimensions, however, they concluded that further research is necessary for unconditional acceptance of the dimensions. Moreover, the literature review shows that branding of service products differs from branding of tangible products in the sense that building trust is of higher importance when it come to intangible products.

However, the literature review shows that there is a lack of consensus among the scholars in the field regarding what actually constitutes CBBE. Several different concepts have been proposed which makes up brand equity, thus, there is a lack of consistency among the scholars.

Thus, the author of this paper suggests that there are no universal dimensions which constitute CBBE but instead all of these dimensions play significant roles in influencing the CBBE of a product or a service. The literature review has also shown that this view is shared by several other scholars (Faircloth et al., 2001; Morrison & Eastburn, 2006; Yasin et al., 2007; Kim et al., 2008).

Therefore, the authors of this paper hypothesize that, ‘the four dimensions of Aaker’s brand equity’ as well as the dimension of ‘trust’ influence CBBE in service industry.

Thus, the authors of this paper propose the following model, to illustrate the factors influencing customer based brand equity:
2.7 Hypotheses

Based on the literature review presented above, this paper seeks to answer the following hypotheses:

H1: *Brand awareness has a positive relationship with customer based brand equity for mobile network operators.*

H2: *Brand associations has a positive relationship with customer based brand equity for mobile network operators.*

H3: *Perceived quality has a positive relationship with customer based brand equity for mobile network operators.*

H4: *Brand loyalty has a positive relationship with customer based brand equity for mobile network operators*

H5: *Brand trust has a positive relationship with customer based brand equity for mobile network operators.*
3. Method

In this part of the thesis, the time horizon, the data collection, the sample selection, the operationalization, and the chosen statistical test are presented.

3.1 Time Horizon

There are two distinct time horizons for research studies: longitudinal and cross-sectional. Under a longitudinal time horizon the phenomena are studied over time, thus, this time horizon allows the researcher to witness any changes over time. In contrast, under a cross-sectional time horizon the phenomena are studied at one particular time, thus, giving more of a ‘snapshot’ of the phenomena (Saunders et al., 2009). Robson (2002) claims that the cross-sectional time horizon is the most widely used method in social research. In this study a cross-sectional time horizon will be used since this study is to be performed in 20 weeks. Further, this study is not intended to witness changes over time but merely indentify relationships between different variables.

3.2 Data Collection

The data for this study was collected through a survey with self-administered delivery and collection questionnaires. This type of questionnaire should provide a higher response rate than postal- or internet-mediated questionnaire. Self-administrated questionnaires have been chosen since this type of questionnaires can provide anonymity of the respondents. Anonymity of the respondents might very well have a positive effect for the reliability and the response rate. Further, this type of questionnaire is less expensive and less time consuming compared to interviewer-administered questionnaires. One drawback of self-administered questionnaires is that it might have a lower response rate than interviewer-administered questionnaires (Saunders et al., 2009). For longer questionnaire Oppenheim (2000) suggest that structured interviews are the best way, however, in this study the questionnaire will not be any longer than two pages. Thus, the authors of this paper believe that self-administered delivery and collection questionnaires will be the best alternative to collect data for the present study. As the reader can find in the next section, the respondents for the survey were students of Uppsala University. In order to achieve a high response rate, the questionnaires were distributed during lectures, at different departments, and collected at the end of those lectures. By handing out the questionnaire during lectures, there is a lower possibility that the respondent will answer the questionnaire on more than one occasion. Moreover, the order of the questions in the
questionnaire has been randomized, as proposed by Siminski (2008), in order to reduce the risk of biased answers. Finally, the questionnaire were translated into Swedish, using parallel translation technique, as advocated by Saunders et al. (2009), by using three independent bilingual translators. This was done in order to strengthen both the reliability and the validity of the study.

3.3 Sample Selection
The respondents for the survey were students at Uppsala University. The usage of students as respondents in social studies has been argued to hurt the validity and generalizability (Brunette & danne, 1986; Wells, 1994). However, Post- och telestyrelsen (2012) explains that the age group 21 -30 is the part of the Swedish population who to the highest degree relies solely on the use of mobile phones for their communication. Thus, the choice of university students as respondents seems wise since many of the students will fall into that age group (21-30). Further, the use of students as respondents have been used by many scholars (Watson et al. 1998; van Riel et al., 2001; Yoo & Donthu, 2001; Washburn & Plank, 2002; Watson, et al., 2002; Umans et al., 2008). The reason for not including other age groups are the restrictions in budget and time for the study. Moreover, in his study “On the Use of College Students in Social Science Research” Peterson (2001) did not find and systematic patterns of differences between students and non-students. In order to increase the level of reliability, the survey was conducted in several different faculties and departments of the university, thus, incorporating students from several different fields of studies. The questionnaires were distributed in the following departments: Department of Business Studies, Department of Education, Department of Government, Department of Information Technology, Department of Linguistics and Philology, Department of Medical Cell Biology, Department of Neuroscience, and Department of Psychology.

The total number of questionnaires that were distributed was 400. The sample size of 400 respondents corresponds with the sample sizes of several scholars who have performed similar studies in the field (Yoo & Donthu, 2001; Christodoulides et al., 2006; Kayaman & Arasli, 2007; Buil et al., 2008; Pappu & Quester, 2008; Tong & Hawley, 2009), who all had between 304 and 422 usable responses.
Before the actual survey was performed, a pilot test was conducted to make sure that none of the respondents would have any problem understanding or answering the questions. The size of the pilot test population was 30, since the suggested minimum size, by Saunders et al. (2009) and Fink (2003) for pilot test is 10. The pilot survey resulted in some changes of the questions which can be seen in the operationalization section.

### 3.4 Operationalization

Since this study has a deductive research approach, there is a need to operationalize measures which will be used for measuring the different concepts. This means that the concepts are reduced into simpler elements which make them easier to understand and measure. To maintain reliability and validity it is important to operationalize both the independent and dependent variables (Saunders et al., 2009). Below the measures used for this study will be described.

The survey used a questionnaire which has three parts. In the first part the respondents were asked to reveal their gender (question 1). In the second part the respondents were asked about their purchase of mobile service (question 2-3). In the final part the respondents were asked questions regarding all the dimensions and customer based brand equity (question 4-25). For question 4-25 the respondents were asked to rate to what degree (on a Likert scale where 1=do not agree at all and 7=fully agree) they agree with a statement.

**Gender**

As mentioned, the respondents were asked to reveal their gender. The reason for using this question is simply to be able to explore if there is any difference regarding the importance of the different variables between men and women. This is viewed by the authors of this paper as especially important for the questions regarding trust since former research have shown that there are differences regarding perceived risk and trust between men and women (Finucane, et al., 2000). This question can be found in Appendix 1, Q1.

**Questions regarding mobile service purchase**

These questions were asked, to be able to see if there are any differences between different mobile network operators. The questions can be found in Appendix 1, Q2-3.
Questions regarding brand awareness

Three items were used to capture brand awareness. These questions were adopted from Yoo et al. (2000) and Tong and Hawley (2009). The questions can also be found in Appendix 1.

- “Some characteristics of this brand come to my mind quickly”. (Q4)
- “I can recognize this brand quickly among other competing brands”. (Q6)
- “I am familiar with this brand”. (Q9)

Questions regarding brand associations

Four items were used to capture brand associations. These questions were borrowed from Tong and Hawley (2009) who have developed these measurements based on the description of Keller (1993) and Pappu et al. (2005). The questions can also be found in Appendix 1.

- “This Brand has very unique brand image, compared to competing brands”. (Q11)
- “I think highly of people who use this brand”. The original question, derived from Tong and Hawley (2009) was “I respect and admire people who use this brand”. The reason for changing the question was that the original question was addressing two issues: respect and admiration. (Q13)
- “I like the brand image of this brand”. (Q15)
- “I like and trust the company, which provides this service”. (Q7)

Questions regarding perceived quality

Three items were used to capture perceived quality. These questions were adopted from Keller (2001), Pappu et al. (2005) and Tong and Hawley (2009). The questions can also be found in Appendix 1.

- “I trust the quality of service from this brand”. (Q5)
- “Services from this brand would be of very good quality”. (Q16)
- “Services from this brand completely satisfy my needs”. (Q10)
Questions regarding brand loyalty

Five items were used to capture brand loyalty. These questions were derived from Yoo et al. (2000), Pappu et al. (2005), and Tong and Hawley (2009). The questions can also be found in Appendix 1.

- “I consider myself to be loyal to this brand”. (Q18)

- “When choosing a mobile network operator, this brand would be my first choice”. (Q20)

- “I will keep on using this brand as long as it provides me with satisfactory services”. (Q22)

- “I am still willing to use this brand even if its price is a little higher than that of its competitors”. (Q17)

- “I would recommend this brand to my friends”. The original question, derived from Tong and Hawley (2009) was “I would love to recommend this brand to my friends”. The authors of this paper decided to remove the term love, since love is a complex term which does not necessarily mean the same for all individuals. Further, the word love does not add anything to the question. (Q14)

Questions regarding brand trust

Four items were used to capture brand trust. These questions were borrowed from Chaudhuri and Holbrook (2001) and Chiu et al. (2010). The questions can also be found in Appendix 1.

- “I trust this brand”. (Q25)

- “I am dependent on my mobile network operator”. The original question was “I depend on the services of this brand”, however, after testing the questionnaire on a test population it was concluded that this question was hard for respondents to understand. (Q21)

- “This is an honest brand”. (Q23)
- “Buying this brand is a safe choice”. The original question derived from Chadhuri and Holbrook (2001) was “This brand is safe”. The authors of this paper believe that by changing the question it becomes easier for the respondents to answer the question regarding mobile network operators. (Q12)

**Questions regarding customer based brand equity**

Three questions were used to measure customer based brand equity. The questions were derived from Yoo *et al.* (2000) and Tong and Hawley (2009). The questions can also be found in the Appendix 1.

- “Even if another brand has the same features as this brand, I would prefer to buy this brand”. (Q8)
- “If another brand is not different from this brand in any way, it still seems smarter to purchase this brand”. (Q19)
- “This brand is more than a service to me. E.g. expression of my personality (happy/smart/fashionable)”. The original question was “This brand is more than a service to me”. It was changed since the test population mentioned that this question needed further clarification and example. (Q24)

The full questionnaire can be seen in Appendix 1. The Swedish version of the questionnaire can be seen in Appendix 2.

### 3.5 Choice of Statistical Tests

The following statistical tests will be used in order to analyze the collected data.

*Reliability test - Cronbach's Alpha*

It is important the scales include in the study are reliable. As mentioned earlier this study uses established constructs and questions (items), which is a good method to increase the reliability of the scales. One of the big issues of a scale’s reliability is to which degree the different items, making up a scale, measure the same thing. This is what is called a scale’s internal consistency. The Cronbach’s Alpha coefficient is one of the most widely used ways of measuring internal consistency (Pallant, 2005). Thus, the use of Cronbach’s Alpha coefficient in this study will ensure the internal reliability of the scales used.
Factor Analysis - Confirmatory Factor Analysis

The structure underlying a group of variables can be identified using factor analysis. There are two different ways of using factor analysis, exploratory and confirmatory (Pallant, 2005). In this study, confirmatory factor analysis will be used in order to confirm the structure of the constructs in the CBBE model described earlier in the paper. In other words, factor analysis is used in this paper to confirm that the five constructs are all separate constructs.

Standard Multiple Regression

In order to explore the relationship between independent and dependent variables, multiple regression can be used. In this study, standard multiple regression will be used, which is also the most commonly used type of multiple regression analysis (Pallant, 2005). In this paper, this type of analysis will be used to describe how CBBE is affected by variance in the five independent constructs of the model.
4. Results

In this part of the thesis, the subject characteristics, reliability and validity of the measures used are discussed. Further, the result of the multiple regression analysis is presented.

4.1 Subject Characteristics

As mentioned earlier, the survey questionnaires were distributed among students of Uppsala University. The total number of questionnaires distributed was 400, out of which 387 were returned. From the total 387 responses received, 24 were rejected based on incomplete answers, respondents having multiple operators, or multiple choices made for the same question. Further, two outliers were detected using SPSS descriptive statistics, however, according to Pallant (2005, p.151), “With large samples, it is not uncommon to find a number of outlying residuals. If you find only a few, it may not be necessary to take any action”. Thus, in this paper the outliers are not deleted. This resulted in a final of 363 valid responses. The response rate was 90.75 per cent; the authors of this paper believe that the relatively high response rate is a result of the procedure of handing out the questionnaires during lectures in collaboration with lecturers of Uppsala University.

Out of the 363 respondents, 37.5 per cent (n=136) were male and 62.5 per cent (n=227) were female. This ratio does not represent the gender ratio of the Swedish population (SCB, 2011), however, it roughly represents the gender ratio of Swedish students in higher education as well as the gender ratio of Uppsala University students (HSV, 2001; TCO, 2010; SCB, 2011).

The following operators/brands were used by the respondents: Tele2 (n=120), Telia (n=93), Tre (n=52), Telenor (n=40), Comviq (n=37), Halebop (n=21). This does not represent the size of the market shares of these brands. As mentioned earlier, Telia has the biggest market share followed by Tele2 (Post-och telestyrelsen & TNS SIFO, 2010).

The respondents, as mentioned earlier, were also asked to answer whether they have chosen their mobile network operator themselves or if the choice was made by someone else. 86.8 per cent (n=315) of the respondents cited that they had chosen their mobile network operator by themselves, whereas 13.2 per cent (n=48) indicated that they had not made a choice themselves.

The table below summarizes the above mentioned description of respondents:
<table>
<thead>
<tr>
<th>Items</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>136</td>
<td>37.5</td>
</tr>
<tr>
<td>Female</td>
<td>227</td>
<td>62.5</td>
</tr>
<tr>
<td>Total</td>
<td>363</td>
<td>100</td>
</tr>
<tr>
<td>Operator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tele2</td>
<td>120</td>
<td>33.1</td>
</tr>
<tr>
<td>Telia</td>
<td>93</td>
<td>25.6</td>
</tr>
<tr>
<td>Tre</td>
<td>52</td>
<td>14.3</td>
</tr>
<tr>
<td>Telenor</td>
<td>40</td>
<td>11.0</td>
</tr>
<tr>
<td>Comviq</td>
<td>37</td>
<td>10.2</td>
</tr>
<tr>
<td>Halebop</td>
<td>21</td>
<td>5.8</td>
</tr>
<tr>
<td>Others</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>363</td>
<td>100</td>
</tr>
</tbody>
</table>

Did you chose the operator yourself?

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>315</td>
<td>86.8</td>
</tr>
<tr>
<td>No</td>
<td>48</td>
<td>13.2</td>
</tr>
<tr>
<td>Total</td>
<td>363</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 2 - Subject Characteristics

4.2 Reliability and Validity of Measures

In order to evaluate the internal consistency, Cronbach’s alpha coefficient was used. The Cronbach’s alpha value for brand awareness was 0.630 and customer based brand equity was 0.682 which are close to the established cutoff value of $\alpha \geq 0.7$ as suggested by Nunnally (1978). However, it should be mentioned that all the corrected item-total correlations are above 0.3 which according to Pallant (2005) and Hair et al. (1998), suggest that the items in the scale are measuring the same thing. Further, several other scholars have argued that the cutoff value for acceptable reliability is $\alpha \geq 0.6$ (Murphy & Davidshofer, 1988; Sim & Wright, 2000; Sekaran, 2003). Moreover, the authors of this paper feared that even though the alpha values would increase slightly by deleting one item, the dimensionality of the constructs would have suffered. Thus, none of the items making up the constructs were deleted. The remaining four constructs all have an alpha value higher than 0.7. All alpha values can be seen in table 3.

For all the five constructs, brand awareness, brand associations, perceived quality, brand loyalty, and brand trust, exploratory factor analysis were conducted separately. Unfortunately the analysis could not prove discriminant validity for the five constructs. Further, the construct of brand trust was tested against a combined construct containing all the four remaining independent variables. However,
even this analysis did not showed discriminant validity between the constructs; instead it suffered from cross loadings. Even when allowing extractions of constructs with an eigenvalue lower than 1.0 the constructs still suffered from cross loadings.

The author of this paper also tried to use selection variable for the factor analysis, in order to prove discriminant validity. Meaning that the information regarding gender, operator, and whether the choice of operator have been done by the users themselves, were used to exclude some of the subjects in order to tell whether this could reduce the cross loadings. The following combinations were used: exclusion of males, exclusion of females, exclusion of each individual operator one by one, and exclusion of those respondents who had not chosen their operators themselves. However, the authors of this paper did not try the alternative of excluding all of those who did not choose their operator by themselves, since in that case the population would have been too small for the subsequent analytical tests. Still, after the rigorous use of the selection variables, discriminant validity could not be proven.

Nevertheless, all the constructs are established and have been widely used in previous research (Keller, 1993; Yoo et al., 2000; Chaudhuri & Holbrook, 2001; Keller, 2001; Pappu et al., 2005; Tong & Hawley, 2009; Chiu et al., 2010), further, all the survey questions have also been used by earlier scholars. Thus, the author of this paper will still continue and conduct a multiple regression analysis.

### 4.3 Standard Multiple Regression

Standard multiple regression analysis was performed to test the relationships between the five independent variables: brand awareness, brand associations, perceived quality, brand loyalty, brand trust and the dependent variable: customer based brand equity.

In the following tables and figures the variables will be shown as:

<table>
<thead>
<tr>
<th>Independent variables:</th>
<th>Dependent variable:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand awareness: Baw</td>
<td>Customer based brand equity: BE</td>
</tr>
<tr>
<td>Brand associations: Bas</td>
<td></td>
</tr>
<tr>
<td>Perceived quality: PQ</td>
<td></td>
</tr>
<tr>
<td>Brand loyalty: BL</td>
<td></td>
</tr>
<tr>
<td>Brand trust: BT</td>
<td></td>
</tr>
</tbody>
</table>
Since the equation for standard multiple regression is: 
\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon, \]
the equation for the regression in this paper is:
\[ BE = \beta_0 + \beta_1 Baw + \beta_2 Bas + \beta_3 PQ + \beta_4 BL + \beta_5 BT + \varepsilon. \]

4.3.1 Assumptions

In order to evaluate the relationship between the variables, all the correlation between the dependent and the independent variables should be verified. According to Pallant (2005), there should preferably be some relationship between the dependent and the independent variables. The correlation between the independent and the dependent variables should preferably be above 0.3. The correlation between the independent and dependent variables in this study are all above 0.3 with brand loyalty, brand trust and brand associations having high level of correlation of 0.702; 0.584 and 0.530 respectively. The two other independent variables, perceived quality and brand awareness, have slightly lower correlations with the dependent variable, customer based brand equity. The correlation between customer based brand equity and perceived quality is 0.478 and for brand awareness the correlation is 0.322. Even though the correlations between customer based brand equity, perceived quality and brand awareness are slightly lower than the other correlations, these are still valid since the values are above 0.3.

Further, the authors of this paper believe that it is of high importance to check that the relationships between the independent variables are not too strong. Not surprisingly there are some correlations between all the independent variables. The relationship between brand loyalty and brand trust is quite strong, with a fairly high correlation of 0.718. Still this is below the suggested cutoff value of 0.9 (Hair et al., 2006). All the correlations can be seen in the correlation matrix in table 4 below.
Even though the correlation matrix does not suggest multicollinearity, the authors of this paper believe that, it is important to check for the multicollinearity in regression. One way of doing this is to check the variance inflation factor (VIF) and the tolerance values. This would help in identifying any possible problems with multicollinearity even when the problem is not evident in the correlation matrix. According to Pallant (2005), the VIF values above 10 suggest multicollinearity. The values for all the independent variables in this study are all below 3. Regarding the tolerance value, Pallant (2005) suggest that, values below 0.1 indicate multicollinearity. In this study the tolerance value ranges from 0.365 to 0.689, thus, showing no indications of multicollinearity. The values can be seen in table 5 below.

<table>
<thead>
<tr>
<th>Correlations</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Brand Equity</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Brand Awareness</td>
<td>0.322</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Brand Associations</td>
<td>0.530*</td>
<td>0.521</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Brand Loyalty</td>
<td>0.702***</td>
<td>0.482</td>
<td>0.663</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Perceived Quality</td>
<td>0.478</td>
<td>0.446</td>
<td>0.614</td>
<td>0.696</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>6. Brand Trust</td>
<td>0.584**</td>
<td>0.416</td>
<td>0.634</td>
<td>0.718</td>
<td>0.694</td>
<td>1.000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sig. (1-tailed)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Brand Equity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Brand Awareness</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>3. Brand Associations</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>4. Brand Loyalty</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>5. Perceived Quality</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>6. Brand Trust</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
</tbody>
</table>

* p ≤ 0.05  
** p ≤ 0.005  
*** p ≤ 0.0005  

Table 4 - Correlation matrix

<table>
<thead>
<tr>
<th>95.0% Confidence interval</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Bound</td>
<td>Upper Bound</td>
</tr>
<tr>
<td>(Constant)</td>
<td>-0.345</td>
</tr>
<tr>
<td>Brand Awareness</td>
<td>-0.171</td>
</tr>
<tr>
<td>Brand Associations</td>
<td>0.007</td>
</tr>
<tr>
<td>Brand Loyalty</td>
<td>0.480</td>
</tr>
<tr>
<td>Perceived Quality</td>
<td>-0.273</td>
</tr>
<tr>
<td>Brand Trust</td>
<td>0.072</td>
</tr>
</tbody>
</table>

Table 5 - Tolerance and VIF
4.3.2 Normality, Outliers, Linearity, Independence of Residuals.
The normal probability plot and scatterplot are included in the appendix (Appendix 3 & 4) and do not show any violation of assumptions of multiple regression except for the previously mentioned presence of outliers. As mentioned earlier, two outliers were found, however, the authors of this paper chose to retain them since according to Pallant (2005), one would normally expect one per cent of the cases to be outliers, since the total number of cases were 363, having two outliers would still suggest normal distribution. Further, in the residuals statistics, one can see that maximum value for Cook’s distance is 0.108 which is well below the maximum allowed level. Maximum values of Cook’s distance higher than 1 has been suggested to affect the results of the model negatively (Tabachnick & Fidell, 2001). Thus, the outliers in the data set do not have a notable negative effect on the model as a whole. Cook’s distances can also be found in the under ‘Residuals Statistics’ in table 9 (Appendix 5). For exact values of the outliers identified, see table 10 ‘Casewise Diagnostics’ (Appendix 5).

4.3.3 Evaluation of the Model
In order to judge how much of the variance in customer based brand equity is being explained by the five independent variables one should look at the value of R square ($R^2$). The value of $R^2$ tells you how much of the variance in the dependent variable the model explains. The $R^2$ value in this study is 0.516 which means that the model explains 51.6 per cent of the variance in customer based brand equity. According to Pallant (2005), this can be considered as a respectable result. The model summary which includes the $R^2$ can be seen in the table 6 below.

<table>
<thead>
<tr>
<th>Model Summary</th>
<th>R</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>0.718</td>
<td>0.516</td>
<td>0.509</td>
<td>0.993</td>
</tr>
</tbody>
</table>

Table 6 - Model Summary

In the ANOVA, one can see the level of significance of the results. As seen from the ANOVA in table 7 below, the results of the model in the paper are statistically significant at the level of $P < 0.0005$. 
4.3.4 Evaluating the Independent Variables

To judge whether the unique contributions of the independent variables in the equation are statistically significant, one should look at the significance value in the coefficients table, which should preferably not be greater than 0.05. In this study three of the five independent variables: brand loyalty, brand trust, and brand associations all show significance values of, \( p < 0.0005 \), \( p = 0.002 \), and \( p = 0.040 \) respectively, indicating that they are all making a significant unique contribution to customer based brand equity.

One way to compare the contributions of these three independent variables is to look at the standardized coefficients beta value. For the three independent variables making unique contributions, brand loyalty, brand trust, and brand associations, the beta values are 0.599, 0.180, and 0.113 respectively. This indicates that the biggest unique contribution to customer based brand equity is made by brand loyalty followed by brand trust and brand associations.

The part correlation coefficients for brand loyalty, brand trust, and brand associations are 0.362, 0.113, and 0.076. By calculating the squared value of the part correlation coefficients (part value\(^2\)), one can identify the actual contribution of that variable to the total \( R^2 \), which as mentioned earlier, indicates how much of the variance in the dependent variable the model explains. Firstly, by calculating the square of part correlation coefficients of brand loyalty, we get the value of 0.1310 (0.362 * 0.362). This means that brand loyalty uniquely explains 13.10 per cent of variance of customer based brand equity. Secondly, by calculating the squared part correlation of brand trust, we get the value of 0.0128 (0.113 * 0.113), which indicates that 1.28 per cent of variance of customer based brand equity is uniquely explained by brand trust. Finally, by repeating the procedure for brand associations, we get the value of 0.0058 (0.076 * 0.076), which tells us that 0.58 per cent is uniquely explained by brand associations. It is important to remember that these percentages only indicate unique contributions and that shared variance and
any overlap between the variables has not been considered in these values. These small unique contributions indicate that there might be a lot of shared variance. This is strengthened by the fact mentioned earlier, that there are quite strong correlations between the three variables.

In table 8 below, the beta values, the significance values, part correlations, and part square for the independent variables can be seen.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficient</th>
<th>t</th>
<th>Sig.</th>
<th>Correlations</th>
<th>Part Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>0.211</td>
<td>0.283</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baw</td>
<td>-0.063</td>
<td>0.055</td>
<td>-0.051</td>
<td>-1.147</td>
<td>0.252</td>
<td>0.322</td>
</tr>
<tr>
<td>Bas</td>
<td>0.142</td>
<td>0.069</td>
<td>0.113</td>
<td>2.063</td>
<td>0.040</td>
<td>0.530</td>
</tr>
<tr>
<td>BL</td>
<td>0.600</td>
<td>0.061</td>
<td>0.599</td>
<td>9.831</td>
<td>0.000</td>
<td>0.702</td>
</tr>
<tr>
<td>PQ</td>
<td>-0.136</td>
<td>0.070</td>
<td>-0.111</td>
<td>-1.950</td>
<td>0.052</td>
<td>0.478</td>
</tr>
<tr>
<td>BT</td>
<td>0.200</td>
<td>0.065</td>
<td>0.180</td>
<td>3.067</td>
<td>0.002</td>
<td>0.584</td>
</tr>
</tbody>
</table>

Table 8 - Beta values, significance values, part correlations, part squares

### 4.4 Summary of Results

To summarize the results presented above, construct reliability has been proven, however, the factor analysis suffered from cross loadings, therefore, discriminant validity could not be proven. Further, the authors of this paper have shown that there are no violations of the assumptions of multiple regression and that the model presented in the paper explains 51.6 per cent of the variance in customer based brand equity. Moreover, it was shown that three of the independent variables are making unique contribution to the variance of customer based brand equity. The biggest contribution to the explanation of the variance in customer based brand equity, was made by brand loyalty followed by brand trust and brand associations.
5. Analysis

In this part of the thesis, an analysis of the result can be found. Further, a modified version of the model illustrating the factors influencing customer based brand equity is presented.

As mentioned in the literature review, several scholars have demonstrated that customer based brand equity (CBBE) is positively influenced by brand awareness, brand associations, brand loyalty, and perceived quality. Further, the literature review also describes that other scholars have demonstrated that brand trust plays an important role in creating a positive relationship between customers and brands for intangible products.

The empirical results of this study show that brand awareness (Baw) does not have a significant correlation to CBBE (BE) (see table 4). Therefore, **H1 - Brand awareness has a positive relationship with customer based brand equity for mobile network operators** - is rejected.

This stands in contrast to the findings of Yasin *et al.* (2007) and Kim *et al.* (2008), who showed that CBBE is positively influenced by brand awareness. Thus, this study cannot show any evidence which strengthens the earlier findings, by those previous scholars, of a positive relationship between CBBE and brand awareness. The reason for the different result from this study in comparison to Yasin *et al.* (2007) and Kim *et al.* (2008) is not known. However, it might be the result of different product categories which were studied. While Yasin *et al.* (2007) studied household electrical appliances and Kim *et al.* (2008) looked in the hospital market, the author of this paper, as mentioned earlier, have looked into mobile network operators. Another explanation for the difference might be the age group covered in studies. This study have used university students as respondents which naturally means that the respondents tends to be of a younger age, whereas, Yasin *et al.* (2007) and Kim *et al.* (2008) have not limited their studies to a specific age group. This study has been conducted in Sweden, while Yasin *et al.* (2007) and Kim *et al.* (2008) have conducted their studies in Malaysia and South Korea. Therefore, the difference in the results might also be a result of cultural differences.

From the correlation matrix (table 4) one can also see that brand associations (Bas) positively correlates with CBBE (BE), on a statistical significance level of \( p \leq 0.05 \), indicating that brand associations has a positive influence on CBBE. Therefore, **H2 - Brand associations has a positive relationship with customer based brand equity for mobile network operators** - is accepted.
This finding is in line with the findings of Yasin et al. (2007), who suggested that CBBE is positively influenced by brand associations. Further, it also strengthens the findings of Faircloth et al. (2001) who found a positive influence of what they call brand image (which is similar to what is defined as brand associations in this study) on CBBE. Thus, the results of this study indicate that CBBE for mobile network operators is positively influenced by brand associations. This goes in line with the conceptualized model of this paper suggesting the above mentioned relationship.

As mentioned in the literature review, perceived quality has been shown by Morrison and Eastburn (2006) to positively influence CBBE. The present study could not verify the results of Morrison and Eastburn (2006) regarding positive influence of perceived quality on CBBE. In this study the correlation between perceived quality (PQ) and CBBE (BE), could not be proven on a statistically significant level of p ≤ 0.05. Thus, this paper is not able to confirm the relationship, between perceived quality and CBBE. Therefore, **H3 - Perceived quality has a positive relationship with customer based brand equity for mobile network operators - is rejected.**

Once again there is a possibility that the limited age group in this study may have contributed to the difference in result from that of Morrison and Eastburn (2006), who had respondents with a mean age of 41.2 years. Further, the difference in result might be affected by the culturally bound differences between the respondents, since Morrison and Eastburn’s (2006) study was conducted in Australia. However, the authors of this paper believe that the difference in the results between the studies most likely originates from different product categories. While the present study has looked into the intangible service of mobile network operators, the study conducted by Morrison and Eastburn (2006) looked into the tangible product category of beef.

The strongest correlation found in this study is between brand loyalty (BL) and CBBE (BE) as shown in table 4. This relationship has a statistical significance level of p ≤ 0.0005. Therefore, **H4 - Brand loyalty has a positive relationship with customer based brand equity for mobile network operators - is accepted.**

In the literature review the authors of this paper have showed that Yasin et al. (2007) found a positive relationship between CBBE and brand loyalty. Thus, this study strengthens the results of Yasin et al. (2007) and suggests that this positive relationship between the constructs is also
present in the segment of mobile network operators in Sweden. This means that the result strengthens the conceptualized model mentioned earlier in this paper.

The fifth construct, brand trust, has been described by earlier scholars to play an important role when relationships are being established between customers and brands for intangible products. Drawn from this assumption regarding the importance of brand trust, this paper, as mentioned earlier, hypothesizes that brand trust will have a positive influence on CBBE. The correlation matrix (table 4) shows a correlation between brand trust (BT) and CBBE (BE) on a statistical significance level of $p \leq 0.005$, which indicates that CBBE is positively influenced by brand trust. Therefore, **H5 - Brand trust has a positive relationship with customer based brand equity for mobile network operators - is accepted.**

As mentioned earlier, in the literature review, Chiu et al. (2010), have shown that brand trust plays an important role for building brand in the service industry. The result from the present study indicates that brand trust positively influence customer based brand equity. Thus, further strengthening the findings of Chiu et al. (2010). The authors of this paper find this relationship, between brand trust and customer based brand equity, to be of especially interesting since, it gives some indication that the construct of brand trust (which has been included in the conceptualized model of this paper) is an area which has been neglected by many of the former scholars in the field of customer based brand equity. However, it should be remembered that this study has investigated an intangible product and that the results might be restricted to the mobile network operators or perhaps to the service sector in general. Thus, the result cannot be generalized to tangible products without further research.

Based on the analysis of the result, the authors of this paper suggest the following modified model which indicates the different constructs and their importance in influencing customer based brand equity.
The results of this paper suggest that the traditionally used constructs of brand awareness, brand associations, brand loyalty, and perceived quality are not all influencing customer based brand equity. In fact the results indicates that, at least for mobile network operators in Sweden, brand awareness and perceived quality are not positively influencing customer based brand equity. However, the authors of this paper suggest that more research is needed in order to disregard the importance of the two constructs. Still, the result shows that brand associations and brand loyalty do have positive influence on customer based brand equity.

Further, the results indicate that brand trust positively influences customer based brand equity for mobile network operators in Sweden. However, once again the authors of this paper suggest more research is needed to be able to validate and generalize the findings regarding the influence of brand trust on customer based brand equity. Moreover, it is of high importance to not consider the above modified model as an absolute truth, in fact, as mentioned earlier, the tested model do only explain 51.6 per cent of the variance in customer based brand equity. Thus, suggesting that there might be several more constructs which could influence customer based brand equity.
6. Conclusion

In this part of the paper, a summary of the thesis, a critical review, practical implications, and suggestions for further research can be found.

6.1 Summary

The aim of this thesis is to find an answer to the research question which is stated as follows:

‘Which factors influences brand equity for Swedish mobile network operators?’

This research is based on theories from several different authors in the field of customer based brand equity as well as research regarding brand trust. Both conceptualization and empirical evidence from earlier scholars have been used to build the theoretical framework which forms the foundation of this thesis. From the theoretical framework, the authors of this paper have built a conceptual model illustrating how five different constructs, drawn from earlier scholars, influence customer based brand equity for mobile network operators. The conceptual model is tested to carry out the purpose of this thesis which is to investigate which factors influence brand equity in the Swedish service sector of mobile network operators.

This thesis has solely focused on customer based brand equity and left out the financial perspective of brand equity which is often referred to as firm based brand equity. The author of this paper used a quantitative method to test the conceptualized model. A survey was conducted amongst the students of Uppsala University. The result of the survey indicates some similarities with earlier scholars (see Faircloth et al., 2001 and Yasin et al., 2007). Among the investigated constructs, the strongest influence on customer based brand equity was contributed by the presence of brand loyalty. Besides brand loyalty two other constructs from the conceptualized model, were also found to influence customer based brand equity: brand trust and brand associations. For the two remaining constructs, brand awareness and perceived quality, this study could not find any significant influence on customer based brand equity.

The conceptualized model was accompanied with the following five hypotheses:

**Hypothesis 1:** Brand awareness has a positive relationship with customer based brand equity for mobile network operators. – **Rejected**
Hypothesis 2: 
*Brand associations has a positive relationship with customer based brand equity for mobile network operators.* - **Accepted**

Hypothesis 3: 
*Perceived quality has a positive relationship with customer based brand equity for mobile network operators.* - **Rejected**

Hypothesis 4: 
*Brand loyalty has a positive relationship with customer based brand equity for mobile network operators.* - **Accepted**

Hypothesis 5: 
*Brand trust has a positive relationship with customer based brand equity for mobile network operators.* - **Accepted**

The results suggest that managers should focus their investments on activities which create brand associations, brand loyalty, and brand trust while being more careful when considering activities intended to increase brand awareness and perceived quality. Thus, being able to realize the benefits of: brand extension possibilities, increased effectiveness of marketing communication, greater cooperation and support from intermediates, more favorable customer response to price increases, and thus larger profit margins, which were all suggested by Keller (2001) to be granted to companies which have strong brands with high customer based brand equity.

By focusing mainly on these three activities, companies may be able to restrain the escalating costs of branding, described by Simon and Sullivan (1993) and still being able to obtain the benefits of having a strong brand, described by Keller (2001).

6.2 Critical Review

This thesis seeks to explore different constructs and their importance in influencing customer based brand equity (CBBE) of mobile network operators in Sweden. The findings of this study indicate that brand loyalty, brand trust, and brand associations all positively influence CBBE. However, due to homogenous respondent group consisting solely of students of Uppsala University, the results has a limited generalizability and the finding should be treated with caution until further research has been conducted.

One critical reflection is that even though the students who acted as respondents, for the survey conducted, were chosen from several different departments of Uppsala University, they might
not represent the entire student population of Uppsala University, nor the entire population of Swedish mobile network users. A critical factor here is that by using the student population, the study has missed out on other age groups. Further, by choosing a student population the study has missed out on all those people who have chosen not to engage themselves in higher education.

The study looked into the mobile network users of Sweden and the authors of this paper believe that this study cannot be generalized across nations and that further research is required to validate the model in different countries.

While many of the former studies in the field have been conducted on tangible products, this study has been investigating the constructs influencing CBBE for an intangible product category. Since this study is investigating the market of mobile network operators, thus, being one of the few studies looking into the service sector, the authors of this paper suggest that before any substantial conclusion can be drawn regarding the difference between tangible and intangible product categories, further studies are required in the service sector / intangible product category.

Moreover, even though this study has not been able to prove any significant contribution to CBBE from brand awareness or perceived quality, however, there is still a possibility that these two factors have an indirect effect on CBBE by having a positive effect on the three other factors which in turn affect CBBE. However, to test these indirect relationships is out of the scope of the present study. Still, this is something which still needs to be considered before disregarding the importance of brand awareness and perceived quality.

Furthermore, this study have not taken into consideration the possibility of decreasing marginal utility of investment in the five factors. This is something which needs to be considered by both managers and scholars in the field.

Finally, we would once again highlight the fact that the factor analysis could not prove discriminant validity, thus, the result of this paper should be used with caution until more research has been performed.
6.3 Practical Implications
The result from this study has strengthened parts of former studies in the field of customer based brand equity (CBBE). This study have put forward additional support for the importance of establishing brand associations as well as brand loyalty when creating CBBE. Further, this study has shed light upon the importance of establishing brand trust when building CBBE in the sector of mobile network operators in Sweden. However, this study could not confirm the importance of brand awareness and perceived quality, which has been shown by earlier scholars. This might be an indication of less importance for these constructs in the service sector, however, it is still too early to disregard their importance and more studies needs to be done before one could come to a conclusion regarding the importance of brand awareness and perceived quality.

The authors of this paper hope that this study can be used as a stepping stone for further and more thorough studies on CBBE in the service sector. Further, the thesis result can perhaps be of some value to managers in the service sector (at least for those involved with mobile network operators) by highlighting the importance of brand trust for creating CBBE.

6.4 Future Research
Future research is required to validate the constructs by including different age groups as well as different product categories, both tangible and intangible. Replicating the study, for the same product category but in different countries and with a non-student population would also be of interest. Further, comparison between age group might also be important to consider, especially for practitioners.

As mentioned earlier in this paper the model tested explains 51.6 per cent of the variance in customer based brand equity (CBBE), thus, future research should focus on identifying further variables influence CBBE.
7. References


Appendix 1: Questionnaire in English

Survey Questions: - The respondent will answer the question on a Likert scale from 1-7.

Questions:-

Q1: Please indicate with a ring which gender you have. Male / Female

Q2: Please tell us the name of your mobile network operator. ______________________________

Q3: Did you buy the mobile network service yourself? Please indicate with YES or NO___________

For the following questions, please grade from 1-7 with a circle where 1= Strongly disagree and 7= Strongly agree. The term brand refers to the brand you have for your mobile network service.

Q4: Some characteristics of this brand come to my mind quickly
   (Strongly disagree) 1-----2-----3-----4-----5-----6-------7 (Strongly agree)

Q5: I trust the quality of service from this brand
   (Strongly disagree) 1-----2-----3-----4-----5-----6-------7 (Strongly agree)

Q6: I can recognize this brand quickly among other competing brands
   (Strongly disagree) 1-----2-----3-----4-----5-----6-------7 (Strongly agree)

Q7: I like the company, which provides this service
   (Strongly disagree) 1-----2-----3-----4-----5-----6-------7 (Strongly agree)

Q8: Even if another brand has the same features as this brand, I would prefer to buy this brand
   (Strongly disagree) 1-----2-----3-----4-----5-----6-------7 (Strongly agree)

Q9: I am familiar with this brand
   (Strongly disagree) 1-----2-----3-----4-----5-----6-------7 (Strongly agree)

Q10: Services from this brand completely satisfy my needs.
   (Strongly disagree) 1-----2-----3-----4-----5-----6-------7 (Strongly agree)

Q11: This brand has very unique brand image, compared to competing brands
   (Strongly disagree) 1-----2-----3-----4-----5-----6-------7 (Strongly agree)

Q12: Buying this brand is a safe choice.
   (Strongly disagree) 1-----2-----3-----4-----5-----6-------7 (Strongly agree)

Q13: I think highly of people who use this brand
   (Strongly disagree) 1-----2-----3-----4-----5-----6-------7 (Strongly agree)

Q14: I would recommend this brand to my friends
Q15: I like the brand image of this brand
(Strongly disagree) 1-----2-----3-----4-----5-----6-----7 (Strongly agree)

Q16: Services from this brand would be of very good quality
(Strongly disagree) 1-----2-----3-----4-----5-----6-----7 (Strongly agree)

Q17: I am still willing to use this brand even if its price is a little higher than that of its competitors
(Strongly disagree) 1-----2-----3-----4-----5-----6-----7 (Strongly agree)

Q18: I consider myself to be loyal to this brand
(Strongly disagree) 1-----2-----3-----4-----5-----6-----7 (Strongly agree)

Q19: If another brand is not different from this brand in any way, it still seems smarter to purchase this brand
(Strongly disagree) 1-----2-----3-----4-----5-----6-----7 (Strongly agree)

Q20: When choosing a mobile network operator, this brand would be my first choice
(Strongly disagree) 1-----2-----3-----4-----5-----6-----7 (Strongly agree)

Q21: I am dependent on my mobile network operator.
(Strongly disagree) 1-----2-----3-----4-----5-----6-----7 (Strongly agree)

Q22: I will keep on using this brand as long as it provides me with satisfactory services
(Strongly disagree) 1-----2-----3-----4-----5-----6-----7 (Strongly agree)

Q23: This is an honest brand.
(Strongly disagree) 1-----2-----3-----4-----5-----6-----7 (Strongly agree)

Q24: This brand is more than a service to me. E.g. expression of my personality (happy/smart/fashionable)
(Strongly disagree) 1-----2-----3-----4-----5-----6-----7 (Strongly agree)

Q25: I trust this brand.
(Strongly disagree) 1-----2-----3-----4-----5-----6-----7 (Strongly agree)
Appendix 2: Questionnaire in Swedish

Den här enkätundersökningen är en del av en magisteruppsats i företagsekonomi. Vi hoppas att ni inte har några problem att förstå frågorna och att ni svarar ärligt.

Frågor:
Q1: Var god ringa in det alternativ som stämmer. Jag är: Man / Kvinna
Q2: Vänligen ange din nuvarande telefonoperatör:_______________________________________
Q3: Ange med en ring om det var du som valde din telefonoperatör: Ja / Nej

För följande frågor, indikera från 1 (Instämmer inte alls) till 7 (Instämmer starkt). Begreppet "varumärke" syftar på namnet på din nuvarande telefonoperatör.

Q4: Jag kommer snabbt att tänka på några kännetecken för mitt varumärke
   (Instämmer inte alls) 1-----2-----3-----4-----5-----6-----7 (Instämmer starkt)

Q5: Jag litar på kvaliteten som mitt varumärke tillhandahåller
   (Instämmer inte alls) 1-----2-----3-----4-----5-----6-----7 (Instämmer starkt)

Q6: Jag kan urskilja mitt varumärke från andra konkurerande varumärken
   (Instämmer inte alls) 1-----2-----3-----4-----5-----6-----7 (Instämmer starkt)

Q7: Jag gillar företaget som erbjuder denna tjänst
   (Instämmer inte alls) 1-----2-----3-----4-----5-----6-----7 (Instämmer starkt)

Q8: Även om ett annat varumärke hade samma egenskaper som detta varumärke, så skulle jag föredra att köpa detta varumärke
   (Instämmer inte alls) 1-----2-----3-----4-----5-----6-----7 (Instämmer starkt)

Q9: Jag är bekant med mitt varumärke
   (Instämmer inte alls) 1-----2-----3-----4-----5-----6-----7 (Instämmer starkt)

Q10: Tjänster från detta varumärke tillfredsställer mina behov fullständigt.
    (Instämmer inte alls) 1-----2-----3-----4-----5-----6-----7 (Instämmer starkt)

Q11: Mitt varumärke har en mycket unik image jämfört med andra konkurrerande varumärken
     (Instämmer inte alls) 1-----2-----3-----4-----5-----6-----7 (Instämmer starkt)

Q12: Att köpa detta varumärke är ett säkert val
     (Instämmer inte alls) 1-----2-----3-----4-----5-----6-----7 (Instämmer starkt)

Q13: Jag har höga tankar om andra som använder samma varumärke
     (Instämmer inte alls) 1-----2-----3-----4-----5-----6-----7 (Instämmer starkt)

Q14: Jag skulle rekommendera detta varumärke till mina vänner
Q15: Jag gillar mitt varumärkes image
(Instämmer inte alls) 1-----2-----3-----4-----5-----6-----7 (Instämmer starkt)

Q16: Jag tror att detta företags tjänster är av hög kvalitet
(Instämmer inte alls) 1-----2-----3-----4-----5-----6-----7 (Instämmer starkt)

Q17: Jag är fortfarande villig att använda detta varumärke även om dess pris är lite högre än dess konkurrenters pris
(Instämmer inte alls) 1-----2-----3-----4-----5-----6-----7 (Instämmer starkt)

Q18: Jag anser mig själv vara lojal till detta varumärke
(Instämmer inte alls) 1-----2-----3-----4-----5-----6-----7 (Instämmer starkt)

Q19: Om ett annat varumärke inte skiljer sig från detta varumärke på något som helst sätt, då verkar det fortfarande smartare att köpa detta varumärke.
(Instämmer inte alls) 1-----2-----3-----4-----5-----6-----7 (Instämmer starkt)

Q20: Om jag skulle välja mobiltelefonoperatör så skulle detta varumärke vara mitt första val
(Instämmer inte alls) 1-----2-----3-----4-----5-----6-----7 (Instämmer starkt)

Q21: Jag är beroende av min mobiltelefonoperatör
(Instämmer inte alls) 1-----2-----3-----4-----5-----6-----7 (Instämmer starkt)

Q22: Jag kommer fortsätta använda detta varumärke så länge det erbjuder mig tillfredsställande tjänster
(Instämmer inte alls) 1-----2-----3-----4-----5-----6-----7 (Instämmer starkt)

Q23: Mitt varumärke är ett ärligt varumärke.
(Instämmer inte alls) 1-----2-----3-----4-----5-----6-----7 (Instämmer starkt)

Q24: Mitt varumärke är mer än en tjänst för mig. T.ex. uttryck av min personlighet eller vem jag är (t.ex. fashionabel, glad, smart)
(Instämmer inte alls) 1-----2-----3-----4-----5-----6-----7 (Instämmer starkt)

Q25: Jag känner tillit till varumärket
(Instämmer inte alls) 1-----2-----3-----4-----5-----6-----7 (Instämmer starkt)

Tack för din medverkan i studien. Din hjälp är högt uppskattad. Med vänliga hälsningar Carl & Shuvo
Appendix 3: Normal Probability Plot

Normal P-P Plot of Regression Standardized Residual

dependent variable: BE
Appendix 4: Scatterplot

Scatterplot
Dependent Variable: BE

Regression Standardized Residual

Regression Standardized Predicted Value

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Appendix 5: Residuals Statistics and Casewise diagnostics

<table>
<thead>
<tr>
<th>Residuals Statistics</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicted Value</td>
<td>0.68</td>
<td>5.48</td>
<td>3.39</td>
<td>1.018</td>
<td>363</td>
</tr>
<tr>
<td>Std. Predicted Value</td>
<td>-2.662</td>
<td>2.053</td>
<td>0.000</td>
<td>1.000</td>
<td>363</td>
</tr>
<tr>
<td>Std. Error of Predicted Value</td>
<td>0.061</td>
<td>0.359</td>
<td>0.122</td>
<td>0.037</td>
<td>363</td>
</tr>
<tr>
<td>Adjusted Predicted Value</td>
<td>0.67</td>
<td>5.48</td>
<td>3.39</td>
<td>1.018</td>
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</tr>
<tr>
<td>Residual</td>
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<td>3.334</td>
<td>0.000</td>
<td>0.986</td>
<td>363</td>
</tr>
<tr>
<td>Std. Residual</td>
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<td>3.359</td>
<td>0.000</td>
<td>0.993</td>
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</tr>
<tr>
<td>Std. Deleted Residual</td>
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<td>3.503</td>
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<td>Mahal. Distance</td>
<td>0.374</td>
<td>46.407</td>
<td>4.986</td>
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</tr>
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<td>Cook's Distance</td>
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<td>0.108</td>
<td>0.003</td>
<td>0.008</td>
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<td>0.128</td>
<td>0.014</td>
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Table 9 - Residual Statistics

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<th>Std. Residual</th>
<th>BE&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Predicted Value</th>
<th>Residual</th>
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<sup>1</sup>Note: BE = Mean Likert Scale Value for Customer Based Brand Equity

Table 10 - Casewise Diagnostics